

**PROSPECTUS SUPPLEMENT**  
**(To Prospectus dated October 31, 2024)**



**Spectral AI, Inc.**

**3,065,000 Shares of Common Stock**

We are offering in a registered direct offering to certain investors (the “Investors”) 3,065,000 shares (the “Shares”) of our common stock, \$0.0001 par value per share (our “Common Stock”), at an offering price of \$1.90 per Share pursuant to this prospectus supplement and the accompanying base prospectus.

In a concurrent private placement, we are also offering to the Investors (i) warrants (the “Warrants”) to purchase up to 4,000,000 shares of our Common Stock, and (ii) pre-funded warrants (the “Pre-Funded Warrants”) to purchase up to 935,000 shares of our Common Stock. Each Warrant has an exercise price per share of \$2.51, will be exercisable on the earlier of (A) the effective date of the stockholder approval for the issuance of shares of Common Stock issuable upon exercise of the Warrants (the “Stockholder Approval Date”) and (b) the date that is six months following the issuance date of the Warrants (the “Initial Exercise Date”) and will have a term of five (5) years from the initial issuance date of the Warrant. Each Pre-Funded Warrant has a purchase price of \$1.8999, an exercise price per share of \$0.0001 and is exercisable immediately and may be exercised at any time until such Pre-Funded Warrant is exercised in full. The shares of Common Stock issuable upon exercise of the Warrants and the Pre-Funded Warrants are collectively referred to as the “Warrant Shares.” The Warrants, the Pre-Funded Warrants and the Warrant Shares are not being registered under the Securities Act of 1933, as amended (the “Securities Act”), pursuant to the registration statement of which this prospectus supplement and the accompanying base prospectus form a part and are not being offered pursuant to this prospectus supplement and the accompanying base prospectus. The Warrants, the Pre-Funded Warrants and the Warrant Shares are being offered pursuant to an exemption from the registration requirements of the Securities Act provided in Section 4(a)(2) of the Securities Act and/or Rule 506(b) promulgated thereunder.

We have engaged Northland Securities, Inc. (the “placement agent”) as our sole placement agent in connection with this offering. The placement agent has agreed to use its reasonable best efforts to arrange for the sale of the securities offered by this prospectus supplement and the accompanying prospectus. The placement agent is not purchasing or selling any of the securities we are offering, and the placement agent is not required to arrange the purchase or sale of any specific number or dollar amount of the securities. We have agreed to pay the placement agent the fees set forth in the table below which assumes that we sell all of the securities offered by the prospectus supplement and the accompanying base prospectus. We will bear all costs associated with this offering. See “Plan of Distribution” in this prospectus supplement for more information regarding these arrangements.

Our Common Stock is traded on The Nasdaq Capital Market (“Nasdaq”) under the symbol “MDAI.” On October 22, 2025, the closing price for our Common Stock, as reported on Nasdaq, was \$2.24 per share.

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As of October 22, 2025, the aggregate market value of our outstanding Common Stock held by non-affiliates, or public float, was approximately \$52.1 million, based on 27,623,895 shares of outstanding Common Stock, of which approximately 7,879,429 shares were held by affiliates, and a price of \$2.64 per share, which was the price at which our Common Stock was last sold on Nasdaq on October 15, 2025. We have sold approximately \$6.3 million worth of securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12-calendar month period that ends on and includes the date of this prospectus supplement (excluding this offering and other offerings as evidenced by our previous prospectus supplements as filed with the SEC). Accordingly, based on the foregoing, we are currently eligible under General Instruction I.B.6 of Form S-3 to offer and sell shares of our Common Stock having an aggregate offering price of up to approximately \$11.1 million. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in a public primary offering with a value exceeding one-third of our public float in any 12-month period so long as our public float remains below \$75.0 million.

**Investing in our Common Stock involves a high degree of risk. See “Risk Factors” on page S-5 of this prospectus supplement and the accompanying base prospectus, as well as the risk factors incorporated by reference into this prospectus supplement and accompanying base prospectus for a discussion of the factors you should carefully consider before deciding to purchase these securities.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or accompanying base prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

	<b>Per Share of Common Stock</b>	<b>Total</b>
Public offering price	\$ 1.90	\$ 5,823,500
Placement agent fees <sup>(1)</sup>	\$ 0.114	\$ 349,410
Proceeds to us, before expenses	\$ 1.786	\$ 5,474,090

(1) We have agreed to pay the placement agent a cash placement commission equal to 6.0% of the aggregate proceeds from the sale of the shares of Common Stock sold in this offering and to reimburse the placement agent for certain of their offering-related expenses. See “Plan of Distribution” for additional information regarding placement agent fees and estimated expenses.

The delivery to purchasers of the securities offered and sold in this offering is expected to be made on or about October 23, 2025, subject to satisfaction of certain customary closing conditions.

*Sole Placement Agent*

**Northland Capital Markets**

The date of this prospectus supplement is October 22, 2025

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## ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying base prospectus are part of a registration statement on Form S-3 (File No. 333-282681) that we filed with the Securities and Exchange Commission (the “SEC”) on October 16, 2024, and that was declared effective by the SEC on October 31, 2024 using a “shelf” registration process. This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying base prospectus and the documents incorporated by reference herein. The second part, the accompanying base prospectus, provides more general information, some of which may not apply to this offering. Generally, when we refer to this prospectus, we are referring to both the prospectus supplement and the accompanying base prospectus combined. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying base prospectus or any document incorporated by reference therein filed prior to the date of this prospectus supplement, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying base prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained in this prospectus supplement or the accompanying base prospectus or incorporated by reference herein or therein. We have not authorized, and the placement agent has not authorized, anyone to provide you with information that is different. The information contained in this prospectus supplement or the accompanying base prospectus or incorporated by reference herein or therein is accurate only as of the respective dates thereof, regardless of the time of delivery of this prospectus supplement and the accompanying base prospectus or of any sale of our securities.

This prospectus supplement and the accompanying base prospectus contain summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated herein by reference as exhibits to the registration statement, and you may obtain copies of those documents as described below in the section entitled “Where You Can Find More Information.”

It is important for you to read and consider all information contained in this prospectus supplement and the accompanying base prospectus, including the documents incorporated by reference herein and therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find More Information” and “Incorporation of Certain Information By Reference” in this prospectus supplement and in the accompanying base prospectus, respectively.

This prospectus supplement and the accompanying base prospectus contain and incorporate by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly-available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. Although we are not aware of any misstatements regarding the market and industry data presented in this prospectus supplement, accompanying base prospectus or the documents incorporated herein by reference, these estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed in the section entitled “Risk Factors” in this prospectus supplement and the accompanying base prospectus, and under similar headings in the other documents that are incorporated by reference herein and therein. Accordingly, investors should not place undue reliance on this information.

We are offering to sell, and seeking offers to buy, the securities offered by this prospectus supplement only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying base prospectus and the offering of the securities offered by this prospectus supplement in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying base prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus supplement and the accompanying base prospectus outside the United States. This prospectus supplement and the accompanying base prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying base prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless the context otherwise indicates, references in this prospectus to, “Spectral,” “the Company,” “we,” “our,” or “us” mean Spectral AI, Inc., a Delaware corporation.

## PROSPECTUS SUPPLEMENT SUMMARY

*This summary highlights certain information about us and certain information contained elsewhere in this prospectus supplement, in the accompanying base prospectus and in the documents incorporated by reference herein and therein. This summary is not complete and does not contain all of the information that you should consider before making an investment decision. For a more complete understanding of the Company, you should read and consider carefully the more detailed information included in this prospectus supplement and the accompanying base prospectus, including the factors described under the heading “Risk Factors,” on page S-5 of this prospectus supplement, the “Risk Factors” section beginning on page 4 of the accompanying base prospectus as well as the information incorporated herein and therein by reference, before making an investment decision.*

### Overview of the Company

#### Overview

Spectral AI, Inc., a Delaware corporation (the “Company”), is an Artificial Intelligence (“AI”) company focused on predictive medical diagnostics. Our DeepView™ System uses proprietary AI algorithms to distinguish between fully damaged, partially damaged and healthy human tissue characteristics invisible to the naked eye, at the initial time point of wound presentation. The DeepView System delivers a binary prediction on the wound’s capacity to heal or not-heal by a specified time point in the future. Our DeepView System’s output is specifically engineered to assist the physician in making a more accurate, timely and informed decision regarding the treatment of the patient’s wounds. Our focus is on our burn indication.

In February 2024, our DeepView System, comprised of the multispectral imaging (“MSI”) component integrated with the predictive AI-Burn® software component, received United Kingdom Conformity Assessed (“UKCA”) marking for use in the United Kingdom for burn indications. In June 2025, we filed a De Novo application for the DeepView System with the United States Food and Drug Administration (“FDA”) so that it may achieve Class II medical device designation. Following our anticipated receipt of additional necessary market authorization, our business will have two revenue streams, a SaaS (software as a service) model component predicated on utilizing the regulatory method, SaMD (software as a medical device), and the imaging device component. The SaaS component will feature a software licensing fee that includes maintenance, image hosting, and access to algorithmic updates. The proprietary imaging device acquires the images for the AI algorithms and is a universal platform to house multiple clinical indications including burn wound healing analysis and other tissue indication assessments. Pricing for these components will be evaluated and strategically set per country and site-of-service for heightened customer adoption.

The DeepView System is comprised of the DeepView-AI Burns® software and the DeepView SnapShot® imaging device, and it is intended to be used as an adjunctive tool to aid health care providers in the assessment of burn wound healing potential by differentiating non-healing from healing tissue within an image. The MSI imaging technology within the DeepView SnapShot imaging device consists of patented proprietary multi-spectral optics and sensors, capturing injured tissue images ranging from near ultraviolet light, through the human visible wavelengths, and into the near infrared range. The broad wavelength ranges go beyond what the human eyes can see and capture what medical professionals cannot observe with their naked eyes. This wide range of wavelength images contains wound tissue physiology and captures the viability of various biomarkers within the skin and from the injured tissue spectral signatures. The imaging technology extracts appropriate clinical data and processes the image data to provide the injured tissue spectral signatures to the DeepView AI Burns software AI model and algorithms. The AI algorithm classifies various severities of the injuries as (i) fully damaged (non-healing), (ii) partially damaged or (iii) healthy tissue (healing) and displays a comparison of the original image next to an image with a color overlay of the non-healing portions of the wound. The image acquisition takes 0.2 seconds, and all image processing and AI model classification takes approximately 20 to 25 seconds. Our DeepView System’s proprietary optics can extract millions of pixels of data or AI model features from each group of raw images. This information is then used to advance algorithm optimization, which is trained and tested against a proprietary and clinically validated database of over 340 billion pixels of image data.

The Company has not generated any product revenue to date. The Company currently generates revenue from contract development and research services by providing such services to governmental agencies, primarily to the Biomedical Advanced Research and Development Authority (“BARDA”) and under a contract with the Medical Technology Enterprise Consortium (“MTEC”).

We have received substantial support from the U.S. government for our DeepView System’s application for burn wounds from BARDA, which is part of the Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response in the United States, established to aid in securing the United States from chemical, biological, radiological, and nuclear threats, as well as from pandemic influenza and emerging infectious diseases. We have also received funding from the National Science Foundation, the National Institute of Health and the Defense Health Agency (“DHA”), an agency within the Department of Defense. On September 27, 2023, the Company executed a new contract with BARDA, providing the Company with additional funding of up to \$150.0 million. This includes an initial award of approximately \$54.9 million to support the clinical validation study and the distribution of up to 30 DeepView Systems in various emergency rooms and burn centers to support the study. The funding also supported the Company’s FDA De Novo submission of our DeepView AI – Burn software, which was completed on June 30, 2025. The contract also includes options, similar to our prior BARDA contracts, with an additional total value of approximately \$95.1 million which can be exercised for additional product development, procurement and the expanded deployment of DeepView Systems at emergency rooms, trauma and burn centers. These deployments will enable the Company to conduct health economic and outcome research to support the broader clinical adoption of the DeepView System.

Subject to our receipt of the necessary regulatory market authorizations, we intend to initially sell the DeepView System throughout the United States and the UK for its burn indication. Given our receipt of the UKCA authorization for our burn indication we anticipate initial sales in UK to begin in 2026. The sales channel for our burn indication will be supported by existing and future governmental contracts, primarily from agencies such as BARDA and the DHA. In the United States, there are approximately 100 burn centers, 700 trauma centers and 5,400 federal and community hospitals with emergency rooms where the burn patients are most likely to present upon injury. The DeepView System provides a quick clinical decision tool for emergency room clinicians. It can be used to quickly assess the healing potential for burn wounds so decisions regarding whether patients need routine care or should be transferred to trauma centers or burn centers for advanced care and accurate surgical planning can be made in a much more timely fashion. The DeepView System provides an advanced assessment of the non-healing areas of a burn in emergency rooms, trauma centers and burn centers. For the DeepView System’s burn application and following receipt of any future contract awards, we plan to partner with the U.S. governmental agency sponsors to implement the distribution of our DeepView System throughout the United States into key regions to support the United States’ mass casualty countermeasure directives, with the goal of making our country better prepared for mass casualty events and saving scarce healthcare resources.

#### **Registered Direct Offering and Private Placement**

On October 22, 2025, we entered into a securities purchase agreement with the certain institutional investors (the “Investors”) for the sale of an aggregate of 3,065,000 shares (the “Shares”) of Common Stock, at an offering price of \$1.90 per Share (the “Securities Purchase Agreement”). The sale and issuance of the Shares was made pursuant to this prospectus supplement and accompanying prospectus.

Additionally, in a concurrent private placement pursuant to the Securities Purchase Agreement (the “Private Placement”), the Company agreed to sell to the Investors an aggregate of (i) Warrants to purchase 4,000,000 shares of Common Stock at an exercise price of \$2.51 per share, or (ii) Pre-Funded Warrants to purchase 935,000 shares of Common Stock at an exercise price of \$0.0001 per share. The Warrants and the Pre-Funded Warrants, along with the shares of Common Stock issuable upon the exercise of the Warrants or Pre-Funded Warrants, as applicable, were offered pursuant to the exemptions provided in Section 4(a)(2) under the Securities Act of 1933, as amended (the “Securities Act”).

The Securities Purchase Agreement contains customary representations, warranties and agreements by the Company and the Investors and customary conditions to closing. Additionally, in connection with this offering and the Private Placement, we entered into a registration rights agreement with the Investors that granted certain registration rights.

The Warrants issued in connection with the Securities Purchase Agreement will be exercisable for a period commencing on the Stockholder Approval Date and expiring on the close of business on the fifth anniversary of the date of issuance of the Warrants. Each Pre-Funded Warrant has a purchase price of \$1.8999, an exercise price per share of \$0.0001 and is exercisable immediately and may be exercised at any time until such Pre-Funded Warrant is exercised in full. Additionally, the Warrants and Pre-Funded Warrants issued in connection with the Securities Purchase Agreement contain adjustment provisions, subject to certain exceptions and limitations, in the event of (i) stock dividends and split, (ii) reclassifications of securities, (iii) issuance of Common Stock or Common Stock Equivalents (as defined in the Securities Purchase Agreement), (iv) pro rata distributions, (v) Fundamental Transactions (as defined in the Warrants), and (vi) subsequent equity sales of shares of Common Stock or Common Stock equivalents for a consideration per share less than a price equal to \$2.51. See “Concurrent Private Placement of Pre-Funded Warrants and Warrants” for further details.

### **Corporate History**

On September 12, 2023, following completion of the Company’s business combination with Rosecliff Acquisition Corp I, the Company began trading its shares of the Company Common Stock and the Public Warrants on the Nasdaq Global Market (the “Nasdaq”) under the symbols “MDAI” and “MDAIW”, respectively.

Our principal executive offices are located at 2515 McKinney Ave, Suite 1000, Dallas, TX. Our telephone number is (972) 499-4934. Our website is <https://investors.spectral-ai.com>. The information found on, or otherwise accessible through, our website is not incorporated into, and does not form a part of, this prospectus or any other report or document we file with or furnish to the SEC. We have included our website address in this prospectus solely as an inactive textual reference.

### **Implications of Being an Emerging Growth Company and Smaller Reporting Company**

We are an emerging growth company, as defined in the JOBS Act. The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act for the adoption of certain accounting standards until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply more promptly with new or revised accounting pronouncements as of public company effective dates.

In addition, as an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to present only two years of audited consolidated financial statements in addition to any required unaudited interim consolidated financial statements, with correspondingly reduced disclosure in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the base prospectus;
- an exception from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements.

We may take advantage of these provisions until the last day of the fiscal year ending after the fifth anniversary of the Company’s initial public offering or such earlier time that we no longer qualify as an emerging growth company. We will cease to qualify as an emerging growth company on the date that is the earliest of: (i) December 31, 2026; (ii) the last day of the fiscal year in which we have more than \$1.235 billion in total annual gross revenues; (iii) the date on which we are deemed to be a “large accelerated filer” under the rules of the SEC, which means the market value of our Common Stock that is held by non-affiliates exceeds \$700.0 million as of the prior June 30th and we have been a public company for at least 12 months and have filed one annual report on Form 10-K; or (iv) the date on which we have issued more than \$1.0 billion of non-convertible debt over the prior three-year period. We may choose to take advantage of some but not all of these reduced reporting burdens. Accordingly, the information contained herein may be different than you might obtain from other public companies in which you hold equity interests.

We are also a “smaller reporting company.” If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited consolidated financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

### **Corporate Information**

Our principal executive office is located at 2515 McKinney Avenue, Suite 1000, Dallas, TX 75201, and our phone number is (972) 499-4934.

## THE OFFERING

<b>Common Stock offered by us</b>	3,065,000 shares of our Common Stock.
<b>Offering Price of our Common Stock</b>	\$1.90 per share of our Common Stock.
<b>Common Stock outstanding following this Offering</b>	30,688,895 shares of our Common Stock.
<b>Use of Proceeds</b>	<p>We estimate that our net proceeds from this offering will be approximately \$5.1 million, after deducting the placement agent fees and the estimated offering expenses payable by us.</p> <p>We intend to use the net proceeds from this offering for working capital and general corporate purposes. See “Use of Proceeds” for a more complete description of the intended use of proceeds from this offering.</p>
<b>Concurrent Private Placement</b>	<p>In a concurrent private placement, we intend to sell Pre-Funded Warrants to purchase up to 935,000 shares of our Common Stock and Warrants to purchase up to 4,000,000 shares of our Common Stock to the same investors purchasing the Shares in this offering. The Pre-Funded Warrants have an exercise price of \$0.0001 per share and will be exercisable immediately following issuance until such Pre-Funded Warrants are exercised in full. The Warrants have an exercise price of \$2.51 per share and will be exercisable for a period commencing on the earlier of (i) the Stockholder Approval Date and (ii) the date that is six months following the issuance date of the Warrants and expiring on the five-year anniversary of the issuance date of the Warrants. The Pre-Funded Warrants, the Warrants and the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants and the Warrants are not being registered under the Securities Act and are not being offered pursuant to this prospectus supplement and the accompanying base prospectus but are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and/or Rule 506(b) promulgated thereunder. See “Concurrent Private Placement of Pre-Funded Warrants and Warrants.”</p>
<b>Dividend Policy</b>	<p>We have never declared or paid cash dividends on our Common Stock and do not anticipate paying any cash dividends in the foreseeable future but intend to retain our capital resources for reinvestment in our business.</p>
<b>Trading Market and Ticker Symbol for Common Stock</b>	<p>Our Common Stock is listed on Nasdaq under the symbol “MDAI.”</p>
<b>Risk Factors</b>	<p>Investing in our securities involves a high degree of risk. For a discussion of factors to consider before deciding to invest in our Common Stock, you should carefully review and consider the “Risk Factors” section beginning on page S-5 of this prospectus supplement and in the documents incorporated by reference in this prospectus supplement.</p>

The number of shares of our Common Stock to be outstanding immediately after this offering is based on 27,623,895 shares of our Common Stock issued and outstanding as of October 22, 2025, and excludes:

- 3,867,901 shares of our Common Stock issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$1.83 per share;
- 9,940,181 shares of our Common Stock issuable upon the exercise of outstanding warrants at a weighted average exercise price of \$2.64 per share;
- 59,700 shares of our Common Stock issuable upon vesting of restricted stock units issued under our equity incentive plan;
- 935,000 shares of our Common Stock issuable upon exercise of the Pre-Funded Warrants being issued in the concurrent private placement with an exercise price of \$0.0001 per share; and
- 54,502 shares of our Common Stock issuable upon exercise of the Warrants with an exercise price of \$2.51 per share being issued (i) in the concurrent private placement and (ii) in a concurrent private placement pursuant to a Confirmation Agreement, dated October 14, 2025, between the Company and Dominari Securities, LLC.

Unless otherwise indicated, this prospectus supplement reflects and assumes no exercise of outstanding options or warrants.

## RISK FACTORS

*Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully the risks and uncertainties discussed under the sections titled “Risk Factors” contained in our most recent Annual Report on Form 10-K and in any subsequently filed Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in our subsequent filings with the SEC, which are incorporated by reference into this prospectus supplement, together with other information in this prospectus supplement, the documents incorporated by reference herein, and any prospectus supplement and any free writing prospectus that we may authorize. Please also read carefully the section titled “Cautionary Note Regarding Forward-Looking Statements.” Additional risks and uncertainties not presently known to us, or that we currently deem immaterial, may also adversely affect our business. In addition, past financial performance may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods.*

### **Risks Related to this Offering**

***You may experience immediate and substantial dilution in the net tangible book value per share of our Common Stock you purchase in the offering.***

The offering price per share in this offering may exceed the net tangible book value per share of our Common Stock outstanding prior to this offering. After giving effect to the sale by us of the Shares at a price of \$1.90 per Share, and after placement agent fees and estimated offering expenses payable by us, you will experience immediate decrease in valuation of 0.8% per share, representing the difference between our as adjusted net tangible book value per share as of June 30, 2025 after giving effect to this offering and the assumed offering price. The exercise of outstanding warrants and stock options may also result in further dilution of your investment. See the section entitled “Dilution” on page S-15 below for a more detailed illustration of the dilution you may incur if you participate in this offering.

***Our management will have broad discretion as to the use of the proceeds from this offering, and may not use the proceeds effectively.***

Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that may not improve our business, financial condition or results of operations or enhance the value of our Common Stock. Our failure to apply these funds effectively could have a material adverse effect on our business and cause the price of our Common Stock to decline.

***Resales of our Common Stock in the public market following this offering may cause the trading price to fall.***

The resale of a substantial number of shares of Common Stock could depress the trading price of our Common Stock. This offering of new shares of our Common Stock could result in resales of our Common Stock by our current stockholders concerned about the potential dilution of their holdings. If our stockholders sell substantial amounts of our Common Stock in the public market following the offering contemplated by this prospectus supplement, the trading price of our Common Stock could fall.

***Our stock price has been and may continue to be volatile.***

Our Common Stock has a relatively low trading volume and the market price has been, and is likely to continue to be, volatile. The variance in our stock price makes it difficult to forecast the stock price at which an investor may be able to buy or sell shares of our Common Stock. The market price for our Common Stock could be subject to fluctuations as a result of factors that are out of our control, such as:

- actual or anticipated variations in our results of operations;
- general conditions and trends in the medical industry;

- redemption demands on institutional funds that hold our Common Stock; and
- general economic, political and market conditions.

***We do not intend to pay dividends on our Common Stock, so any returns will be limited to the value of our Common Stock.***

We currently anticipate that we will retain any future earnings to finance the continued development, operation and expansion of our business. As a result, we do not anticipate declaring or paying any cash dividends or other distributions in the foreseeable future. If we do not pay dividends, our Common Stock may be less valuable because stockholders must rely on sales of their Common Stock after price appreciation, which may never occur, to realize any gains on their investment.

***The Warrants offered in the concurrent private placement contain price protection in the form of anti-dilution provisions that could harm trading in our Common Stock and make it difficult for us to obtain additional financing.***

The Warrants offered in the private placement occurring concurrently with this offering have price-based anti-dilution protection provisions. Under these anti-dilution provisions, while these Warrants are outstanding, subject to certain limited exceptions, the exercise price of these warrants will be reduced each time we issue or sell (or are deemed to issue or sell) any securities for a consideration per share less than a price equal to their exercise price in effect immediately prior to such issuance or sale (or deemed issuance or sale), provided that in no event will the exercise price be reduced to less than the floor price (as described below), subject to customary adjustments in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock. In addition, these anti-dilution provisions provide that, if the exercise price of the Warrants decreases, then the number of shares of our Common Stock issuable upon exercise thereof will proportionally increase. The floor price is \$0.48, and, if the exercise price of the Warrants were to be reduced to the floor price, the total number of shares of Common Stock potentially issuable upon exercise of all the Warrants being offered in private placement occurring concurrently with this offering would be 19,870,833. To the extent we trigger, or enter into any agreement or issue any security that would trigger, the anti-dilution provisions of these warrants, our stockholders may experience substantial dilution. The overhang represented by these Warrants, coupled with their anti-dilution protection provisions, may make it more difficult for us to raise additional capital, because of the possible substantial dilution to any new purchaser of our securities and the ability of holders of these Warrants to enter into short sales of our stock. Any potential new purchaser of our securities may choose to value our Common Stock in such a manner that takes into account the number of shares of our Common Stock that would be outstanding immediately following the exercise of all these Warrants.

***We may, in the future, issue additional Common Stock, which would reduce investors' percent of ownership and may dilute our share value.***

As of October 22, 2025, our Certificate of Incorporation, as amended, authorizes the issuance of 80,000,000 shares of Common Stock, and we had 27,623,895 shares of our Common Stock issued and outstanding. The future issuance of Common Stock may result in substantial dilution in the percentage of our Common Stock held by our then existing stockholders. We may value any Common Stock in the future on an arbitrary basis. The issuance of Common Stock for future services or acquisitions or other corporate actions may have the effect of diluting the value of the shares held by our investors, might have an adverse effect on any trading market for our Common Stock and could impair our ability to raise capital in the future through the sale of equity securities.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section entitled “Risk Factors.”

The forward-looking statements contained in this prospectus supplement and the accompanying prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, the following risks, uncertainties and other factors:

- We have incurred significant losses since inception and may not be able to achieve significant revenues or profitability.
- We are devoting substantially all of our efforts towards research and development of our DeepView System.
- We depend on government funding, which if lost or reduced, could have a material adverse effect on our research and development activities and our ability to commercialize our DeepView technology. Our largest contract is with the Biomedical Advanced Research and Development Authority (“BARDA”) and is the largest single source of revenue for us. Our BARDA contract is not guaranteed to be completed or extended.
- The regulatory review process is expensive, time-consuming, and uncertain and we may be unable to obtain clearance, approval, De Novo classification, or certification for our DeepView technology.
- We are highly dependent on our senior management, directors and key personnel, and our business could be harmed if we are unable to attract and retain personnel necessary for our success.
- We may experience significant delays in completing clinical trials, which could prevent or significantly delay our targeted product launch timeframe and impair our viability and business plan.
- New legislation and regulations and legislative and regulatory reforms may make it more difficult and costly for us to obtain regulatory clearance, approval, De Novo classification, or certification of our DeepView System, or to manufacture, market and distribute our device after clearance, approval, or classification is obtained.
- Disruptions at the FDA and foreign regulatory agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new products and services from being developed or commercialized in a timely manner, which could negatively impact our business.
- The ongoing labor shortage may limit our ability or the investigators’ ability to find and retain medical staff that are needed to conduct the clinical studies.
- Modifications to our DeepView System may require new clearances, approvals, De Novo classifications, certifications, or new or amended certifications, and may require us to cease marketing or to recall the modified device until clearances, approvals, De Novo classifications, or the relevant certifications are obtained.
- Quality problems and product liability claims could lead to recalls or safety alerts, reputational harm, adverse verdicts or costly settlements, and could have a material adverse effect on our business, results of operations, financial condition, and cash flows.
- We must comply with anti-kickback, fraud and abuse, false claims, transparency, and other healthcare laws and regulations.
- If our manufacturers fail to comply with the regulatory quality system regulations or any applicable equivalent regulations, our proposed operations could be interrupted, and our operating results would suffer.

- Actual or perceived failure to comply with data protection, privacy and security laws, regulations, standards and other requirements could negatively affect our business, financial condition or results of operations.
- As the regulatory framework for AI technology evolves, our business, financial condition and results of operation may be adversely affected.
- If we are unable to establish sales, marketing and distribution capabilities either on our own or in collaboration with third parties, we may not be successful in commercializing our DeepView System, if approved.
- We may not be able to achieve or maintain satisfactory pricing and margins for our DeepView technology.
- We will depend upon third-party suppliers, including contract manufacturers and single and sole source suppliers, making us vulnerable to supply shortages and price fluctuations that could negatively affect our business, financial condition and results of operations.
- We may encounter difficulties in managing our growth, which could disrupt our operations.
- The use of artificial intelligence, including machine learning, in our analytics platforms may result in reputational harm or liability.
- Product liability suits, whether or not meritorious, could be brought against us due to an alleged defective product or for the misuse of our DeepView System. These suits could result in expensive and time-consuming litigation, payment of substantial damages, and an increase in our insurance rates.
- The success of our algorithms depends on our significant repository of proprietary data.
- Changes in patent law or its interpretation could diminish the value of patents in general, thereby impairing our ability to protect our existing and future products.
- Our patent rights and other intellectual property may be subject to priority, ownership or inventorship disputes, interferences, and similar proceedings and we may not be able to enforce our intellectual property rights throughout the world.
- Nasdaq may delist our securities from trading on its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.
- We will incur increased costs as a result of operating as a public company, and the Company's management will be required to devote substantial time to new compliance and investor relations initiatives.
- The price of our Common Stock may be volatile.
- Changes in laws, regulations or rules, or a failure to comply with any laws, regulations or rules, may adversely affect our business, investments and results of operations.
- If we fail to maintain proper and effective internal controls over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our Common Stock may decline.
- Certain existing stockholders purchased, or may purchase, securities in the Company at a price below the current trading price of such securities and may experience a positive rate of return based on the current trading price. Future investors in the Company may not experience a similar rate of return.
- Warrants may become exercisable for Common Stock, which would increase the number of shares eligible for resale in the public market and result in dilution to our stockholders.

We have included important factors in the cautionary statements included in this prospectus supplement, the accompanying prospectus, and the documents we incorporate by reference herein and therein, particularly in the "Risk Factors" section of our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. No forward-looking statement is a guarantee of future performance.

You should read this prospectus supplement, the accompanying prospectus, any related free-writing prospectus, and the documents incorporated by reference herein and therein completely and with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect. The forward-looking statements contained or incorporated by reference in the base prospectus, this prospectus supplement or any other prospectus supplement herein and therein represent our views as of the date of this prospectus supplement and are expressly qualified in their entirety by this cautionary statement. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus supplement.

## USE OF PROCEEDS

We estimate that the net proceeds from the sale of our Common Stock in this offering will be approximately \$5.1 million, after deducting placement agent fees and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for working capital and general corporate purposes. This estimate excludes the proceeds, if any, from the concurrent private placements and does not give effect to any exercise of the Warrants being issued in the concurrent private placements.

This expected use of the net proceeds from this offering and our existing cash represents our intentions based upon our current plans, financial condition and business conditions. The amount, timing and nature of specific expenditures of net proceeds from this offering will depend on a number of factors, including the timing, scope, progress and results of our development efforts and the timing and progress of any collaboration efforts. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses of the proceeds from this offering. Accordingly, we will retain broad discretion over the use of such proceeds.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments, and government securities.

## **DIVIDEND POLICY**

We have never declared or paid dividends on our Common Stock and we do not anticipate paying any cash dividends on our Common Stock in the foreseeable future. Payment of cash dividends, if any, in the future will be at the discretion of our board of directors and will depend on applicable law and then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business.

## DESCRIPTION OF THE COMMON STOCK

The material terms and provisions of our Common Stock are described under the caption “Description of Capital Stock” in the accompanying prospectus and are incorporated herein by reference.

## CONCURRENT PRIVATE PLACEMENT OF PRE-FUNDED WARRANTS AND WARRANTS

In a concurrent private placement, we plan to issue to the investors in this offering (i) Pre-Funded Warrants to purchase up to an aggregate of 935,000 shares of Common Stock at an exercise price of \$0.0001 per share and (ii) Warrants to purchase up to an aggregate of 4,000,000 shares of Common Stock at an exercise price of \$2.51 per share. The Pre-Funded Warrants will be exercisable immediately upon issuance until such Pre-Funded Warrants are exercised in full. The Warrants are exercisable beginning on the Initial Exercise Date and ending on the five-year anniversary of the issuance date.

We will receive gross proceeds from the concurrent private placement transaction solely to the extent such Pre-Funded Warrants and Warrants are exercised for cash.

The Pre-Funded Warrants, Warrants and Warrant Shares are not being registered under the Securities Act, are not being offered pursuant to this prospectus supplement and the accompanying base prospectus and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and/or Rule 506(b) promulgated thereunder. Accordingly, the investors may only sell shares of Common Stock issued upon exercise of the Warrants pursuant to an effective registration statement under the Securities Act covering the resale of those shares, an exemption under Rule 144 under the Securities Act or another applicable exemption under the Securities Act.

The summary below is not complete and is subject to, and qualified in its entirety by, the provisions of the form of Pre-Funded Warrant and the form of Warrant which will be filed with the SEC as an exhibit to a Current Report on Form 8-K in connection with this offering and incorporated by reference into this prospectus supplement and the registration statement of which this prospectus supplement and the accompanying base prospectus form a part. Prospective investors should carefully review the terms and provisions of the form of Pre-Funded Warrant and the form of Warrant for a complete description of the terms and conditions of these Pre-Funded Warrants and Warrants.

### **Pre-Funded Warrants**

#### ***Form***

The Pre-Funded Warrants will be issued as individual warrant agreements to the purchasers. The form of Pre-Funded Warrant will be filed as an exhibit to a Current Report on Form 8-K that we will file with the SEC.

#### ***Term***

The Pre-Funded Warrants are exercisable upon issuance and remain outstanding until exercised in full.

#### ***Exercisability***

The Pre-Funded Warrants entitle the holder to purchase shares of our Common Stock at a nominal exercise price. The aggregate purchase price for the shares underlying the Pre-Funded Warrants, less the nominal per-share exercise price, will be pre-paid to us at issuance. The Pre-Funded Warrants may be exercised, at the holder's option, in whole or in part, by delivery of a duly executed notice of exercise and payment of the nominal exercise price in immediately available funds. If no effective registration statement is available for the issuance or resale of the shares underlying the Pre-Funded Warrants, the Pre-Funded Warrants may be exercised on a cashless basis pursuant to the formula set forth therein. We will not issue fractional shares upon exercise; we will instead, at our election, either pay cash equal to the fraction multiplied by the exercise price or round up to the next whole share.

#### ***Exercise Limitations***

We may not effect the exercise of any Pre-Funded Warrant, and a holder will not be entitled to exercise any portion of any Pre-Funded Warrant to the extent that after giving effect to such exercise, the holder (together with the holder's affiliates, and any other persons acting as a group together with the holder or any of the holder's affiliates) would beneficially own in excess of 9.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of such Pre-Funded Warrant. A holder, upon notice to the Company, may increase or decrease the beneficial ownership limitation under the pre-funded warrant, provided that it in no event exceeds 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of the Pre-Funded Warrant. Any such increase in the percentage will not be effective until the 61st day after such notice is delivered to the Company.

#### ***Exercise Price***

The exercise price of our shares of Common Stock purchasable upon the exercise of the Pre-Funded Warrants is \$0.0001 per share. The exercise price of the Pre-Funded Warrants and the number of shares of Common Stock issuable upon exercise of the Pre-Funded Warrants is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our shares of Common Stock.

### ***Adjustments***

In addition to the adjustments described under “Exercise Price” above, if we grant, issue or sell any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to all record holders of any class of shares of our Common Stock or declare or make any dividend or other distribution of our assets (or rights to acquire our assets) to holders of shares of Common Stock, by way of return of capital or otherwise, then, in each case, each Pre-Funded Warrant holder will be entitled to acquire such rights or participate in such distribution, on the same terms as the holder could have acquired or participated if the holder held the number of shares of Common Stock acquirable upon complete exercise of the Pre-Funded Warrant without regard to any exercise limitations, subject to certain exceptions to the extent participation would result in the holder exceeding its beneficial ownership limitation under the Pre-Funded Warrant.

### ***Transferability***

Subject to applicable laws, a Pre-Funded Warrant may be transferred at the option of the holder upon surrender of the Pre-Funded Warrant to us together with the appropriate instruments of transfer; provided, however, if the transfer of the Pre-Funded Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale without volume or manner-of-sale restrictions or current public information requirements pursuant to Rule 144, we may require, as a condition of allowing such transfer, that the holder or transferee of the Pre-Funded Warrant, as the case may be, agrees in writing to be bound by the provisions of the transferred Pre-Funded Warrant.

### ***Exchange Listing***

There is no established public trading market for the Pre-Funded Warrants, and we do not expect a market to develop. In addition, we do not intend to list the Pre-Funded Warrants on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

### ***Fundamental Transactions***

Upon the consummation of a fundamental transaction (as described in the Pre-Funded Warrants, and generally including any reclassification or compulsory share exchange of our Common Stock, the sale of all or substantially all of our properties or assets, our consolidation or merger with or into another person, or that results in the acquisition of more than 50% of our outstanding Common Stock, or a business combination, including a reorganization or recapitalization, whereby the counterparty acquires more than 50% of the voting power of our securities), a holder of the Pre-Funded Warrants will be entitled to receive, upon exercise of the Pre-Funded Warrants, the kind and amount of securities, cash or other property that such holder would have received had they exercised the Pre-Funded Warrants immediately prior to such fundamental transaction, without regard to any limitations on exercise contained in the Pre-Funded Warrants.

### ***No Rights as a Stockholder***

Except by virtue of such holder’s ownership of shares of our Common Stock, the holder of a Pre-Funded Warrant does not have the rights or privileges of a holder of shares of our Common Stock, including any voting rights, until such holder exercises the Pre-Funded Warrant.

### ***Registration Rights***

We are required within 10 days of the issue date of the Pre-Funded Warrants to file a registration statement on Form S-3 providing for the resale of the Warrant Shares underlying the Pre-Funded Warrants. We are required to use commercially reasonable efforts to keep such registration statement effective at all times until no investor owns any Warrants or Warrant Shares.

## **Warrants**

### ***Form***

The Warrants will be issued as individual warrant agreements to the purchasers. The form of Warrant will be filed as an exhibit to a Current Report on Form 8-K that we will file with the SEC.

### ***Term***

The Warrants will be exercisable for the period commencing on the Initial Exercise Date and expiring the five-year anniversary of the date of issuance. The exercise price and number of shares of Common Stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our Common Stock and the exercise price. The Warrants will be issued separately from the Shares.

### ***Exercisability***

The Warrants may be exercised, at the holder's option, in whole or in part, by delivery of a duly executed notice of exercise and payment in full of the exercise price in immediately available funds. The Warrants are subject to a beneficial ownership limitation that generally restricts exercise to the extent that, after giving effect to the exercise, the holder (together with its affiliates and attribution parties) would beneficially own more than 9.99% of our outstanding Common Stock. In no event may the beneficial ownership limitation exceed 9.99% of our outstanding Common Stock or voting power following such exercise.

### ***Cashless Exercise***

If, at the time of exercise, there is no effective registration statement covering the issuance or resale of the underlying shares and an exemption is not available, the holder may exercise the Warrants on a cashless basis pursuant to the formula set forth therein. We will not issue fractional shares upon exercise; we will instead, at our election, either pay cash equal to the fraction multiplied by the exercise price or round up to the next whole share.

### ***Exercise Price***

Each Warrant offered hereby will have an initial exercise price per share equal to \$2.51.

### ***Exercise Price Adjustment***

In addition to customary adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our Common Stock, if at any time prior to the two-year anniversary of the Stockholder Approval Dates, we issue or sell, or are deemed to have issued or sold, any Common Stock, Common Stock Equivalents or securities convertible into or exchangeable for our Common Stock, other than in connection with certain exempt issuances, for a consideration per share (such lower price, the "Base Share Price") less than the exercise price in effect immediately prior to such issuance or sale or deemed issuance or sale (each, a "Dilutive Issuance"), then simultaneously with such issuance or sale or deemed issuance or sale, the exercise price of the Warrants then in effect will be reduced to the consideration per share at which the Common Stock or Common Stock Equivalents were issued or sold or deemed issued or sold; provided that in no event will the exercise price be reduced to less than the floor price of \$0.48, subject to customary adjustments in the event of stock dividends, stock splits, reorganizations or similar events affecting our Common Stock (the "Floor Price"). Notwithstanding the foregoing, if one or more Dilutive Issuances occurred prior to the Stockholder Approval Date, instead of the foregoing adjustment being made on the date of the Dilutive Issuance, the exercise price of the Warrants will automatically be reduced immediately following the Stockholder Approval Date to equal the greater of (i) lowest Base Share Price with respect to any Dilutive Issuance that occurred prior to the Stockholder Approval Date and (ii) the Floor Price. If the exercise price of the Warrants were to be reduced to the floor price, the total number of shares of Common Stock potentially issuable upon exercise of all the Warrants being offered in this offering would be 19,870,833.

### ***Transferability***

The Warrants are transferable, subject to compliance with applicable securities laws and the terms set forth therein, including, if not registered or eligible for unrestricted resale under Rule 144, our right to require a reasonably satisfactory legal opinion. We will bear transfer agent and DTC fees for electronic delivery of shares upon exercise when applicable. There is no established public trading market for the Warrants, and we do not intend to list them on any national securities exchange or trading system. Without an active trading market, the liquidity of the Warrants will be limited.

### ***Exchange Listing***

There is no established public trading market for the Warrants, and we do not expect a market to develop. In addition, we do not intend to list the Warrants on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the Warrants will be limited.

### ***Fundamental Transactions***

Upon the consummation of a fundamental transaction (as described in the Warrants, and generally including any reclassification or compulsory share exchange of our Common Stock, the sale of all or substantially all of our properties or assets, our consolidation or merger with or into another person, or that results in the acquisition of more than 50% of our outstanding Common Stock, or a business combination, including a reorganization or recapitalization, whereby the counterparty acquires more than 50% of the voting power of our securities), a holder of the Warrants will be entitled to receive, upon exercise of the Warrants, the kind and amount of securities, cash or other property that such holder would have received had they exercised the Warrants immediately prior to such fundamental transaction, without regard to any limitations on exercise contained in the Warrants.

### ***No Rights as a Stockholder***

Except as otherwise provided in the Warrants or by virtue of such holder's ownership of shares of our Common Stock, the holders of the Warrants do not have the rights or privileges of holders of our Common Stock, including any voting rights, until they exercise their Warrants.

### ***Registration Rights***

We are required within 10 days of the issue date of the Warrants to file a registration statement on Form S-3 providing for the resale of the Warrant Shares underlying the Warrants. We are required to use commercially reasonable efforts to keep such registration statement effective at all times until no investor owns any Warrants or Warrant Shares.

## DILUTION

If you invest in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per share and the as adjusted net tangible book value per share after giving effect to this offering. We calculate net tangible book value per share by dividing the net tangible book value, which is tangible assets less total liabilities, by the number of outstanding shares of our Common Stock. Dilution represents the difference between the portion of the amount per share paid by purchasers of shares in this offering and the as adjusted net tangible book value per share of our Common Stock immediately after giving effect to this offering. Our net tangible book value as of June 30, 2025 was approximately \$62.3 million, or \$2.42 per share of Common Stock.

After giving effect to the sale of our Common Stock at a price of \$1.90 per share, and after deducting estimated aggregate offering expenses payable by us, our net tangible book value as of June 30, 2025 would have been approximately \$67.4 million, or \$2.40 per share of Common Stock. This represents no increase in the net tangible book value per share to our existing stockholders and an immediate decrease in net tangible book value of 0.8% per share to new investors.

The following table illustrates this per share dilution:

Assumed offering price per share		\$	1.90
Net tangible book value per share as of June 30, 2025	\$	2.42	
Decrease per share attributable to this offering	\$	<u>0.02</u>	
As adjusted net tangible book value per share as of June 30, 2025, after giving effect to this offering		\$	<u>67,400,000</u>
Decrease per share to new investors purchasing shares in this offering			0.8%

The above table is based on 25,737,820 shares of our Common Stock outstanding as of June 30, 2025, and excludes:

- 4,407,870 shares of our Common Stock issuable upon the exercise of outstanding stock options at a weighted average exercise price of \$1.84 per share;
- 11,344,229 shares of our Common Stock issuable upon the exercise of outstanding and exercisable warrants at a weighted average exercise price of \$2.54 per share. (See “Risk Factors – You may experience future dilution as a result of future equity offerings or if we issue shares subject to options, warrants, stock awards or other arrangements”);
- 59,700 shares of our Common Stock issuable upon vesting of restricted stock units issued under our equity incentive plan;
- 935,000 shares of our Common Stock issuable upon exercise of the Pre-Funded Warrants being issued in the concurrent private placement with an exercise price of \$0.0001 per share; and
- 54,502 shares of our Common Stock issuable upon exercise of the Warrants with an exercise price of \$2.51 per share being issued (i) in the concurrent private placement and (ii) in a concurrent private placement pursuant to a Confirmation Agreement, dated October 14, 2025, between the Company and Dominari Securities, LLC.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise of the outstanding options or warrants described above. To the extent that any of these outstanding warrants or options are exercised at prices per share below the public offering price per share in this offering or we issue additional shares under our equity incentive plans at prices below the public offering price per share in this offering, you may experience further dilution. In addition, to the extent that we raise additional capital by issuing equity or convertible debt securities, your ownership will be further diluted.

## PLAN OF DISTRIBUTION

We have engaged Northland Securities, Inc. to act as our sole placement agent, on a reasonable best efforts basis, in connection with this offering pursuant to this prospectus supplement and accompanying prospectus. The terms of this offering are subject to market conditions and negotiations between us, the placement agent, and prospective investors. The placement agency agreement does not give rise to any commitment by the placement agent to purchase any of the securities, and the placement agent will have no authority to bind us by virtue of the placement agency agreement. The placement agent has no commitment to buy any of the securities offered pursuant to this prospectus supplement and accompanying prospectus. The placement agent is not purchasing the securities offered by us in this offering and is not required to sell any specific number or dollar amount of securities but will assist us in this offering on a reasonable best efforts basis. Further, the placement agent does not guarantee that it will be able to raise new capital in any prospective offering. The placement agent may engage sub-agents or selected dealers to assist with the offering. We have entered into a securities purchase agreement directly with the investors in connection with this offering, and we will only sell to investors pursuant to the terms of the securities purchase agreement. We may not sell the entire amount of securities offered pursuant to this prospectus supplement.

We expect to deliver the securities being offered pursuant to this prospectus supplement on or about October 23, 2025, subject to satisfaction of customary closing conditions

### Fees and Expenses

The following table shows, on a per share basis, the offering price, placement agent fees and proceeds, before expenses to us, in connection with the sale of the securities pursuant to this prospectus supplement.

	Per Share of Common Stock		Total
Public offering price	\$ 1.90	\$	5,823,500
Placement agent fees <sup>(1)</sup>	\$ 0.114	\$	349,410
Proceeds to us, before expenses	\$ 1.786	\$	5,474,090

(1) We have agreed to pay the placement agent in connection with this offering a cash fee equal to 6.0% of the aggregate gross proceeds from the sale of the securities in this offering.

We have also agreed to pay certain of the placement agent's expenses relating to the offering, including fees and expenses of the placement agent's legal counsel not to exceed \$135,000.

We estimate that the total expenses payable by us in connection with this offering, excluding to the placement agent fees and expenses referred to above, will be approximately \$250,000.

### Determination of Offering Price

The public offering price per share we are offering was negotiated between us and the Investors, in consultation with the placement agent based on the trading of our Common Stock prior to this offering, among other things. Other factors considered in determining the public offering price of the securities we are offering include the history and prospects of our company, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

**Tail**

We have also agreed to pay the placement agent a tail fee equal to the fee in this offering calculated based on the aggregate purchase price of any investor who was brought over-the-wall by the placement agent during the term of its engagement, in any subsequent offering during the six-month period following expiration or termination of our engagement with the placement agent.

**Lock-up Agreements**

We and certain of our officers, directors and stockholders have agreed with the placement agent to be subject to a lock-up period of ninety (90) days following the effective date of the registration statement covering the resale of the Warrant Shares being issued in the concurrent private placements (the "Effective Date"). This means that, during the applicable lock-up period, we and such persons may not offer for sale, contract to sell, or sell any shares of our Common Stock or any securities convertible into, or exercisable or exchangeable for, shares of our Common Stock, subject to certain customary exceptions. The placement agent may, in its sole discretion and without notice, waive the terms of any of these lock-up agreements. In addition, we have agreed to not effect variable rate financings for the two (2) year period following the Effective Date, subject to certain exceptions. The placement agent may waive this prohibition in its sole discretion and without notice.

**Prior Relationships**

The placement agent acted as the sole placement agent for our fixed price prepaid advance and standby equity purchase agreement that closed in March 2024. The placement agent received \$552,000.

**Regulation M Compliance**

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the sale of our securities offered hereby by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agent would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the placement agent. Under these rules and regulations, the placement agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

**Indemnification**

We have agreed to indemnify the placement agent against certain liabilities, including liabilities under the Securities Act and liabilities arising from breaches of representations and warranties contained in our placement agency agreement with the placement agent. We have also agreed to contribute to payments that the placement agent may be required to make in respect of such liabilities.

**Nasdaq Capital Market Listing**

Our Common Stock is listed on Nasdaq under the symbol "MDAI" and our public warrants are listed on Nasdaq under the symbol "MDAIW."

**Transfer Agent**

The transfer agent for our Common Stock is Continental Stock Transfer & Trust Company.

**Other Relationships**

The placement agent and its affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. The placement agent may in the future receive customary fees and commissions for these transactions. In the ordinary course of its various business activities, the placement agent and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for its own account and for the accounts of its customers, and such investment and securities activities may involve securities and/or instruments of the issuer. The placement agent and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

**Electronic Distribution**

This prospectus supplement, the accompanying base prospectus and the documents incorporated herein and therein by reference in electronic format may be made available on the websites maintained by the placement agent. The placement agent may distribute prospectuses electronically. The placement agent may agree to allocate a number of shares of common stock for sale to its online brokerage account holders.

Other than this prospectus supplement, the accompanying base prospectus and the documents incorporated herein and therein by reference in electronic format, information contained in any website maintained by the placement agent is not part of this prospectus supplement, the accompanying base prospectus or the documents incorporated herein and therein by reference, has not been endorsed by us and should not be relied on by investors in deciding whether to purchase common stock. The placement agent is not responsible for information contained in websites that they do not maintain.

## LEGAL MATTERS

The validity of the shares Common Stock offered hereby will be passed upon for us by Reed Smith LLP, Faegre Drinker Biddle & Reath LLP is acting as counsel for the placement agent in connection with this offering.

## EXPERTS

The consolidated financial statements of Spectral AI, Inc. as of December 31, 2024 and 2023 and for each of the years in the two-year period ended December 31, 2024, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement and accompanying base prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying base prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at <http://www.sec.gov>.

These documents are also available, free of charge, through the Investors section of our website, which is located at <https://investors.spectral-ai.com/>. The reference to our website in this prospectus supplement is an inactive textual reference only and is not a hyperlink. The contents of our website are not part of this prospectus supplement or accompanying prospectus, and you should not consider the contents of our website in making an investment decision with respect to our securities. This prospectus supplement does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement for free at [www.sec.gov](http://www.sec.gov).

We have not incorporated by reference into this prospectus supplement the information on our website, and you should not consider it to be a part of this prospectus supplement.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we have filed with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We specifically are incorporating by reference the following documents filed with the SEC (excluding those portions of any Current Report on Form 8-K that are furnished and not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024, filed with the SEC on March 31, 2025;
- our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended March 31, 2025, filed with the SEC on May 15, 2025 and our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended June 30, 2024, filed with the SEC on August 13, 2025;
- our Current Reports on Form 8-K filed with the SEC on [March 4, 2025](#), [March 4, 2025](#), [March 26, 2025](#), [April 2, 2025](#), [May 29, 2025](#), [May 30, 2025](#) and [June 3, 2025](#) (other than any portions thereof deemed furnished and not filed);
- our Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on April 17, 2025 (but only with respect to information required by Part III of our Annual Report on Form 10-K for the year ended December 31, 2024, which information updated and superseded information included in Part III of our Annual Report on Form 10-K for the year ended December 31, 2024); and
- the description of our common stock contained in our [Form 10-K](#), filed with the Commission on March 31, 2025, and any amendment or report filed with the Commission for purposes of updating such description.

All reports and definitive proxy or information statements subsequently filed after the date of this initial registration statement and prior to effectiveness of this registration statement by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, but excluding information furnished to, rather than filed with, the SEC, shall be deemed to be incorporated by reference herein and to be a part hereof from the date such documents are filed.

Any statement contained herein or in any document incorporated or deemed to be incorporated by reference shall be deemed to be modified or superseded for purposes of the registration statement of which this prospectus forms a part to the extent that a statement contained in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of the registration statement of which this prospectus forms a part, except as so modified or superseded.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide without charge to each person to whom a copy of this prospectus is delivered, upon written or oral request, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus (other than an exhibit to these filings, unless we have specifically incorporated that exhibit by reference in this prospectus). Any such request should be addressed to us at:

Spectral AI, Inc.  
Attn: Vincent S. Capone, Esq.  
Chief Financial Officer & General Counsel  
2515 McKinney Ave, Suite 1000  
Dallas, TX 75201  
972-499-4934

You may also access the documents incorporated by reference in this prospectus through our website at <https://investors.spectral-ai.com/>. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.



**Up to \$50,000,000 of Common Stock**

From time to time, we may offer and sell, in one or more offerings, in amounts, at prices and on terms that we will determine at the time of such offering, up to \$50,000,000 in shares of our common stock, par value \$0.0001 (“common stock”). A portion of the proceeds may be used to repay a promissory note issued by our wholly-owned subsidiary, Spectral IP, Inc., to SIM Tech Licensing LLC on March 18, 2024, in the principal amount of \$1,000,000 (the “Spectral IP Note”). See “Use of Proceeds” for a description of the Spectral IP Note.

This prospectus describes the general terms of these securities and the general manner in which we will offer the securities. We will provide specific terms of any offering in a supplement to this prospectus. Any prospectus supplement may also add, update, or change information contained in this prospectus.

You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby. You should also read the documents we refer to in the “Where You Can Find More Information” section of this prospectus for information on us and our financial statements.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers, or agents involved in the sale of our securities, their compensation and any over-allotment options held by them will be described in the applicable prospectus supplement. See “Plan of Distribution.”

Our common stock is listed on The Nasdaq Capital Market (the “Nasdaq”) under the symbol “MDAI.” On September 27, 2024, the last reported sale price of our common stock was \$1.21 per share as reported on the Nasdaq. We recommend that you obtain current market quotations for our common stock prior to making an investment decision. We will provide information in any applicable prospectus supplement regarding any listing of securities other than shares of our common stock on any securities exchange. This prospectus may not be used to sell our securities unless it is accompanied by a prospectus supplement.

We are an “emerging growth company” and a “smaller reporting company” under applicable federal securities laws and will be subject to reduced reporting requirements. This prospectus complies with the requirements that apply to an issuer that is an emerging growth company.

**As of October 15, 2024, the aggregate market value of our outstanding common stock held by non-affiliates, or the public float, was approximately \$13,059,556, which was calculated based on 10,364,727 shares of our outstanding common stock held by non-affiliates and a price of \$1.26 per share, the last reported sale price for our common stock on October 15, 2024. As of the date of this prospectus, we have not offered or sold any securities pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to, and including, the date of this prospectus. Pursuant to General Instruction I.B.6. of Form S-3, in no event will we offer securities registered on this registration statement in a public primary offering with a value exceeding more than one-third of our public float (the market value of our common stock held by our non-affiliates) in any 12-month period so long as our public float remains below \$75.0 million.**

**You should carefully read this prospectus, any prospectus supplement relating to any specific offering of securities, and all information incorporated by reference herein and therein.**

**Investing in our securities involves a high degree of risk. These risks are discussed in this prospectus under “Risk Factors” beginning on page 4 and in the documents incorporated by reference in this prospectus.**

**Neither the Securities and Exchange Commission (the “SEC”) nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

The date of this prospectus is \_\_\_\_\_, 2024

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC using a “shelf” registration process. Under this shelf process, we may, from time to time, offer and sell up to \$50,000,000 in shares of our common stock as described in this prospectus in one or more offerings.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add to, update or change information contained in the prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to the offering.

The prospectus supplement to be attached to the front of this prospectus may describe, as applicable: the terms of the securities offered; the public offering price; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. No person has been authorized to give any information or make any representations in connection with this offering other than those contained or incorporated by reference in this prospectus, any accompanying prospectus supplement and any related issuer free writing prospectus in connection with the offering described herein and therein, and, if given or made, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits.

You should read the entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement or any related issuer free writing prospectus, together with the additional information described under “Where You Can Find More Information,” before making an investment decision. You should also carefully consider, among other things, the matters discussed in the section entitled “Risk Factors” herein. Neither the delivery of this prospectus or any prospectus supplement or any issuer free writing prospectus nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement or issuer free writing prospectus is correct as of any date subsequent to the date hereof or of such prospectus supplement or issuer free writing prospectus, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

**This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. See “Risk Factors” and “Cautionary Statement Regarding Forward Looking Statements” appearing in this prospectus and in the documents we file with the SEC that are incorporated by reference into this prospectus.**

## CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section entitled “Risk Factors.”

The forward-looking statements contained in this prospectus are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, the following risks, uncertainties and other factors:

- We have incurred significant losses since inception and may not be able to achieve significant revenues or profitability.
- We are devoting substantially all of our efforts towards research and development of our DeepView System.
- We depend on government funding, which if lost or reduced, could have a material adverse effect on our research and development activities and our ability to commercialize our DeepView technology. Our largest contract is with the Biomedical Advanced Research and Development Authority (“BARDA”) and is the largest single source of revenue for us. Our BARDA contract is not guaranteed to be completed or extended.
- The regulatory review process is expensive, time-consuming, and uncertain and we may be unable to obtain clearance, approval, De Novo classification, or certification for our DeepView technology.
- We are highly dependent on our senior management, directors and key personnel, and our business could be harmed if we are unable to attract and retain personnel necessary for our success.
- We may experience significant delays in completing clinical trials, which could prevent or significantly delay our targeted product launch timeframe and impair our viability and business plan.
- New legislation and regulations and legislative and regulatory reforms may make it more difficult and costly for us to obtain regulatory clearance, approval, De Novo classification, or certification of our DeepView System, or to manufacture, market and distribute our device after clearance, approval, or classification is obtained.
- Disruptions at the FDA and foreign regulatory agencies caused by funding shortages or global health concerns could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new products and services from being developed or commercialized in a timely manner, which could negatively impact our business.
- The ongoing labor shortage may limit our ability or the investigators’ ability to find and retain medical staff that are needed to conduct the clinical studies.
- Modifications to our DeepView System may require new clearances, approvals, De Novo classifications, certifications, or new or amended certifications, and may require us to cease marketing or to recall the modified device until clearances, approvals, De Novo classifications, or the relevant certifications are obtained.

- Quality problems and product liability claims could lead to recalls or safety alerts, reputational harm, adverse verdicts or costly settlements, and could have a material adverse effect on our business, results of operations, financial condition, and cash flows.
- We must comply with anti-kickback, fraud and abuse, false claims, transparency, and other healthcare laws and regulations.
- If our manufacturers fail to comply with the regulatory quality system regulations or any applicable equivalent regulations, our proposed operations could be interrupted, and our operating results would suffer.
- Actual or perceived failure to comply with data protection, privacy and security laws, regulations, standards and other requirements could negatively affect our business, financial condition or results of operations.
- As the regulatory framework for AI technology evolves, our business, financial condition and results of operation may be adversely affected.
- If we are unable to establish sales, marketing and distribution capabilities either on our own or in collaboration with third parties, we may not be successful in commercializing our DeepView System, if approved.
- We may not be able to achieve or maintain satisfactory pricing and margins for our DeepView technology.
- We will depend upon third-party suppliers, including contract manufacturers and single and sole source suppliers, making us vulnerable to supply shortages and price fluctuations that could negatively affect our business, financial condition and results of operations.
- We may encounter difficulties in managing our growth, which could disrupt our operations.
- The use of artificial intelligence, including machine learning, in our analytics platforms may result in reputational harm or liability.
- Product liability suits, whether or not meritorious, could be brought against us due to an alleged defective product or for the misuse of our DeepView System. These suits could result in expensive and time-consuming litigation, payment of substantial damages, and an increase in our insurance rates.
- The success of our algorithms depends on our significant repository of proprietary data.
- Changes in patent law or its interpretation could diminish the value of patents in general, thereby impairing our ability to protect our existing and future products.

- Our patent rights and other intellectual property may be subject to priority, ownership or inventorship disputes, interferences, and similar proceedings and we may not be able to enforce our intellectual property rights throughout the world.
- Nasdaq may delist our securities from trading on its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.
- We will incur increased costs as a result of operating as a public company, and the Company's management will be required to devote substantial time to new compliance and investor relations initiatives.
- The price of our common stock may be volatile.
- Changes in laws, regulations or rules, or a failure to comply with any laws, regulations or rules, may adversely affect our business, investments and results of operations.
- If we fail to maintain proper and effective internal controls over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.
- Certain existing stockholders purchased, or may purchase, securities in the Company at a price below the current trading price of such securities and may experience a positive rate of return based on the current trading price. Future investors in the Company may not experience a similar rate of return.
- Warrants may become exercisable for common stock, which would increase the number of shares eligible for resale in the public market and result in dilution to our stockholders.

We have included important factors in the cautionary statements included in this prospectus and the documents we incorporate by reference herein and therein, particularly in the "Risk Factors" section of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 and in the "Risk Factors" section of our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2024, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. No forward-looking statement is a guarantee of future performance.

You should read this prospectus, the applicable prospectus supplement, any related free-writing prospectus, and the documents incorporated by reference herein and therein completely and with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect. The forward-looking statements contained or incorporated by reference in this prospectus or any prospectus supplement herein and therein represent our views as of the date of this prospectus and are expressly qualified in their entirety by this cautionary statement. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

## ABOUT SPECTRAL AI, INC.

Unless the context otherwise requires, references to the “Company,” “Spectral,” “we,” “us,” “our” and similar terms refer to Spectral AI, Inc. and its subsidiaries.

### Overview

We are an AI company focused on predictive medical diagnostics. Our DeepView System uses proprietary AI algorithms to distinguish between fully damaged, partially damaged and healthy human tissue characters invisible to the naked eye, at the initial time point of wound presentation. The DeepView System delivers a binary prediction on the wounds capacity to heal or not-heal by a specified time point in the future. Our DeepView System’s output is specifically engineered to assist the physician in making a more accurate, timely and informed decision regarding the treatment of the patient’s wounds. Our focus from 2013 through 2021 was on the burn indication. In 2022, we expanded our focus to include the DFU indication.

Spectral AI is devoting substantially all of its efforts towards research and development of its DeepView<sup>®</sup> Wound Imaging System, currently focused on burn wounds and diabetic foot ulcer (“DFU”) indications, specifically engineered to allow physicians to make a more accurate, timely and informed decision for treatment options. The Company has not generated any product revenue to date. The Company currently generates revenue from contract development and research services by providing such services to governmental agencies, primarily to the Biomedical Advanced Research and Development Authority (“BARDA”) and under a contract with the Medical Technology Enterprise Consortium (“MTEC”).

In September 2023, the Company executed its third contract with BARDA for a multi-year Project BioShield (“PBS”) contract, valued at up to approximately \$150.0 million (the “PBS BARDA Contract”). This multi-year contract includes an initial award of nearly \$54.9 million to support the clinical validation and FDA clearance of DeepView<sup>®</sup> for commercial development and distribution purposes. The Company completed the second contract with BARDA, referred to as BARDA Burn II, which was signed in July 2019 and completed in November 2023. Under this contract, the Company furthered the DeepView System design, developed the AI algorithm, and took steps to obtain FDA approval.

In April 2023, the Company received a \$4.0 million grant from MTEC for a project that is expected to be completed by April 2025 (the “MTEC Agreement”). The MTEC Agreement is for the development of a handheld version of the DeepView System which is to be used to support military battlefield burn evaluation. The project has three phases, beginning with planning, design and testing; followed by development, design modification and buildout of the handheld device; and then the manufacturing of the handheld device. In September 2024, the Company received an additional \$800,000 from MTEC for the further development of the handheld device.

On March 7, 2024, the Company formed a new wholly-owned subsidiary, Spectral IP, Inc., a Delaware corporation (“Spectral IP”), to be utilized to advance artificial intelligence intellectual property with a specific emphasis on healthcare. On March 19, 2024, the Company announced that Spectral IP received a \$1.0 million investment from an affiliate of its largest shareholder for the development of its artificial intelligence intellectual property portfolio. The investment is structured as a note payable with a one-year maturity, an interest rate of 8%, and requiring earlier prepayment if the Company spins off Spectral IP to the Company’s shareholders or if Spectral IP is sold to a third party.

### Corporate Information

Spectral AI, Inc., a Delaware corporation formerly known as Rosecliff Acquisition Corp I (“Rosecliff”) was formed as a blank check company on November 17, 2020. The Company was formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or similar business combination with one or more businesses.

On September 11, 2023, the Company consummated a business combination (the “Business Combination”), pursuant to the business combination agreement dated April 11, 2023 by and among the Company, Ghost Merger Sub I, a Delaware Corporation, Ghost Merger Sub II, a Delaware corporation and Spectral MD Holdings, Ltd., a Delaware corporation incorporated on March 9, 2009 and headquartered in Dallas, Texas (“Legacy Spectral”). Upon closing of the Business Combination (the “Closing”), in sequential order: (a) Ghost Merger Sub I merged with and into the Legacy Spectral, with Legacy Spectral continuing as the surviving company as a wholly owned subsidiary of the Company (the “Spectral Merger”) and then, (b) Legacy Spectral merged with and into Ghost Merger Sub II (renamed Spectral MD Holdings LLC) (the “SPAC Merger”, together with the Spectral Merger (the “Business Combination”)), with Ghost Merger Sub II surviving the SPAC Merger as a direct wholly-owned subsidiary of the Company. See Note 3. Upon the Closing, the Company changed its name from Rosecliff to Spectral AI, Inc.

In conjunction with the Business Combination, the Company cancelled the redeemable warrants that it issued to Rosecliff Acquisition Sponsor I LLC, a Delaware limited liability company (the “Sponsor”), in a private placement in connection with the Company’s initial public offering on February 17, 2021 (the “Initial Public Offering”) at Closing, but the 8,433,333 redeemable warrants issued to the public in the Initial Public Offering (the “Public Warrants”) remain outstanding.

Prior to the Business Combination, Rosecliff had 280,485 shares of Class A common stock, par value \$0.0001 per share, issued and outstanding and held by public shareholders (the “Public Shares”) and 6,325,000 shares of Class B common stock, par value \$0.0001 per share, issued and outstanding and held by the Sponsor (the “Sponsor Shares”). Upon the Closing, 5,445,000 of the Sponsor Shares were forfeited, in accordance with a letter agreement with the Sponsor, and the remaining 880,000 Sponsor Shares and 280,485 Public Shares, no longer designated Class A and Class B, were included in shares of the Company’s common stock, par value \$0.0001 per share (the “Company Common Stock”).

Prior to the Business Combination, Legacy Spectral’s shares of common stock, par value \$0.001 per share (“Legacy Spectral Common Stock”) were listed on the AIM market on the London Stock Exchange (delisted on September 7, 2023). In September 2023, prior to the Closing, Legacy Spectral issued 7,679,198 shares of Legacy Spectral Common Stock to certain investors in a private placement, in exchange for \$3.4 million (the “Equity Raise”). Upon the Closing, all of Legacy Spectral’s issued and outstanding 145,380,871 shares of Legacy Spectral Common Stock, including the shares from the Equity Raise, were exchanged for 14,094,450 shares of Company Common Stock at an exchange ratio of 10.31 (the “Exchange Ratio”), meaning that the Company issued one share of Company Common Stock in exchange for 10.31 shares of Legacy Spectral Common Stock.

On September 12, 2023, the Company began trading the Company Common Stock and the Public Warrants on the Nasdaq under the symbols “MDAI” and “MDAIW”, respectively. Prior to the Business Combination, the Company’s shares of Company Common Stock and Public Warrants were listed on the Nasdaq under the symbols “RCLF” and “RCLFW”, respectively.

### **Implications of Being an Emerging Growth Company and Smaller Reporting Company**

We are an emerging growth company, as defined in the JOBS Act. The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act for the adoption of certain accounting standards until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply more promptly with new or revised accounting pronouncements as of public company effective dates.

In addition, as an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to present only two years of audited consolidated financial statements in addition to any required unaudited interim consolidated financial statements, with correspondingly reduced disclosure in the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this prospectus;

- an exception from compliance with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended;
- reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements and registration statements;
- exemptions from the requirements of holding non-binding advisory votes on executive compensation or golden parachute arrangements; and

We may take advantage of these provisions until the last day of the fiscal year ending after the fifth anniversary of the Company's initial public offering or such earlier time that we no longer qualify as an emerging growth company. We will cease to qualify as an emerging growth company on the date that is the earliest of: (i) December 31, 2026; (ii) the last day of the fiscal year in which we have more than \$1.235 billion in total annual gross revenues; (iii) the date on which we are deemed to be a "large accelerated filer" under the rules of the SEC, which means the market value of our common stock that is held by non-affiliates exceeds \$700.0 million as of the prior June 30th and we have been a public company for at least 12 months and have filed one annual report on Form 10-K; or (iv) the date on which we have issued more than \$1.0 billion of non-convertible debt over the prior three-year period. We may choose to take advantage of some but not all of these reduced reporting burdens. Accordingly, the information contained herein may be different than you might obtain from other public companies in which you hold equity interests.

We are also a "smaller reporting company." If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited consolidated financial statements in our Annual Report and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

### **Recent Developments**

In September 2024, we received a letter with a draft Particulars of a Complaint from Stifel Nicolaus Europe Limited ("Stifel") in which Stifel contends that the Company owes Stifel approximately \$2,550,000 pursuant to a previous engagement letter entered into with Stifel on November 15, 2021 (the "Engagement Letter"). Stifel alleges that the Engagement Letter entitles them to a percentage of the value of the Company's Business Combination with Rosecliff. The Company further believes that it has substantial factual, legal and contractual defenses to the claims presented and will vigorously contest the claims, if ultimately brought. The Company also believes it has meritorious claims it is entitled to assert against Stifel and one or more of its representatives. However, the results of litigation are inherently unpredictable and the possibility exists that the ultimate resolution of this matter could result in a material effect on our financial position, results of operations or liquidity.

## RISK FACTORS

Investing in our securities involves a high degree of risk. In addition to the other information contained in this prospectus and in the documents we incorporate by reference, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Item 1A, “Risk Factors,” in our most recent Annual Report on Form 10-K or any updates in our Quarterly Reports on Form 10-Q, together with all other information appearing in or incorporated by reference into this prospectus or the applicable prospectus supplement, before deciding whether to purchase any securities being offered. The risks and uncertainties discussed in the foregoing are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks occur, our business, business prospects, financial condition or results of operations could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section above entitled “Cautionary Statement Regarding Forward-Looking Statements.”

## USE OF PROCEEDS

Unless otherwise indicated to the contrary in an accompanying prospectus supplement or post-effective amendment, we will use the net proceeds from the sale of the securities covered by this prospectus for general corporate purposes, which may include, among other things, purchase of miners, repayment or refinancing of debt or funding acquisitions, capital expenditures or working capital.

Any specific allocation of the net proceeds of an offering of securities to a specific purpose will be determined at the time of such offering and will be described in the related prospectus supplement.

We cannot assure you that we will receive any proceeds in connection with securities which may be offered pursuant to this prospectus. Unless otherwise indicated in the applicable prospectus supplement, we will use the net proceeds from the sale of the securities covered by this prospectus to repay the Spectral IP Note or for general corporate purposes, which may include working capital, including research and development, expansion of our business, strategic transactions and other general corporate purposes. We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds, if any, we receive in connection with securities offered pursuant to this prospectus for any purpose. Pending application of the net proceeds as described above, we may initially invest the net proceeds in investment-grade, interest-bearing securities such as money market funds, certificates of deposit, or direct or guaranteed obligations of the U.S. government, hold as cash or apply them to the reduction of short-term indebtedness.

A portion of the proceeds may be used to satisfy the Spectral IP Note in the principal amount of \$1,000,000. The Spectral IP Note currently bears interest at a rate equal to eight percent (8%) per annum and shall be due and payable in full on the earliest of March 18, 2025, or a Liquidation Event (as defined in the Spectral IP Note). The Spectral IP Note allows prepayment at any time without premium or penalty.

## DESCRIPTION OF CAPITAL STOCK

The following description sets forth certain material terms and provisions of our securities that we may offer under this prospectus but is not complete. This description also summarizes relevant provisions of Delaware General Corporation Law (the “DGCL”). The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of the DGCL, our Charter and our Bylaws, copies of which are incorporated by reference as an exhibit to our Annual Report on Form 10-K. In addition, you should be aware that the summary below does not give full effect to the terms of the provisions of statutory or common law, and we encourage you to read our Charter, our Bylaws, and the applicable provisions of Delaware law for additional information.

The Charter authorizes the issuance of 81,000,000 shares of capital stock of the Company, consisting of (i) 80,000,000 shares of common stock, and (ii) 1,000,000 shares of preferred stock, par value \$0.0001 per share (the “preferred stock”). As of September 27, 2024, there were 18,513,073 shares of our common stock issued and outstanding and no shares of preferred stock issued and outstanding. The authorized and unissued shares of common stock and the authorized and undesignated shares of preferred stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. Unless approval of our stockholders is so required, our board of directors does not intend to seek stockholder approval for the issuance and sale of our common stock or preferred stock.

### **Common Stock**

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and have no cumulative voting rights. Holders of our common stock are entitled to receive ratably dividends as may be declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend or other rights of any then outstanding preferred stock. We have never paid cash dividends on our common stock and do not anticipate paying any cash dividends in the foreseeable future but intend to retain our capital resources for reinvestment in our business. Any future disposition of dividends will be at the discretion of our board of directors and will depend upon, among other things, our future earnings, operating and financial condition, capital requirements, and other factors.

Holders of our common stock do not have preemptive or conversion rights or other subscription rights. On the liquidation, dissolution, distribution of assets or winding up of the Company, each holder of common stock will be entitled, pro rata on a per share basis, to all assets of the Company of whatever kind available for distribution to the holders of common stock, subject to the designations, preferences, limitations, restrictions and relative rights of any preferred stock then outstanding. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Holders of common stock are entitled to cast one vote per share of common stock on all matters to be voted on by stockholders. Holders of common stock will vote together as a single class, and an action will be approved by stockholders if the number of votes cast in favor of the action exceeds the number of votes cast in opposition to the action, while directors will be elected by a plurality of the votes cast. Holders of common stock are not entitled to cumulate their votes in the election of directors. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting will be decided by a majority vote of the holders of shares of capital stock present or represented at the meeting and voting affirmatively or negatively on such matter. At all meetings of stockholders for the election of directors at which a quorum is present, a plurality of the votes cast will be sufficient to elect such directors.

### **Anti-Takeover Effects of Certain Provisions of the DGCL, our Charter and Bylaws**

Section 203 of the DGCL affords us certain protections, such as prohibiting us from engaging in any business combination with any stockholder for a period of three years following the time that such stockholder (the “interested stockholder”) came to own at least 15% of our outstanding voting stock (the “acquisition”), except if:

- our board of directors approved the acquisition prior to its consummation;

- the interested stockholder owned at least 85% of the outstanding voting stock upon consummation of the acquisition; or
- the business combination is approved by our board of directors, and by a two-thirds vote of the other stockholders in a meeting.

Generally, a “business combination” includes any merger, consolidation, asset or stock sale, or certain other transactions resulting in a financial benefit to the interested stockholder. Subject to certain exceptions, an “interested stockholder” is a person who, together with that person’s affiliates and associates, owns, or within the previous three years owned, 15% or more of our voting stock.

Under certain circumstances, these anti-takeover provisions will make it more difficult for a person who would be an “interested stockholder” to effect various business combinations with us for a three-year period. This may encourage companies interested in acquiring us to negotiate in advance with our board of directors because the stockholder approval requirement would be avoided if our board of directors approves the acquisition that results in the stockholder becoming an interested stockholder.

This may also have the effect of preventing changes in our board of directors and may make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

#### **Exclusive Forum**

The Charter provides that, unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (the “Chancery Court”) shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring: (i) any derivative action or proceeding brought on the Company’s behalf; (ii) any action, suit or proceeding asserting a claim of breach of fiduciary duty owed by any current or former director, officer or other employee, agent or stockholder of the Company to the Company or its stockholders; (iii) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders arising pursuant to any provision of the DGCL, the Charter or the Bylaws or (iv) any action, suit or proceeding asserting a claim against the Company, its current or former directors, officers, or employees, agents or stockholders governed by the internal affairs doctrine, and, if such action is filed in a court other than the Chancery Court (a “Foreign Action”) by any stockholder (including any beneficial owner), to the fullest extent permitted by law, such stockholder shall be deemed to have consented to (a) the personal jurisdiction of the Chancery Court in connection with any action brought in any such court; and (b) having service of process made upon such stockholder in any such action by service upon such stockholder’s counsel in the Foreign Action as agent for such stockholder.

The exclusive forum provision set forth above does not apply to, and does not preclude or contract the scope of, either (i) exclusive federal jurisdiction pursuant to Section 27 of the Securities and Exchange Act for claims seeking to enforce any liability or duty created by the Securities and Exchange Act or the rules and regulations thereunder, or any other claim for which the U.S. federal courts have exclusive jurisdiction, or (ii) concurrent jurisdiction under Section 22 of the Securities Act for federal and state courts over all claims seeking to enforce any liability or duty created by the Securities Act or the rules and regulations thereunder.

#### **Potential Effects of Authorized but Unissued Stock**

The Charter provides that certain shares of authorized but unissued common stock and preferred stock will be available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future public offerings, to raise additional capital, or to facilitate acquisitions. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of the Company by means of a proxy contest, tender offer, merger, or otherwise.

### **Limitations of Director Liability and Indemnification of Directors, Officers and Employees**

The DGCL authorizes corporations to limit or eliminate the personal liability of directors or officers of corporations and their stockholders for monetary damages for breaches of directors' or officers' fiduciary duties, subject to certain exceptions. The Charter includes a provision that eliminates the personal liability of directors or officers for monetary damages for any breach of fiduciary duty as a director or officer except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL as the same exists or may hereafter be amended.

The Bylaws provide that the Company must indemnify and hold harmless the directors and officers of the Company to the fullest extent authorized by the DGCL. The Company may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Company, or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, trust enterprise or non-profit entity against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Company would have the power to indemnify him or her against such liability under the provisions of the DGCL.

The limitation of liability, advancement and indemnification provisions in the Charter and Bylaws may discourage stockholders from bringing lawsuits against directors or officers for breach of their fiduciary duties. These provisions also may have the effect of reducing the likelihood of derivative litigation against directors and officers, even though such an action, if successful, might otherwise benefit the Company and its stockholders. In addition, your investment may be adversely affected to the extent the Company pays the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

### **Listing**

Our Common Stock is listed on Nasdaq under the symbol "MDAI".

### **Transfer Agent and Registrar**

The Transfer Agent and Registrar for our common stock is Continental Stock Transfer & Trust Co.

## PLAN OF DISTRIBUTION

We may sell the securities offered pursuant to this prospectus from time to time in one or more transactions, including, without limitation:

- to or through underwriters or initial purchasers;
- through broker-dealers (acting as agent or principal);
- through agents;
- directly by us to one or more purchasers (including our affiliates and stockholders), through a specific bidding or auction process, a rights offering or otherwise;
- through a combination of any such methods of sale; or
- through any other methods described in a prospectus supplement or free writing prospectus.

In addition, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and any accompanying prospectus supplement. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and any accompanying prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and any accompanying prospectus supplement.

The distribution of securities may be effected, from time to time, in one or more transactions, including:

- block transactions (which may involve crosses) and transactions on the Nasdaq or any other organized market where the securities may be traded;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its own account pursuant to a prospectus supplement or free writing prospectus;
- ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers;
- sales “at the market” to or through a market maker or into an existing trading market, on an exchange or otherwise; and
- sales in other ways not involving market makers or established trading markets, including direct sales to purchasers.

The applicable prospectus supplement or free writing prospectus will describe the terms of the offering of the securities, including:

- the name or names of any underwriters, if, and if required, any dealers or agents;
- the terms of the offering;
- the purchase price of the securities and the proceeds we will receive from the sale;
- the delayed delivery arrangements;
- any underwriting discounts and other items constituting underwriters’ compensation;
- any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed or traded.

We may distribute the securities from time to time in one or more transactions at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to such prevailing market prices; or
- negotiated prices.

If underwriters are used in an offering, only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in an offering, we will execute an underwriting agreement with such underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. The securities may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more investment banking firms or others, as designated. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to conditions precedent, and the underwriters will be obligated to purchase all of the offered securities, if any are purchased.

We may grant to the underwriters options to purchase additional securities to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. The terms of any over-allotment option will be set forth in the prospectus supplement for those securities.

If we use a dealer in the sale of the securities being offered pursuant to this prospectus or any prospectus supplement, we will sell the securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. The names of the dealers and the terms of the transaction will be specified in a prospectus supplement.

We may sell the securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, any agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions of these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

In connection with the sale of the securities, underwriters, dealers or agents may receive compensation from us or from purchasers of the securities for whom they act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities, and any institutional investors or others that purchase securities directly for the purpose of resale or distribution, may be deemed to be underwriters, and any discounts or commissions received by them from us and any profit on the resale of the common stock by them may be deemed to be underwriting discounts and commissions under the Securities Act of 1933, as amended.

We may provide agents, underwriters and other purchasers with indemnification against particular civil liabilities, including liabilities under the Securities Act of 1933, as amended, or contribution with respect to payments that the agents, underwriters or other purchasers may make with respect to such liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

To facilitate the public offering of a series of securities, persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the market price of the securities. This may include over-allotments or short sales of the securities, which involves the sale by persons participating in the offering of more securities than have been sold to them by us. In addition, those persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in any such offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. Such transactions, if commenced, may be discontinued at any time. We make no representation or prediction as to the direction or magnitude of any effect that the transactions described above, if implemented, may have on the price of our securities.

Unless otherwise specified in the applicable prospectus supplement, any common stock sold pursuant to a prospectus supplement will be eligible for listing on the Nasdaq, subject to official notice of issuance. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice.

In order to comply with the securities laws of some states, if applicable, the securities offered pursuant to this prospectus will be sold in those states only through registered or licensed brokers or dealers. In addition, in some states securities may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and complied with.

## LEGAL MATTERS

Unless otherwise specified in the applicable prospectus supplement, the validity of the securities offered by this prospectus will be passed upon for us by Reed Smith LLP. If legal matters in connection with offerings made by this prospectus are passed on by counsel for the underwriters, dealers or agents, if any, that counsel will be named in the applicable prospectus supplement.

## EXPERTS

The consolidated financial statements of Spectral AI, Inc. as of December 31, 2023 and 2022 and for each of the years in the two-year period ended December 31, 2023, have been incorporated by reference herein in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

## WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act, and in accordance therewith file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains an internet website at [www.sec.gov](http://www.sec.gov) that contains periodic and current reports, proxy and information statements and other information regarding registrants that are filed electronically with the SEC.

These documents are also available, free of charge, through the Investors section of our website, which is located at <https://investors.spectral-ai.com/>.

We have filed with the SEC a registration statement under the Securities Act of 1933, as amended, relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement for free at [www.sec.gov](http://www.sec.gov). The registration statement and the documents referred to below under “Incorporation of Documents by Reference” are also available on our website, <https://investors.spectral-ai.com/>. The reference to our website in this prospectus is an inactive textual reference only and is not a hyperlink. The contents of our website are not part of this prospectus, and you should not consider the contents of our website in making an investment decision with respect to our securities.

We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

## INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” the information we have filed with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We specifically are incorporating by reference the following documents filed with the SEC (excluding those portions of any Current Report on Form 8-K that are furnished and not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2023, filed with the SEC on March 29, 2024;
- our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended March 31, 2024, filed with the SEC on May 9, 2024, and Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended June 30, 2024, filed with the SEC on August 12, 2024;
- our Current Reports on Form 8-K filed with the SEC on [February 2, 2024](#), [February 5, 2024](#), [February 12, 2024](#), [February 13, 2024](#), [February 22, 2024](#), [March 1, 2024](#), [March 22, 2024](#), [March 29, 2024](#), [April 1, 2024](#), [April 2, 2024](#), [May 16, 2024](#), [June 5, 2024](#), [June 24, 2024](#), [July 15, 2024](#), [August 13, 2024](#) and [October 15, 2024](#) (other than any portions thereof deemed furnished and not filed);
- our Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on April 4, 2024 (but only with respect to information required by Part III of our Annual Report on Form 10-K for the year ended December 31, 2023, which information updated and superseded information included in Part III of our Annual Report on Form 10-K for the year ended December 31, 2023); and
- the description of our common stock contained in our [Form 10-K](#), filed with the Commission on March 29, 2024, and any amendment or report filed with the Commission for purposes of updating such description.

All reports and definitive proxy or information statements subsequently filed after the date of this initial registration statement and prior to effectiveness of this registration statement by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, but excluding information furnished to, rather than filed with, the SEC, shall be deemed to be incorporated by reference herein and to be a part hereof from the date such documents are filed.

Any statement contained herein or in any document incorporated or deemed to be incorporated by reference shall be deemed to be modified or superseded for purposes of the registration statement of which this prospectus forms a part to the extent that a statement contained in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of the registration statement of which this prospectus forms a part, except as so modified or superseded.

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide without charge to each person to whom a copy of this prospectus is delivered, upon written or oral request, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus (other than an exhibit to these filings, unless we have specifically incorporated that exhibit by reference in this prospectus). Any such request should be addressed to us at:

Spectral AI, Inc.  
Attn: Vincent S. Capone, Esq.  
Chief Financial Officer & General Counsel  
2515 McKinney Ave, Suite 1000  
Dallas, TX 75201  
972-499-4934

You may also access the documents incorporated by reference in this prospectus through our website at <https://investors.spectral-ai.com/>. Except for the specific incorporated documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.



3,065,000 Shares of Common Stock

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**PROSPECTUS SUPPLEMENT**

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*Sole Placement Agent*

**Northland Capital Markets**

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