

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-3

REGISTRATION STATEMENT *UNDER THE SECURITIES ACT OF 1933*

SPECTRAL AI, INC.
(Exact name of registrant as specified in its charter)

Delaware

95-4484725

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

2515 McKinney Avenue, Suite 1000
Dallas, TX 75201
972-499-4934

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Vincent S. Capone
Chief Financial Officer and General Counsel
2515 McKinney Avenue, Suite 1000
Dallas, TX 75201
(972) 499-4934

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including communications sent to agent for service, should be sent to:

Herbert F. Kozlov Esq.
Lynwood E. Reinhardt, Esq.
Reed Smith LLP
599 Lexington Avenue
New York, New York 10022-7650
(212) 521-5400

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission acting pursuant to said section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to Completion, dated October 16, 2024

Prospectus



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



TABLE OF CONTENTS

	Page
About This Prospectus	ii
Cautionary Statement Regarding Forward-Looking Statements	iii
About Spectral AI, Inc.	1
Risk Factors	4
Use of Proceeds	5
Description of Capital Stock	6
Plan of Distribution	9
Legal Matters	12
Experts	12
Where You Can Find More Information	13
Incorporation of Documents by Reference	14

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 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[®] 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[®] 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 we have 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 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. 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.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses payable by the registrant expected to be incurred in connection with the issuance and distribution of the securities being registered hereby (other than underwriting discounts and commissions). All of such expenses are estimates, except for the SEC registration fee.

	Amount to be Paid
SEC registration fee	\$ 7,655
Printing fees and expenses	*
Transfer agent and registrar fees	*
Accounting fees and expenses	*
Legal fees and expenses	*
Miscellaneous	*
Total	\$ *

* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers.

Section 102 of the DGCL permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our Charter provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Delaware Court of Chancery or such other court shall deem proper.

Our Charter provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our Charter provides that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements may require us, among other things, to indemnify our directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services at our request.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In any underwriting agreement we enter into in connection with the sale of Common Stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act against certain liabilities.

Item 16. Exhibits.

(a) Exhibits.

Exhibit Number	Description of Document
1.1***	Form of Underwriting Agreement
2.1**	Business Combination Agreement, by and among Rosecliff Acquisition Corp I, Merger Sub I, Merger Sub II and Spectral MD Holdings, Ltd., dated as of April 11, 2023 (incorporated by reference to Annex A of the Registration Statement on Form S-4 (File No. 333-271566)).
3.1**	Second Amended and Restated Certificate of Incorporation of Spectral AI, Inc. (incorporated by reference to the Company's Current Report on Form 8-K, filed with the SEC on September 15, 2023).
3.2**	Amended and Restated Bylaws of Spectral AI, Inc. (incorporated by reference to the Company's Current Report on Form 8-K, filed with the SEC on September 15, 2023).
4.1**	Description of Securities (incorporated by reference to the Registrant's Annual Report on Form 10-K filed on March 31, 2022).
5.1*	Opinion of Reed Smith LLP
23.1*	Consent of KPMG, LLP, independent registered public accounting firm
23.2*	Consent of Reed Smith LLP (included in Exhibit 5.1)
24.1*	Power of Attorney (included in Part II of this Registration Statement)
107*	Filing Fee Table

* Filed herewith.

** Previously filed.

*** To be filed by amendment or as an exhibit to a Current Report on Form 8-K of Spectral AI, Inc.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) (§ 230.424(b) of this chapter) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Filing Fee Tables" or "Calculation of Registration Fee" table, as applicable, in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B (§230.430B of this chapter):

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability of the registrant under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(d) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Dallas, State of Texas, on October 16, 2024.

Spectral AI, Inc.

By: /s/ J. Michael DiMaio

Name: J. Michael DiMaio

Title: Chairman (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Vincent Capone, with full power to act alone and without the others, his true and lawful attorney-in-fact, with full power of substitution, and with the authority to execute in the name of each such person, any and all amendments (including without limitation, post-effective amendments) to this registration statement on Form S-3, to sign any and all additional registration statements relating to the same offering of securities as this registration statement that are filed pursuant to Rule 462(b) of the Securities Act of 1933, and to file such registration statements with the Securities and Exchange Commission, together with any exhibits thereto and other documents therewith, necessary or advisable to enable the registrant to comply with the Securities Act of 1933, and any rules, regulations and requirements of the Securities and Exchange Commission in respect thereof, which amendments may make such other changes in the registration statement as the aforesaid attorney-in-fact executing the same deems appropriate.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ J. Michael DiMaio</u> J. Michael DiMaio	Chairman (Principal Executive Officer)	October 16, 2024
<u>/s/ Vincent S. Capone</u> Vincent S. Capone	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	October 16, 2024
<u>/s/ Richard Cotton</u> Richard Cotton	Director	October 16, 2024
<u>/s/ Martin Mellish</u> Martin Mellish	Director	October 16, 2024
<u>/s/ Deepak Sadagopan</u> Deepak Sadagopan	Director	October 16, 2024
<u>/s/ Marion Snyder</u> Marion Snyder	Director	October 16, 2024
<u>/s/ Erich Spangenberg</u> Erich Spangenberg	Director	October 16, 2024



Reed Smith LLP
599 Lexington Avenue
New York, NY 10022-7650
+1 212 521 5400
Fax +1 212 521 5450
reedsmith.com

October 16, 2024

Spectral AI, Inc.
2515 McKinney Avenue, Suite 1000
Dallas, Texas 75201

Ladies and Gentlemen:

We have acted as legal counsel to Spectral AI, Inc., a Delaware corporation (the “**Company**”), in connection with the preparation and filing with the Securities and Exchange Commission (the “**Commission**”) of a shelf-registration statement on Form S-3 (the “**Registration Statement**”), including a base prospectus included in such Registration Statement (the “**Base Prospectus**”), pursuant to which the Company is registering under the Securities Act of 1933, as amended (the “**Securities Act**”), the offer and sale of up to \$50,000,000 shares of common stock of the Company, par value \$0.0001 per share (the “**Common Stock**”). The Registration Statement relates to the registration of the Common Stock to be offered and sold by the Company from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act. This opinion is being rendered in connection with the filing of the Registration Statement with the Commission. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

This opinion letter is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

We have reviewed originals or copies of (i) the Base Prospectus; (ii) the Registration Statement; (iii) the certificate of incorporation and bylaws of the Company, each as amended through the date hereof (the “**Amended and Restated Certificate of Incorporation**” and the “**Amended and Restated Bylaws**”, respectfully, and together, the “**Organizational Documents**”), and (iv) certain resolutions of the board of directors of the Company. We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, corporate records, certificates of public officials and other instruments as we have deemed necessary or advisable as a basis for the opinion set forth below.

In rendering the opinion set forth below, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all items submitted to us as originals, the conformity with originals of all items submitted to us as copies, and the authenticity of the originals of such copies. As to any facts material to the opinions expressed herein, we have relied upon statements and representations of officers and other representatives of the Company and public officials. We have not independently established the validity of the foregoing assumptions. We have relied as to certain matters on information obtained from public officials, officers of the Company, and other sources believed by us to be responsible. It is understood that this opinion is to be used only in connection with the offer and sale of Common Stock while the Registration Statement is effective under the Securities Act.

For purposes of the opinions set forth below, we have also assumed that:

- i. the Registration Statement and any amendment thereto (including post effective amendments) will have become effective under the Securities Act and will comply with all applicable laws at the time the shares of Common Stock are offered or issued as contemplated by the Registration Statement;
 - ii. if applicable, a prospectus supplement or term sheet (“**Prospectus Supplement**”) will have been prepared and filed with the Commission describing the Common Stock offered thereby and will comply with all applicable laws;
-

- iii. all Common Stock will be offered, issued and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement and, if applicable, the appropriate Prospectus Supplement;
- iv. a definitive purchase, underwriting or similar agreement with respect to any Common Stock offered will have been duly authorized and validly executed and delivered by the Company and the other parties thereto (each, a “Purchase Agreement”);
- v. all Common Stock, and any certificates in respect thereof, will be delivered in accordance with the provisions of the applicable Purchase Agreement approved by the Board upon payment of consideration therefor provided for therein;
- vi. any certificates representing such shares will have been duly executed, countersigned, registered and delivered, or if uncertificated, valid book-entry notations will have been made in the share register of the Company, in each case in accordance with the provisions of the Organizational Documents of the Company; there will be sufficient shares of Common Stock authorized under such Organizational Documents and not otherwise issued or reserved for issuance; and the purchase price therefor payable to the Company will not be less than the par value of such shares;
- vii. the Company will have obtained any legally required consents, approvals, authorizations and other orders of the Commission and any other regulatory authorities necessary to issue and sell the Common Stock being offered and to execute and deliver each of the Purchase Agreements or similar agreements, as applicable; and
- viii. the Common Stock offered, as well as the terms of each of the Purchase Agreements or similar agreements with respect to any Common Stock offered, as they will be executed and delivered, comply with all requirements and restrictions, if any, applicable to the Company, whether imposed by any court or governmental or regulatory body having jurisdiction over the Company.

Based upon the foregoing, we are of the opinion that, when (i) the shares of Common Stock to be offered and sold by the Company have been duly authorized by appropriate corporate or organizational action of the Company, and (ii) such shares of Common Stock have been issued, sold and delivered against payment therefor (which shall be in an amount at least equal to the par value of the shares being issued and sold) in accordance with such authorization, the applicable Purchase Agreement and applicable law, such shares of Common Stock will be validly issued, fully paid and non-assessable.

Our opinions expressed above are subject to the qualifications that we express no opinion as to the applicability of, compliance with, or effect of (i) any bankruptcy, insolvency, reorganization, fraudulent transfer, fraudulent conveyance, moratorium or other similar law affecting the enforcement of creditors’ rights generally, (ii) general principles of equity (regardless of whether enforcement is considered in a proceeding in equity or at law), (iii) other commonly recognized statutory and judicial constraints as to enforceability, including statutes of limitations, and (iv) public policy considerations which may limit the rights of parties to obtain certain remedies.

The foregoing opinion is based on and is limited to the General Corporation Law of the State of Delaware. We express no opinion as to any other laws, statutes, regulations or ordinances, including federal and state securities (or “blue sky”) laws.

The opinions set forth herein are given as of the date hereof, and we undertake no obligation to update or supplement this opinion letter if any applicable law changes after the date hereof or if we become aware of any fact or other circumstances that changes or may change our opinion set forth herein after the date hereof or for any other reason.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Company’s Registration Statement to be filed by the Company with the Commission on the date hereof and to the use of our name under the caption “Legal Matters” in the Prospectus. In giving such consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act, and the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Reed Smith LLP

REED SMITH LLP



KPMG LLP
Suite 1400
2323 Ross Avenue
Dallas, TX 75201-2721

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 29, 2024, with respect to the consolidated financial statements of Spectral AI, Inc., incorporated herein by reference, and to the reference to our firm under the heading "Experts" in the prospectus.

KPMG LLP

Dallas, Texas
October 16, 2024

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Spectral AI, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

<u>Security Type</u>	<u>Security Class Title</u>	<u>Fee Calculation Rule</u>	<u>Amount Registered(1)</u>	<u>Proposed Maximum Offering Price Per Unit</u>	<u>Maximum Aggregate Offering Price</u>	<u>Fee Rate</u>	<u>Amount of Registration Fee</u>
Equity	Common Stock	457(o)	(2)	N/A	\$ 50,000,000	\$ 0.00015310	\$ 7,655
Total Offering Amounts					\$ 50,000,000		\$ 7,655
Total Fee Offsets							—
Net Fee Due							\$ 7,655

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover an indeterminate number of additional securities to be offered or issued from stock splits, stock dividends or similar transactions.
- (2) There are being registered hereunder such indeterminate number of shares of common stock as shall have an aggregate initial offering price not to exceed \$50,000,000.