

PROSPECTUS

BIGBEAR.AI HOLDINGS, INC.

Up to 161,676,020 Shares of Common Stock

This prospectus relates solely to the resale from time to time of up to an aggregate of 161,676,020 shares of our common stock, par value \$0.0001 per share (“*Common Stock*”), by the selling stockholders identified in this prospectus and the selling stockholders to be named in a prospectus supplement (the “*Selling Stockholders*,” which term as used in this prospectus includes assignees).

On December 19, 2024, we entered into privately negotiated exchange agreements (each, an “*Exchange Agreement*”) with certain of the Selling Stockholders, pursuant to which we issued to certain of the Selling Stockholders approximately \$182.3 million principal amount of our new 6.00% Convertible Senior Secured Notes due 2029 (the “*2029 Notes*”) and paid approximately \$0.4 million in cash, with such cash payment representing the accrued and unpaid interest on the Selling Stockholders’ existing 6.00% Convertible Senior Notes due 2026 (the “*2026 Notes*”) in exchange for approximately \$182.3 million principal amount of the 2026 Notes. The shares of Common Stock that may be offered under this prospectus consist of (i) up to 65,711,809 shares of Common Stock that are issuable upon the conversion of the 2029 Notes held by the Selling Stockholders, including shares of Common Stock issuable with respect to make-whole amounts due upon conversion of the 2029 Notes that the Company may elect to settle in shares of Common Stock, and (ii) up to 95,964,211 shares of Common Stock that we may issue from time to time in lieu of cash to pay interest on the 2029 Notes.

We are registering the shares of Common Stock for resale pursuant to the Exchange Agreements. We will not receive any proceeds from the sale of the shares of Common Stock by the Selling Stockholders pursuant to this prospectus. However, any shares of Common Stock issued upon conversion of the 2029 Notes or to pay interest on the 2029 Notes will reduce the amount of cash that we would otherwise have been required to pay to satisfy our obligations under the 2029 Notes. In addition, we will pay certain expenses associated with the registration of the shares of Common Stock covered by this prospectus, as described in the section entitled “*Plan of Distribution*.” The Selling Stockholders will bear all commissions and discounts, if any, attributable to their sales of the shares of Common Stock.

The Selling Stockholders may offer such shares from time to time as it may determine through public or private transactions or through other means described in the section entitled “*Plan of Distribution*” at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. This prospectus does not necessarily mean that the Selling Stockholders will offer or sell the shares. We cannot predict when or in what amounts the Selling Stockholders may sell any of the shares offered by this prospectus.

Because all of the shares offered under this prospectus are being offered by the Selling Stockholders, we cannot currently determine the price or prices at which our shares may be sold under this prospectus.

You should read this prospectus and any prospectus supplement or amendment carefully before you invest in our securities. Our Common Stock is listed on The New York Stock Exchange (“*NYSE*”) under the symbol “*BB.AI*.” On January 24, 2025, the closing sale price of our Common Stock was \$4.13.

We are an “emerging growth company” under applicable federal securities laws and will be subject to reduced public company reporting requirements.

Investing in our securities involves risks. See “[Risk Factors](#)” on page 4, and any applicable prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued under this prospectus or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is January 27, 2025.

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You should rely only on the information contained in this prospectus. No one has been authorized to provide you with information that is different from that contained in this prospectus. We take no responsibility for, and can provide no assurances as to the reliability of, any other information that others may give you. This prospectus is dated as of the date set forth on the cover hereof. You should not assume that the information contained in this prospectus is accurate as of any date other than that date.

For investors outside the United States: We have not done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”), using a “shelf” registration process. Under this shelf registration process, the Selling Stockholders may, from time to time, sell the shares of Common Stock offered by them described in this prospectus. We will not receive any proceeds from the sale by such Selling Stockholders of the Common Stock pursuant to this prospectus.

This prospectus does not include all of the information that is in the registration statement. We omitted certain parts of the registration statement from this prospectus as permitted by the SEC. We refer you to the registration statement and its exhibits for additional information about us and the securities that may be sold under this prospectus.

Neither we nor the Selling Stockholders have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus or any applicable prospectus supplement or any free writing prospectus prepared by or on behalf of us or to which we have referred you. Neither we nor the Selling Stockholders take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. Neither we nor the Selling Stockholders will make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus is accurate as of any date other than the respective dates of such document. Our business, financial condition, results of operations and prospects may have changed since those dates.

We may also provide a prospectus supplement or post-effective amendment to the registration statement to add information to, or update or change information contained in, this prospectus. You should read both this prospectus and any applicable prospectus supplement or post-effective amendment to the registration statement together with the additional information to which we refer you in the section of this prospectus entitled “*Where You Can Find More Information; Incorporation by Reference.*”

Unless otherwise specified, references to the “*Company,*” “*we,*” “*us*” or “*our,*” are to BigBear.ai Holdings, Inc. and its subsidiaries.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements included in this prospectus and the exhibits hereto that are not historical facts are forward-looking statements for purposes of the safe harbor provisions under the United States Private Securities Litigation Reform Act of 1995, to the extent those safe harbor provisions are determined to be available. Forward-looking statements generally are accompanied by words such as “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “should,” “would,” “plan,” “predict,” “potential,” “seem,” “seek,” “future,” “outlook,” and similar expressions that predict or indicate future events or trends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding our industry, future events and other statements that are not historical facts. These forward-looking statements are based on current expectations and beliefs concerning future developments and their potential effects on us and should not be relied upon as representing our assessments as of any date subsequent to the date of this prospectus. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements are also subject to a number of risks and 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, including, but not limited to, risks relating to the following:

- our limited operating history as a combined company, which makes it difficult to evaluate our current business and future prospects;
- changes in domestic and foreign business, market financial, political and legal conditions;
- our ability to sustain our revenue growth in the future;
- our ability to execute our strategy to grow our business and increase our sales and the number and types of markets we compete in;
- the length of our sales cycle and the time and expense associated with it;
- our ability to grow our customer base and to expand our relationships with our existing customers, including with our government customers;
- our reliance on customers in the public/government sector;
- the market and our customers accepting and adopting our products, including our future new product offerings;
- competition in our industry;
- our ability to gain contracts on favorable terms, including with our government customers;
- our ability to successfully compete for and receive task orders and generate revenue under indefinite delivery/indefinite quantity contracts;
- potential delays or changes in the government appropriations or procurement processes, including as a result of events such as war, incidents of terrorism, natural disasters and public health concerns and epidemics, such as the coronavirus outbreak;
- increased or unexpected costs or unanticipated delays caused by other factors outside of our control, such as performance failures of our subcontractors;
- our ability to grow, maintain and enhance our brand and reputation;
- security and our technology, including cybersecurity;
- our ability to maintain competitive pricing for our products;
- our ability to secure financing necessary to operate and grow our business as planned, including through acquisitions;
- the high degree of uncertainty of the level of demand for, and market utilization of, our solutions and products;

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- substantial regulation and the potential for unfavorable changes to, or failure by us to comply with, these regulations, which could substantially harm our business and operating results;
- our dependency upon third-party service providers for certain technologies;
- increases in costs, disruption of supply or shortage of materials, which could harm our business;
- developments and projections relating to our competitors and industry;
- the unavailability, reduction or elimination of government and economic incentives, which could have a material adverse effect on our business, prospects, financial condition and operating results
- our existing debt and our ability to refinance it on more favorable terms;
- our management team's limited experience managing a public company;
- our ability to hire, retain, train and motivate qualified personnel and senior management and ability to deploy our personnel and resources to meet customer demand;
- our ability to successfully execute future joint ventures, channel sales relationships, platform partnerships, strategic alliances and subcontracting opportunities;
- our ability to grow through acquisitions and successfully integrate any such acquisitions;
- our ability to successfully maintain, protect, enforce and grow our intellectual property rights;
- our compliance with governmental laws, trade controls, customs requirements and other regulations we are subject to;
- the possibility of our need to defend ourselves against fines, penalties and injunctions if we are determined to be promoting products for unapproved uses or otherwise found to have violated a law or regulation;
- concentration of ownership among our existing executive officers, directors and their respective affiliates, which may prevent new investors from influencing significant corporate decisions;
- the effect of economic downturns, depressions and recessions;
- our ability to integrate and realize the expected synergies on the recent acquisition of Pangiam Intermediate Holdings, LLC ("*Pangiam*"); and
- our significantly increased expenses and administrative burdens as a public company and any resulting adverse effect on our business, financial condition and results of operations.

Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. We do not undertake any obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

In particular, you should consider the numerous risks described in our Annual Report on Form 10-K for the period ended December 31, 2023, and as described or may be described in any subsequent Annual Report on Form 10-K or any Quarterly Report on Form 10-Q under the heading "*Item 1A. Risk Factors*," which are incorporated by reference into this prospectus, and any other documents we file with the SEC that are deemed incorporated by reference into this prospectus and in the "*Risk Factors*" section in the applicable prospectus supplement. See "*Where You Can Find More Information; Incorporation by Reference*." Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we make.

Before any stockholder invests in our securities, such stockholder should be aware that the occurrence of the events described in this section and elsewhere in this prospectus may adversely affect us.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our web site address is ir.bigbear.ai. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2023, as filed with the SEC on March 15, 2024;
- the information specifically incorporated by reference into the Annual Report on Form 10-K for the year ended December 31, 2023 from the Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on March 26, 2024;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2024, June 30, 2024 and September 30, 2024, as filed with the SEC on [May 10, 2024](#), [August 9, 2024](#) and [November 7, 2024](#), respectively;
- our Current Reports on Form 8-K filed with the SEC on [February 22, 2024](#) (File/Film No. 001-40031 24662532), [February 22, 2024](#) (File/Film No. 001-40031 24665014), [February 27, 2024](#), [February 28, 2024](#), [March 1, 2024](#), [March 5, 2024](#), [March 27, 2024](#), [March 28, 2024](#), [June 3, 2024](#), [October 4, 2024](#), [December 19, 2024](#), [December 30, 2024](#), [January 15, 2025](#) and [January 16, 2025](#) (in each case excluding any information furnished but not filed in such reports);
- the description of our securities contained in our Annual Report on [Form 10-K](#) for the year ended December 31, 2021, as filed with the SEC on March 31, 2022, including any amendment or report filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "*Exchange Act*"), prior to the termination of this offering,

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including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

BigBear.ai Holdings, Inc.
6811 Benjamin Franklin Drive, Suite 200
Columbia, Maryland 21046
(410) 312-0885

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

SUMMARY OF THE PROSPECTUS

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus. The summary may not contain all the information that you should consider before investing in our securities. You should read the entire prospectus carefully, including “Risk Factors” contained in the documents incorporated by reference herein, before making an investment decision.

Company Overview

Our mission is to help deliver clarity for the world’s most complex decisions. We are a leading provider of EdgeAI-powered decision intelligence solutions for national security, supply chain management, and digital identity. Customers and partners rely on our predictive analytics capabilities in highly complex, distributed, mission-based operating environments. We are a technology-led solutions organization, providing both software and services to our customers.

Business Overview

We are a leader in the use of Artificial Intelligence and Machine Learning for decision support. We provide our customers with a competitive advantage in a world driven by data that is growing exponentially in terms of volume, variety and velocity. We believe data—when leveraged effectively—can be a strategic asset for any organization. Through our supply chain & logistics, autonomous systems and cybersecurity solutions, we help our customers make sense of the world in which they operate, understand how known and previously unforeseen forces impact their operations, and determine which decision and course of action will best achieve their objectives.

With all of our solutions, as needed by each customer, we offer specialized consulting services to design, customize, deploy, operate and support our solutions for federal and commercial customers. Due to the breadth and depth of experience and expertise in our team, many of our customers rely on our resources to supplement their technical and operational staff for long-term engagements as well.

With the addition of Pangiam, we accelerate and evolved in three markets: national security, supply chain management, and digital identity. Each of these markets are expected to experience double digit growth in the coming years as they embrace and operationalize advanced technologies like artificial intelligence in highly distributed environments.

Stock Exchange Listing

Our Common Stock is listed on the NYSE under the symbol “BBAI.”

Corporate Information

We are a Delaware corporation. Our principal executive offices are located at BigBear.ai Holdings, Inc., 6811 Benjamin Franklin Drive, Suite 200, Columbia, Maryland 21046, and our telephone number is (410) 312-0885. Our principal website address is <https://bigbear.ai>. Information contained in, or accessible through, our website is not a part of, and is not incorporated by reference into, this prospectus or the registration statement of which it forms a part.

Emerging Growth Company

We are an “emerging growth company,” as defined under the Jumpstart Our Business Startups Act of 2012, as amended (the “*JOBS Act*”). As an emerging growth company, we are eligible to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies. These include, but are not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended (the “*Sarbanes-Oxley Act*”), reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and the requirement to obtain stockholder approval of any golden parachute payments not previously approved.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of an extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards.

We will remain an emerging growth company until the earlier of (i) December 31, 2026 (the last day of the fiscal year following the fifth anniversary of the consummation of our initial public offering), (ii) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.235 billion, (iii) the last day of the fiscal year in which we are deemed to be a “large accelerated filer,” as defined in the Exchange Act and (iv) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the prior three-year period.

THE OFFERING

Issuer	BigBear.ai Holdings, Inc.
Shares of Common Stock offered and sold from time to time by the Selling Stockholders	Up to 161,676,020 shares of Common Stock consisting of (i) up to 65,711,809 shares of Common Stock that are issuable upon the conversion of the 2029 Notes held by the Selling Stockholders, including shares of Common Stock issuable with respect to make-whole amounts due upon conversion of the 2029 Notes that the Company may elect to settle in shares of Common Stock, and (ii) up to 95,964,211 shares of Common Stock that we may issue from time to time in lieu of cash to pay interest on the 2029 Notes.
Use of proceeds	While any shares of Common Stock issued upon conversion of the 2029 Notes or to pay interest on the 2029 Notes will reduce the amount of cash that we would otherwise have been required to pay to satisfy our obligations under the 2029 Notes, we will not receive any proceeds from the sale of shares of Common Stock by the Selling Stockholders. See “ <i>Use of Proceeds.</i> ”
Stock Exchange listing	Our Common Stock is listed on the NYSE under the symbol “ <i>BBAI.</i> ”
Risk factors	Investment in any shares of Common Stock offered by this prospectus and any applicable prospectus supplement involves risks. Before deciding whether to invest in our Common Stock, you should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus. The occurrence of any of these risks might cause you to lose all or part of your investment in our Common Stock. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. 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 actually occurs, our business, financial condition, results of operations or cash flow 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 carefully read the section entitled “Cautionary Note Regarding Forward-Looking Statements” included in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K.

RISK FACTORS

Investment in any shares of Common Stock offered by this prospectus and any applicable prospectus supplement involves risks. Before deciding whether to invest in our Common Stock, you should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus. The occurrence of any of these risks might cause you to lose all or part of your investment in our Common Stock. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. 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 actually occurs, our business, financial condition, results of operations or cash flow 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 carefully read the section entitled "Cautionary Note Regarding Forward-Looking Statements" included in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K.

USE OF PROCEEDS

All of the Common Stock offered by the Selling Stockholders pursuant to this prospectus will be sold by the Selling Stockholders for its own account. While any shares of Common Stock issued upon conversion of the 2029 Notes or to pay interest on the 2029 Notes will reduce the amount of cash that we would otherwise have been required to pay to satisfy our obligations under the 2029 Notes, we will not receive any of the proceeds from these sales.

The Selling Stockholders will pay any underwriting fees, discounts, selling commissions, stock transfer taxes and certain legal expenses incurred by such Selling Stockholders in disposing of its shares of Common Stock, and we will bear all other costs, fees and expenses incurred in effecting the registration of the shares of Common Stock offered by this prospectus, including, without limitation, all registration and filing fees, NYSE listing fees and fees and expenses of our counsel and our independent registered public accountants.

SELLING STOCKHOLDERS

This prospectus relates to the resale by the Selling Stockholders from time to time of up to 161,676,020 shares of Common Stock held by the Selling Stockholders, which shares consist of (i) up to 65,711,809 shares of Common Stock that are issuable upon the conversion of the 2029 Notes held by the Selling Stockholders, including shares of Common Stock issuable with respect to make-whole amounts due upon conversion of the 2029 Notes that the Company may elect to settle in shares of Common Stock, and (ii) up to 95,964,211 shares of Common Stock that we may issue from time to time in lieu of cash to pay interest on the 2029 Notes.

The Selling Stockholders may from time to time offer and sell any or all of the Common Stock set forth below pursuant to this prospectus and any accompanying prospectus supplement. When we refer to the “Selling Stockholders” in this prospectus, we mean the person listed in the table below and the selling stockholders to be named in a prospectus supplement, and the assignees who later come to hold any of the Selling Stockholders’ interest in the Common Stock other than through a public sale.

The following table sets forth, as of the date of this prospectus, the name of certain of the Selling Stockholders, the aggregate number of shares of Common Stock beneficially owned, the aggregate number of shares of Common Stock that certain of the Selling Stockholders may offer pursuant to this prospectus and the number of shares of Common Stock beneficially owned by certain of the Selling Stockholders after the sale of the shares of Common Stock offered by this prospectus. We have based percentage ownership on 251,554,378 shares of Common Stock outstanding as of December 31, 2024.

We have determined beneficial ownership in accordance with the rules of the SEC and the information is not necessarily indicative of beneficial ownership for any other purpose. Unless otherwise indicated below, to our knowledge, the persons and entities named in the table have sole voting and sole investment power with respect to all securities that they beneficially own, subject to community property laws where applicable.

We cannot advise you as to whether the Selling Stockholders will in fact receive or sell any or all of such Common Stock. The number of shares of our Common Stock issuable to the Selling Stockholders may be subject to certain limitations under the indenture governing the 2029 Notes, including for purposes of our compliance with the listing standards of the NYSE and for purposes of a Selling Stockholder limiting their beneficial ownership of our Common Stock to certain specified thresholds. In addition, the Selling Stockholders may sell, transfer or otherwise dispose of, at any time and from time to time, the Common Stock in transactions exempt from the registration requirements of the Securities Act after the date of this prospectus. For purposes of this table, we have assumed that the Selling Stockholders will have sold all of the shares of Common Stock covered by this prospectus upon the completion of the offering.

Selling Stockholder information for each additional Selling Stockholder, if any, will be set forth by prospectus supplement to the extent required prior to the time of any offer or sale of such Selling Stockholder’s shares pursuant to this prospectus. Any prospectus supplement may add, update, substitute, or change the information contained in this prospectus, including the identity of each Selling Stockholder and the number of shares registered on its behalf. A Selling Stockholder may sell or otherwise transfer all, some or none of such shares in this offering. See “*Plan of Distribution.*”

Name of Selling Stockholders	Shares Beneficially Owned Prior to the Offering		Shares Being Offered ⁽²⁾	Shares Beneficially Owned After the Offering	
	Shares ⁽¹⁾	% ⁽¹⁾		Shares ⁽¹⁾⁽²⁾	% ⁽¹⁾⁽²⁾
1992 Master Fund Co – Invest SPC – Series 4 Segregated Portfolio ⁽³⁾	3,088,421	1.21%	3,086,645	1,776	*
Acasta Global Master Fund ⁽⁴⁾	9,884,182	3.78%	9,884,182	—	—
Highbridge Tactical Credit Institutional Fund, Ltd. ⁽⁵⁾	5,745,570	2.23%	5,732,959	12,975	*
Highbridge Tactical Credit Master Fund, L.P. ⁽⁶⁾	33,317,927	11.69%	33,299,592	18,335	*

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Name of Selling Stockholders	Shares Beneficially Owned Prior to the Offering		Shares Being Offered ⁽²⁾	Shares Beneficially Owned After the Offering	
	Shares ⁽¹⁾	% ⁽¹⁾		Shares ⁽¹⁾⁽²⁾	% ⁽¹⁾⁽²⁾
LMR CCSA Master Fund ⁽⁷⁾	4,433,561	1.73%	4,433,561	—	—
LMR Multi-Strategy Master Fund ⁽⁷⁾	4,433,561	1.73%	4,433,561	—	—
Osterweis Growth and Income Fund ⁽⁸⁾	576,363	*	576,363	—	—
Osterweis Strategic Income Fund ⁽⁸⁾	25,138,293	9.09%	25,138,293	—	—

* Less than 1%

- (1) For purposes of this table, we have assumed a conversion rate of 281.4491 shares of Common Stock for each \$1,000 in principal amount of the 2029 Notes; however, this conversion rate is subject to adjustment upon the occurrence of certain specified events as set forth in the indenture governing the 2029 Notes. In addition, we have assumed that all conversions of the 2029 Notes are settled in shares of our Common Stock, and that all future interest payments on the Convertible Secured Notes due 2029 are paid in-kind with shares of our Common Stock at the minimum share price set forth in the indenture governing the 2029 Notes, with the maximum possible make-whole amount due upon conversion of any 2029 Notes settled in shares of our Common Stock. If any of the foregoing assumptions is incorrect, the number of shares of Common Stock issuable upon conversion of the 2029 Notes may decrease. For purposes of this table, we have also displayed numbers without giving effect to any beneficial ownership or other limitations contained in the documents governing the 2026 Notes or the 2029 Notes.
- (2) The Selling Stockholders have not informed us, and we do not know, when or in what amounts the Selling Stockholders may offer or sell pursuant to this prospectus the shares of Common Stock, if any, that they may receive pursuant to conversion of the 2029 Notes, including with respect to make-whole amounts due upon conversion, or as payment of interest on the 2029 Notes. Assumes all such shares of Common Stock are sold by each applicable Selling Stockholder.
- (3) Includes 1,776 shares issuable upon the conversion of 2026 Notes. For purposes of calculating such shares, we have assumed a conversion rate of 94.223 shares of Common Stock for each \$1,000 in principal amount of the 2026 Notes; however, this conversion rate is subject to adjustment upon the occurrence of certain specified events as set forth in the indenture governing the 2026 Notes. The shares are held by 1992 Master Fund Co—Invest SPC—Series 4 Segregated Portfolio (the “1992 Fund”). Highbridge Capital Management, LLC (“HCM”), a Delaware LLC, is the trading manager of the 1992 Fund. Jonathan Segal and Jason Hempel are responsible for the investment and voting decisions made by HCM with respect to these shares held by the 1992 Fund. The 1992 Fund and the foregoing individuals disclaim beneficial ownership over these shares. The business address of HCM is 277 Park Avenue, 23rd Floor, New York, NY 10172, and the address of the 1992 Fund is c/o Maples Corporate Services Limited #309 Uglan House, South Church Street, George Town, Grand Cayman KY1-1104, Cayman Islands.
- (4) Consists of 10,354,778 shares of Common Stock which would be received upon conversion of the 2029 Notes or as payment of interest on the 2029 Notes. The Shares of Common Stock listed above are held directly by Acasta Global Master Fund. Pursuant to an Investment Management Agreement and a Sub-Investment Management Agreement, respectively, Acasta Partners US and Acasta Partners UK have voting and dispositive power over the Shares of Common Stock held by Acasta Global Master Fund. TFG Asset Management US LP is registered to do business as Acasta Partners US and Acasta Partners UK is part of TFG Asset Management UK LLP, which is authorized and regulated by the Financial Conduct Authority of the United Kingdom. Michael J. Humphries is the Chief Investment Officer of Acasta Partners US and Acasta Partners UK with respect to Acasta Global Master Fund. He thereby exercises voting and dispositive power over the Shares of Common Stock by Acasta Global Master Fund. Acasta Partners US and Acasta Partners UK are part of TFG Asset Management L.P., a subsidiary of Tetragon Financial Group Limited. TFG Asset Management US LP, TFG Asset Management UK LLP, TFG Asset Management L.P. and Tetragon Financial Group Limited are ultimately controlled by Reade Griffith and Patrick Dear. Each of the foregoing individuals disclaim beneficial ownership over these shares. The address of Acasta Global Master Fund is c/o Maples Corporate Services Limited, PO Box 309, Uglan House, Grand Cayman, KY1-1104 Cayman Islands.

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- (5) Includes 12,975 shares issuable upon the conversion of 2026 Notes. For purposes of calculating such shares, we have assumed a conversion rate of 94.223 shares of Common Stock for each \$1,000 in principal amount of the 2026 Notes; however, this conversion rate is subject to adjustment upon the occurrence of certain specified events as set forth in the indenture governing the 2026 Notes. The shares are held by Highbridge Tactical Credit Institutional Fund, Ltd. (the "Institutional Fund"). Highbridge Capital Management, LLC ("HCM"), a Delaware LLC, is the trading manager of the Institutional Fund. Jonathan Segal and Jason Hempel are responsible for the investment and voting decisions made by HCM with respect to these shares held by the Institutional Fund. The Institutional Fund and the foregoing individuals disclaim beneficial ownership over these shares. The business address of HCM is 277 Park Avenue, 23rd Floor, New York, NY 10172, and the address of the Institutional Fund is c/o Maples Corporate Services Limited, #309 Uglan House, South Church Street, George Town, Grand Cayman KY1-1104, Cayman Islands.
- (6) Includes 18,335 shares issuable upon the conversion of 2026 Notes. For purposes of calculating such shares, we have assumed a conversion rate of 94.223 shares of Common Stock for each \$1,000 in principal amount of the 2026 Notes; however, this conversion rate is subject to adjustment upon the occurrence of certain specified events as set forth in the indenture governing the 2026 Notes. The shares are held by Highbridge Tactical Credit Master Fund, L.P. (the "Tactical Credit Fund"). Highbridge Capital Management, LLC ("HCM"), a Delaware LLC, is the trading manager of the Tactical Credit Fund. Jonathan Segal and Jason Hempel are responsible for the investment and voting decisions made by HCM with respect to these shares held by the Tactical Credit Fund. The Tactical Credit Fund and the foregoing individuals disclaim beneficial ownership over these shares. The business address of HCM is 277 Park Avenue, 23rd Floor, New York, NY 10172, and the address of the Tactical Credit Fund is c/o Maples Corporate Services Limited, #309 Uglan House, South Church Street, George Town, Grand Cayman KY1-1104, Cayman Islands.
- (7) LMR Partners LLP ("LMR Partners") is the investment manager of LMR CCSA Master Fund Limited and LMR Master Fund Limited (together, the "LMR Securityholders"). Vincent Olekhovitch is a portfolio manager of LMR Partners, and Pearse Griffith, Benjamin Levine, Torsten de Santos and Mark Eberle are directors of the LMR Securityholders, and, accordingly, they have shared voting and dispositive power of the 2029 Notes held by the LMR Securityholders. The address of LMR Partners is 9th Floor, Devonshire House, 1 Mayfair Place, London W1J 8AJ, United Kingdom. The address of the LMR Securityholders is P.O. Box 309, Uglan House, George Town, Grand Cayman KY1-1104, Cayman Islands.
- (8) The 603,804 shares of Common Stock reflected above with respect to The Osterweis Growth are issuable upon the conversion of \$650,000 principal amount of the 2029 Notes (assuming a conversion rate of 281.4491 shares of Common Stock for each \$1,000 in principal amount of the 2029 Notes) and up to 342,105 shares of Common Stock that may be issued by the Company from time to time in lieu of cash to pay interest on the 2029 Notes. The 26,335,153 shares of Common Stock reflected above with respect to The Osterweis Strategic Income Fund are issuable upon the conversion of \$28,350,000 principal amount of the 2029 Notes (assuming a conversion rate of 281.4491 shares of Common Stock for each \$1,000 in principal amount of the 2029 Notes) and up to 14,921,053 shares of Common Stock that may be issued by the Company from time to time in lieu of cash to pay interest on the 2029 Notes. Such 26,938,957 shares are covered by the registration statement of which this prospectus is a part and, based on the relative holdings of The Osterweis Growth and Income Fund and The Osterweis Strategic Income Fund, would be apportioned as follows: 2.2% (603,804 shares) to The Osterweis Strategic Income Fund and 97.8% (26,335,153 shares) to The Osterweis Strategic Investment Fund.

PLAN OF DISTRIBUTION

The Selling Stockholders and any of its transferees, pledgees, assignees and successors-in-interest may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Common Stock covered by this prospectus on the NYSE or any other stock exchange, market or trading facility on which our Common Stock is traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale or at negotiated prices.

The Selling Stockholders may use any one or more of the following methods when disposing of their shares of our Common Stock:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such shares at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- distribution to members, limited partners or stockholders of Selling Stockholders;
- “at the market” or through market makers or into an existing market for the shares;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell shares of Common Stock under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus. Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agents for the purchaser of shares of Common Stock, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with the Financial Industry Regulatory Authority’s (“FINRA”) Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.

The Selling Stockholders may pledge or grant a security interest in some or all of the shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell their shares under this prospectus, or under an amendment to this prospectus under Rule 424(b) or other applicable provision of the Securities Act amending the list of Selling Stockholders to include the pledgee, transferee or other successors in interest as Selling Stockholders under this prospectus. The Selling Stockholders also may transfer their securities in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of the shares of Common Stock or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage

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in short sales of Common Stock in the course of hedging the positions they assume. The Selling Stockholders may also sell their shares of Common Stock short and deliver their shares of Common Stock to close out their short positions, or loan or pledge the shares of Common Stock to broker-dealers that in turn may sell these shares of Common Stock. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares of Common Stock offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the shares of Common Stock may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares of Common Stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholders has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the shares.

To the extent required, our Common Stock to be sold, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter, and any applicable discounts, commissions, concessions or other compensation with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the prospectus that includes this prospectus.

To facilitate an offering of the securities, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the 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 we sold to them. In these circumstances, these persons would cover the over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option. In addition, these 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 dealers participating in the 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. These transactions may be discontinued at any time.

A Selling Stockholder that is an entity may elect to make an in-kind distribution of Common Stock to its members, partners or stockholders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus. To the extent that such members, partners or stockholders are not affiliates of ours, such members, partners or stockholders would thereby receive freely tradable Common Stock pursuant to the distribution through a registration statement.

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares of Common Stock offered by this prospectus. We have agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to use reasonable best efforts to keep the registration statement of which this prospectus forms a part effective until the date on which all of the shares of Common Stock have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The shares of Common Stock offered by this prospectus will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the shares of Common Stock offered by this prospectus 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 is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the shares of Common Stock offered by this prospectus may not simultaneously engage in market making activities with respect to the Common Stock for the applicable restricted period, as defined in Regulation M,

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prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the Common Stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Latham & Watkins LLP, New York, New York.

EXPERTS

The audited financial statements of BigBear.ai Holdings, Inc. incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

The audited historical financial statements of Pangiam Ultimate Holding, LLC included as Exhibit 99.1 in BigBear.AI Holdings, Inc.'s Current Report on Form 8-K dated March 27, 2024 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.