

PROSPECTUS SUPPLEMENT
To Prospectus dated August 18, 2025

Up to 100,000,000 Shares
BigBear.ai Holdings, Inc.
Common Stock

We have entered into an Open Market Sale AgreementSM (the “*Sales Agreement*”) with Jefferies LLC (“*Jefferies*”) relating to the sale of shares of our common stock, par value \$0.0001 per share (“*common stock*”), offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the Sales Agreement, we may offer and sell up to an aggregate of 100,000,000 shares of common stock from time to time through Jefferies, acting as our sales agent.

Our common stock is listed on the New York Stock Exchange (“*NYSE*”) under the symbol “BBAI.” On July 30, 2026, the last sale price of our common stock as reported on the NYSE was \$2.83 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus will be made in sales deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the “*Securities Act*”). Jefferies is not required to sell any specific number or dollar amount of common stock, but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Jefferies and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Jefferies as sales agent will be an amount equal to up to 3.0% of the gross proceeds of any common stock sold under the Sales Agreement. In connection with the sale of the common stock on our behalf, Jefferies will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation to Jefferies will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Jefferies with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended (the “*Exchange Act*”). See the section titled “*Plan of Distribution*” beginning on page S-13 for additional information regarding the compensation to be paid to Jefferies.

An investment in our common stock involves significant risks. These risks are described in the section titled “[Risk Factors](#)” beginning on page S-7 of this prospectus supplement and under similar headings in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.

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

Jefferies

The date of this prospectus supplement is July 31, 2026.

TABLE OF CONTENTS

Prospectus Supplement

	<u>Page</u>
ABOUT THIS PROSPECTUS SUPPLEMENT	S-1
CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS	S-2
PROSPECTUS SUPPLEMENT SUMMARY	S-4
RISK FACTORS	S-7
USE OF PROCEEDS	S-10
DILUTION	S-11
PLAN OF DISTRIBUTION	S-13
LEGAL MATTERS	S-15
EXPERTS	S-15
WHERE YOU CAN FIND MORE INFORMATION	S-15
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	S-16
ABOUT THIS PROSPECTUS	1
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	2
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	3
THE COMPANY	5
RISK FACTORS	6
USE OF PROCEEDS	7
DESCRIPTION OF CAPITAL STOCK	8
DESCRIPTION OF NEW WARRANTS	14
DESCRIPTION OF RIGHTS	17
DESCRIPTION OF UNITS	18
GLOBAL SECURITIES	19
PLAN OF DISTRIBUTION	23
LEGAL MATTERS	25
EXPERTS	25

You should rely only on the information contained or incorporated by reference in this prospectus supplement, the accompanying prospectus or any free writing prospectus that we may provide to you in connection with this offering. We have not, and Jefferies has not, authorized anyone to provide you with different information, and you should not rely on any information not contained in or incorporated by reference into this prospectus supplement, the accompanying prospectus or any free writing prospectus that we may provide you. This prospectus supplement does not constitute an offer to sell or a solicitation of an offer to buy any securities other than our common stock. We are not, and Jefferies is not, offering to sell shares of our common stock or seeking offers to buy shares of our common stock in any jurisdictions where offers and sales are not permitted. The information contained in this prospectus supplement, the accompanying prospectus or any free writing prospectus that we may provide to you is accurate only as of the date of each document regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of shares of our common stock. In case there are any differences or inconsistencies between this prospectus supplement, the accompanying prospectus or any free writing prospectus that we may provide to you and the information incorporated by reference in them, you should rely on the information in the document with the most recent date.

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which contains specific information about the terms on which we are offering and selling our common stock pursuant to this prospectus supplement and important business information about us and also adds to and updates information contained in the accompanying prospectus and the documents incorporated herein and therein by reference. The second part is the accompanying prospectus, which provides more general information, some of which may not apply to the offering being made pursuant to this prospectus supplement. This prospectus supplement and the accompanying prospectus are part of an automatic shelf registration statement on Form S-3 (the “*Registration Statement*”) that we filed with the SEC using a “shelf” registration process.

This prospectus supplement and the accompanying prospectus do not contain all of the information included in the Registration Statement, as permitted by the rules and regulations of the SEC. For further information, we refer you to our Registration Statement, including its exhibits, of which this prospectus supplement and the accompanying prospectus form a part. We are subject to the informational requirements of the Exchange Act, and therefore file reports and other information with the SEC. Statements contained in this prospectus supplement and the accompanying prospectus about the provisions or contents of any agreement or other document are only summaries. If SEC rules require that any agreement or document be filed as an exhibit to the Registration Statement, you should refer to that agreement or document for its complete contents.

You should read both this prospectus supplement and the accompanying prospectus as well as additional information incorporated by reference herein and described in the sections titled “*Where You Can Find Additional Information*” and “*Incorporation of Certain Information by Reference*” before investing in our common stock.

Neither we nor Jefferies have authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, along with the information contained in any free writing prospectuses we have authorized for use in connection with this offering. Neither we nor Jefferies take any responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus supplement and the accompanying prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus supplement and the accompanying prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus, or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since those dates.

If the description of this offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information in this prospectus supplement. Any statement made in this prospectus supplement or in a document incorporated or deemed to be incorporated by reference in this prospectus supplement will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or in any other subsequently filed document that is also incorporated or deemed to be incorporated by reference in this prospectus supplement modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

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

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Certain statements included in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein that are not historical facts contain forward-looking statements within the meaning of the Securities Act, the Exchange Act, and the Private Securities Litigation Reform Act of 1995. All statements contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein other than statements of historical fact, including statements regarding our future operating results and financial position, our business strategy and plans and our objectives for future operations, are forward-looking statements. 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 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 assessment as of any date subsequent to the date of this prospectus supplement. There can be no assurance that future developments affecting us will be those that we have anticipated. Many actual events and circumstances are beyond our control. These forward-looking statements are subject to a number of risks and uncertainties, including those relating to:

- changes in domestic and foreign business, market, financial, political, and legal conditions;
- the uncertainty of projected financial information;
- delays caused by factors outside of our control, including changes in fiscal or contracting policies or decreases in available government funding;
- changes in government programs or applicable requirements or budgetary constraints, including any potential constraints as a result of recent or future federal government layoffs, including automatic reductions as a result of “sequestration” or similar measures and constraints imposed by any lapses in appropriations for the federal government or certain of its departments and agencies, including government shutdowns or the ability of the U.S. federal government to unilaterally cancel a contract with or without cause, and more specifically, the potential impact of the U.S. DOGE Service Temporary Organization on government spending and terminating contracts for convenience;
- implementation of spending limits or changes in budgetary constraints;
- influence by, or competition from, third parties with respect to pending, new, or existing contracts with government customers;
- changes in our ability to successfully compete for and receive task orders and generate revenue under Indefinite Delivery/Indefinite Quantity contracts;
- our ability to realize the benefits of our strategic partnerships;
- risks that the new businesses will not be integrated successfully or that the combined companies will not realize estimated cost savings;
- failure to realize anticipated benefits of the combined operations;
- 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 or epidemics;
- our expectations regarding the use of proceeds from the offering of our common stock under this prospectus supplement; and
- other factors described in our Annual Report on Form 10-K for the period ended December 31, 2025, and as described or may be described in any subsequent Annual Report on Form 10-K or any Quarterly Reports on Form 10-Q under the heading “Item 1A. Risk Factors.”

[Table of Contents](#)

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. In addition, statements that contain “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based on information available to us as of the date of this prospectus supplement. While we believe that this information provides a reasonable basis for these statements, this information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all relevant information. These statements are inherently uncertain, and investors are cautioned not to unduly rely on these statements.

It is not possible to predict or identify all such risks. Accordingly, undue reliance should not be placed upon the 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.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us but does not contain all the information that may be important to you. This prospectus supplement and the accompanying prospectus include specific terms of the offering and information about our business. Before making an investment decision, you should carefully read this entire prospectus supplement and the accompanying prospectus, including the matters set forth in the section titled “Risk Factors,” beginning on page S-7 of this prospectus supplement and under the heading “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 and our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2026 and June 30, 2026, and as described or may be described in any subsequent Annual Report on Form 10-K or Quarterly Report on Form 10-Q under the heading “Item 1A. Risk Factors,” as well as in any other documents we file with the SEC that are deemed incorporated by reference into this prospectus supplement and the accompanying prospectus.

Company Overview

Our mission is to help deliver clarity for the world’s most complex decisions. BigBear.ai is a leading provider of EdgeAI-powered decision intelligence solutions for national security, supply chain management and digital identity. Customers and partners rely on BigBear.ai’s 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.

Stock Exchange Listing

Our common stock is listed on the NYSE under the symbols “BBAI.”

Corporate Information

We are a Delaware corporation. Our principal executive offices are located at BigBear.ai Holdings, Inc., 7950 Jones Branch Drive, 1st Floor North Tower, McLean, Virginia, 22102, 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 supplement and accompanying prospectus.

The Offering

The summary below describes the principal terms of this offering. Certain of the terms and conditions described below are subject to important limitations and exceptions.

Issuer	BigBear.ai Holdings, Inc.
Shares of Common Stock Offered Hereby	Up to an aggregate of 100,000,000 shares of common stock.
Common Stock Outstanding After the Offering	Up to 579,494,493 shares of common stock, assuming sales of 100,000,000 shares of common stock. The actual number of shares issued will vary depending on how many shares of our common stock we choose to sell.
Manner of Offering	“At the market offering” that may be made from time to time through our sales agent, Jefferies. See the section titled “ <i>Plan of Distribution</i> ” on page S-13 of this prospectus supplement.
Use of Proceeds	We intend to use the net proceeds from this offering, if any, for general corporate purposes. Our management will retain broad discretion regarding the allocation and use of the net proceeds from this offering. See the section titled “ <i>Use of Proceeds</i> ” on page S-10 of this prospectus supplement.
NYSE Symbol	“BBAI”
Risk Factors	Any investment in the securities offered hereby is speculative and involves a high degree of risk. You should carefully consider the information set forth in the section titled “ <i>Risk Factors</i> ,” beginning on page S-7 of this prospectus supplement, and “ <i>Item 1A. Risk Factors</i> ” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 and our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2026 and June 30, 2026, and as described or may be described in any subsequent Annual Report on Form 10-K or Quarterly Report on Form 10-Q under the heading “ <i>Item 1A. Risk Factors</i> ” as well as in any other documents we file with the SEC that are deemed incorporated by reference into this prospectus supplement and the accompanying prospectus.
Transfer Agent	Continental Stock Transfer & Trust Company

The number of shares of common stock to be outstanding after this offering as set forth above is based on 479,494,493 shares issued and outstanding as of June 30, 2026, and excludes, as of June 30, 2026:

- 1,535,493 shares of common stock issuable upon vesting and exercise of stock options outstanding as of June 30, 2026 under our 2021 Long-Term Incentive Plan (the “*Plan*”) (of which 1,097,017 shares are vested and exercisable as of June 30, 2026);
- 13,985,327 shares of common stock issuable upon the vesting of restricted stock units outstanding as of June 30, 2026 under the Plan;

[Table of Contents](#)

- 8,924,598 shares of common stock reserved for grants and unsold pursuant to our 2021 Employee Stock Purchase Plan (the *ESPP*);
- 1,664,732 shares of common stock issuable upon conversion of our outstanding convertible notes; and
- 16,095,772 shares of common stock issuable upon exercise of our outstanding warrants, with a weighted average exercise price of \$10.91 per share.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should consider carefully all the information we have included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including the information under the heading “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 and our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2026 and June 30, 2026, as supplemented by any subsequent Annual Report on Form 10-K or Quarterly Report on Form 10-Q and other SEC filings. In addition, you should carefully consider the risk factors described below related to this offering and an investment in our securities. If any of these risks actually occur, our business, financial condition, results of operations and cash flow could be seriously harmed. This could cause the trading price of our securities to decline, resulting in a loss of all or part of your investment.

Risks Related to this Offering

If you purchase shares of common stock in this offering, you will suffer immediate dilution of your investment.

The shares of common stock sold in this offering will be sold from time to time at various prices. However, the public offering price of our common stock may be substantially higher than the net tangible book value per share of our outstanding common stock prior to this offering. Therefore, if you purchase shares of our common stock in this offering, you may pay a price per share that substantially exceeds our net tangible book value per share after giving effect to this offering. If you purchase common stock in this offering, you will incur an immediate and substantial dilution in net tangible book value of \$1.66 per share, based on the public offering price of \$2.83 per share of common stock, which was the last reported sale price of our common stock on the NYSE on July 30, 2026. For a further description of the dilution that you will experience immediately after this offering, see “Dilution.” In addition, in the past, we have issued options and warrants to acquire common stock at prices significantly below the offering price and have granted restricted stock units. To the extent these outstanding options and warrants are ultimately exercised or these restricted stock units vest, you will incur additional dilution.

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section titled “Use of Proceeds,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

It is not possible to predict the actual number of shares of common stock we will issue under the Sales Agreement or the aggregate proceeds resulting from sales made under the Sales Agreement.

Subject to certain limitations in the Sales Agreement and compliance with applicable law, we have the discretion to deliver a placement notice to Jefferies at any time throughout the term of the Sales Agreement. The number of shares and the per share price of the shares that are sold through Jefferies after delivering a placement notice will fluctuate based on a number of factors, including the market price of our common stock during the sales period, any limits we may set with Jefferies in any applicable placement notice and the demand for our common stock. It is not possible at this stage to predict the number of shares of common stock that will be ultimately sold nor is it currently possible to predict the aggregate proceeds to be raised in connection with sales under the Sales Agreement.

The common stock offered hereby will be sold in “at-the-market offerings,” and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and accordingly may experience different levels of dilution and different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices and number of shares sold in this offering. In addition, subject to the final determination by our board of directors (our “Board”) or any restrictions we may place in any applicable placement notice, there is no minimum or maximum sales price for shares to be sold in this offering. Investors may experience a decline in the value of the shares they purchase in this offering as a result of sales made at prices lower than the prices they paid.

The availability of shares for sale or other issuance in the future could reduce the market price of our common stock.

Our Board has the authority, without action or vote of our stockholders, to issue all or any part of our authorized but unissued shares of common stock, or issue additional shares of preferred stock, which are convertible into shares of common stock. In the future, we may issue securities to raise cash for acquisitions, as consideration in acquisitions, to pay down debt, to fund capital expenditures or general corporate expenses, in connection with the exercise of stock options or to satisfy our obligations under our incentive plans. We may also acquire interests in other companies by using a combination of cash, our preferred stock and our common stock or just our common stock. We may also issue securities, including our preferred stock, that are convertible into, exchangeable for, or that represent the right to receive, our common stock. The occurrence of any of these events or any issuance of common stock may dilute your ownership interest in our Company, reduce our earnings per share and have an adverse impact on the price of our common stock.

We may issue preferred stock whose terms could adversely affect the voting power or value of our common stock.

Our governing documents authorize us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designations, preferences, limitations and relative rights, including preferences over our common stock respecting dividends and distributions, as our Board may determine. The terms of one or more classes or series of preferred stock could adversely impact the voting power or value of our common stock. For example, we might grant holders of preferred stock the right to elect some number of our directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we might assign to holders of preferred stock could affect the residual value of our common stock.

The terms of any future preferred equity or debt financing may give holders of any preferred securities or debt securities rights that are senior to the rights of our common stockholders or impose more stringent restrictions on our operations.

If we incur additional debt or raise equity through the issuance of preferred stock, the terms of the debt or the preferred stock issued may give the holders rights, preferences and privileges senior to those of holders of our common stock, particularly in the event of liquidation. The terms of the debt may also impose additional and more stringent restrictions on our operations. If we raise funds through the issuance of additional equity, the ownership percentage of our existing stockholders would be diluted.

There may be future sales or issuances of our common stock, which will dilute the ownership interests of stockholders and may adversely affect the market price of our common stock.

Our Second Amended and Restated Certificate of Incorporation, as amended, currently in effect authorizes us to issue 1,000,000,000 shares of common stock, of which 479,494,493 shares were issued and outstanding as

of June 30, 2026. We may in the future issue additional shares of common stock, including securities that are convertible into or exchangeable for, or that represent the right to receive, common stock or substantially similar securities, which may result in dilution to our stockholders. In addition, our stockholders may be further diluted by future issuances under our equity incentive plans. The market price of our common stock could decline as a result of sales or issuances of a large number of shares of our common stock or similar securities in the market after this offering or the perception that such sales or issuances could occur.

If securities or industry analysts publish negative reports about our business, our share price and trading volume could decline.

The market price for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business, our market and our competitors. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our shares or change their opinion of our shares, our share price would likely decline. If one or more of these analysts cease coverage of our Company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

USE OF PROCEEDS

We may issue and sell up to 100,000,000 shares of our common stock from time to time pursuant to the Sales Agreement. The aggregate sales proceeds will vary depending on the prices at which such sales occur. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares of our common stock under or fully utilize the Sales Agreement as a source of financing.

We intend to use the net proceeds from this offering for working capital and general corporate purposes. We may use a portion of the net proceeds for strategic investments in complementary products or technologies and other activities or partnerships that may accelerate our growth. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds.

We have not determined the amount of net proceeds to be used specifically for such purposes and, as a result, management will retain broad discretion over the allocation of net proceeds. The occurrence of unforeseen events or changed business conditions could result in the application of the net proceeds from this offering in a manner other than as described in this prospectus supplement. Pending those uses, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade investments, certificates of deposit or guaranteed obligations of the U.S. government.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the price you pay in this offering and the net tangible book value per share of common stock after this offering.

As of June 30, 2026, we had a net tangible book value of \$400.9 million, or \$0.84 per share of common stock, based on 479,494,493 shares of common stock outstanding as of such date. Our historical net tangible book value per share represents total tangible assets less total liabilities, divided by the number of shares of common stock outstanding as of June 30, 2026.

After giving effect to the assumed sale by us of 100,000,000 shares of our common stock at an assumed public offering price of \$2.83 per share, which was the last reported sale price of our common stock on the NYSE on July 30, 2026, less commissions and estimated offering expenses payable by us, our as-adjusted net tangible book value as of June 30, 2026 would have been \$675.2 million, or \$1.17 per share of common stock. This represents an immediate increase in net tangible book value of \$0.33 per share to our existing stockholders and an immediate dilution of \$1.66 per share to new investors in this offering.

The following table illustrates this per share dilution. The as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares of common stock sold and other terms of the offering determined at the time the shares of common stock are sold pursuant to this prospectus supplement and accompanying prospectus. The shares of common stock sold in this offering, if any, will be sold from time to time at various prices.

Assumed public offering price per share	\$2.83
Net tangible book value per share as of June 30, 2026	\$0.84
Increase per share attributable to new investors purchasing shares of our common stock in this offering	\$0.33
As adjusted net tangible book value per share after giving effect to this offering	\$1.17
Dilution per share to new investors	\$1.66

The shares of common stock subject to the Sales Agreement are being sold from time to time at various prices. An increase of \$1.00 per share of common stock in the price at which the shares of common stock are sold from the assumed offering price of \$2.83 per share of common stock shown in the table above, assuming all 100,000,000 shares of common stock during the term of the Sales Agreement with Jefferies are sold at that price, would increase our adjusted net tangible book value per share of common stock after the offering to \$1.33 per share of common stock and would increase the dilution in net tangible book value per share of common stock to new investors in this offering to \$2.50 per share of common stock, after deducting commissions and estimated offering expenses payable by us. A decrease of \$1.00 per share of common stock in the price at which the shares of common stock are sold from the assumed offering price of \$2.83 per share of common stock shown in the table above, assuming all 100,000,000 shares of common stock during the term of the Sales Agreement with Jefferies are sold at that price, would decrease our adjusted net tangible book value per share of common stock after the offering to \$1.00 per share of common stock and would decrease the dilution in net tangible book value per share of common stock to new investors in this offering to \$0.83 per share of common stock, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only and may differ based on the actual offering price and the actual number of shares of common stock offered.

[Table of Contents](#)

The outstanding share information in the table above is based on 479,494,493 shares issued and outstanding as of June 30, 2026, and excludes:

- 1,535,493 shares of common stock issuable upon vesting and exercise of stock options outstanding as of June 30, 2026 under our Plan (of which 1,097,017 shares are vested and exercisable as of June 30, 2026);
- 13,985,327 shares of common stock issuable upon the vesting of restricted stock units outstanding as of June 30, 2026 under the Plan;
- 8,924,598 shares of common stock reserved for grants and unsold pursuant to our ESPP;
- 1,664,732 shares of common stock issuable upon conversion of our outstanding convertible notes; and
- 16,095,772 shares of common stock issuable upon exercise of our outstanding warrants, with a weighted average exercise price of \$10.91 per share.

The above illustration of dilution per share to the investors participating in this offering assumes no exercise of outstanding options to purchase our common stock or warrants to purchase shares of our common stock that will be outstanding after this offering. To the extent that outstanding options or warrants are exercised, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of such securities may result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have entered into a sales agreement with Jefferies, under which we may offer and sell up to an aggregate of 100,000,000 shares of common stock from time to time through Jefferies acting as agent. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act.

Each time we wish to issue and sell our shares of common stock under the sales agreement, we will notify Jefferies of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Jefferies, unless Jefferies declines to accept the terms of such notice, Jefferies has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Jefferies under the sales agreement to sell our shares of common stock are subject to a number of conditions that we must meet.

The settlement of sales of shares between us and Jefferies is generally anticipated to occur on the first trading day following the date on which the sale was made. Sales of our shares of common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Jefferies may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Jefferies a commission of up to 3.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In addition, we have agreed to reimburse Jefferies for the fees and disbursements of its counsel, payable upon execution of the sales agreement, in an amount not to exceed \$75,000, in addition to certain ongoing disbursements of its legal counsel. We estimate that the total expenses for the offering, excluding any commissions or expense reimbursement payable to Jefferies under the terms of the sales agreement, will be approximately \$175,000. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Jefferies will provide written confirmation to us before the open on the NYSE on the day following each day on which our shares of common stock are sold under the sales agreement. Each confirmation will include the number of shares sold on that day, the aggregate gross proceeds of such sales and the proceeds to us.

In connection with the sale of our shares of common stock on our behalf, Jefferies may be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments Jefferies may be required to make in respect of such liabilities.

The offering of our shares of common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the sales agreement and (ii) the termination of the sales agreement as permitted therein. We and Jefferies may each terminate the sales agreement at any time upon ten days’ prior notice.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement is filed as an exhibit to a Current Report on Form 8-K filed under the Exchange Act and incorporated by reference in this prospectus supplement.

Jefferies and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future

[Table of Contents](#)

receive customary fees. In the course of its business, Jefferies may actively trade our securities for its own account or for the accounts of customers, and, accordingly, Jefferies may at any time hold long or short positions in such securities.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Jefferies, and Jefferies may distribute the prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

The validity of the issuance of our common stock and certain other legal matters in connection with the issuance of our common stock will be passed upon for us by Latham & Watkins LLP, New York, New York. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, is counsel for Jefferies in connection with this offering.

EXPERTS

The audited financial statements and management's assessment of the effectiveness of internal control over financial reporting incorporated by reference in this prospectus supplement and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information and periodic reporting requirements of the Exchange Act and, in accordance therewith, file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available at the website of the SEC at <http://www.sec.gov>. We also furnish our stockholders with annual reports containing our financial statements audited by an independent registered public accounting firm and quarterly reports containing our unaudited financial information. We maintain a website at www.bigbear.ai. You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after this material is electronically filed with, or furnished to, the SEC. Information contained on, or that is or becomes accessible through, our website does not constitute a part of this prospectus supplement. The reference to our website or web address does not constitute incorporation by reference of the information contained at that site.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus supplement and the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below that we have previously filed with the SEC:

- Our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2025, filed with the SEC on March 2, 2026.
- The information specifically incorporated by reference in our Annual Report on [Form 10-K](#) for the year ended December 31, 2025 from our [Definitive Proxy Statement on Schedule 14A](#) relating to our 2026 annual meeting of stockholders, filed with the SEC on April 28, 2026.
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026 and June 30, 2026, filed with the SEC on [May 5, 2026](#) and July 30, 2026, respectively.
- Our Current Reports on Form 8-K filed with the SEC on each of [January 2, 2026](#), [April 22, 2026](#), and [June 12, 2026](#) (in each case excluding any information furnished but not filed in such reports).
- The description of our common stock contained in our Registration Statement on [Form 8-A](#), filed with the SEC on February 8, 2021, as updated by the description of our common stock contained in [Exhibit 4.4](#) to our Annual Report on Form 10-K for the year ended December 31, 2022, and any subsequent amendment or report filed with the SEC for the purpose of updating the description.

In addition, all future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of the prospectus supplement until all of the shares of common stock offered hereby have been sold or the offering is otherwise terminated (in each case, other than any portions of any such documents that are not deemed “filed” under the Exchange Act in accordance with the Exchange Act and applicable SEC rules) shall be deemed to be incorporated by reference into this prospectus supplement and the accompanying prospectus supplement and will automatically be deemed to modify and supersede any information in this prospectus supplement, the accompanying prospectus and any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein or therein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Sean Ricker
Chief Financial Officer
BigBear.ai Holdings, Inc.
7950 Jones Branch Drive, 1st Floor North Tower
McLean, Virginia 22102
(410) 312-0885

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

PROSPECTUS

BIGBEAR.AI HOLDINGS, INC.

Common Stock
Preferred Stock
Warrants
Purchase Contracts
Units

We may offer and sell the securities identified above, from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled “About this Prospectus” and “Plan of Distribution” for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE “[RISK FACTORS](#)” ON PAGE 6 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the New York Stock Exchange under the symbol “BBAI.” On August 15, 2025, the last reported sale price of our common stock on the New York Stock Exchange was \$6.14 per share.

Neither the Securities and Exchange Commission 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 August 18, 2025

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	2
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	3
THE COMPANY	5
RISK FACTORS	6
USE OF PROCEEDS	7
DESCRIPTION OF CAPITAL STOCK	8
DESCRIPTION OF NEW WARRANTS	14
DESCRIPTION OF RIGHTS	17
DESCRIPTION OF UNITS	18
GLOBAL SECURITIES	19
PLAN OF DISTRIBUTION	23
LEGAL MATTERS	25
EXPERTS	25

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission (the “SEC”) as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended (the “Securities Act”), using a “shelf” registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings as described in this prospectus. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading “Where You Can Find More Information; Incorporation by Reference.”

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to “BBAI,” “we,” “our,” “us” and the “Company” in this prospectus, we mean BigBear.ai Holdings, Inc. and its subsidiaries, unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable series of securities.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements included in this prospectus and the exhibits contain forward-looking statements within the meaning of the Securities Act, the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Private Securities Litigation Reform Act of 1995. All statements contained in this prospectus and the exhibits other than statements of historical fact, including statements regarding our future operating results and financial position, our business strategy and plans and our objectives for future operations, are forward-looking statements. 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 and the respective exhibits. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements are subject to a number of risks and uncertainties, including those relating to:

- changes in domestic and foreign business, market financial, political, and legal conditions;
- the uncertainty of projected financial information;
- delays caused by factors outside of our control, including changes in fiscal or contracting policies or decreases in available government funding;
- changes in government programs or applicable requirements or budgetary constraints, including any potential constraints as a result of recent or future federal government layoffs, including automatic reductions as a result of “sequestration” or similar measures and constraints imposed by any lapses in appropriations for the federal government or certain of its departments and agencies, including government shutdowns or the ability of the U.S. federal government to unilaterally cancel a contract with or without cause, and more specifically, the potential impact of the U.S. DOGE Service Temporary Organization on government spending and terminating contracts for convenience;
- implementation of spending limits or changes in budgetary constraints;
- influence by, or competition from, third parties with respect to pending, new, or existing contracts with government customers;
- changes in our ability to successfully compete for and receive task orders and generate revenue under Indefinite Delivery/Indefinite Quantity contracts;
- our ability to realize the benefits of our strategic partnerships;
- risks that the new businesses will not be integrated successfully or that the combined companies will not realize estimated cost savings;
- failure to realize anticipated benefits of the combined operations;
- 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 or epidemics; and
- other factors described in our Annual Report on Form 10-K for the period ended December 31, 2024, 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.”

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 <https://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, 2025, filed with the SEC on March 25, 2025.
- The information specifically incorporated by reference in our Annual Report on [Form 10-K](#) for the year ended December 31, 2024 from our Definitive Proxy Statement on [Schedule 14A](#) relating to our 2025 annual meeting of stockholders, filed with the SEC on April 29, 2025.
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2025 and June 30, 2025, filed with the SEC on [May 2, 2025](#) and [August 11, 2025](#), respectively.
- Our Current Reports on Form 8-K filed with the SEC on [January 15, 2025](#), [January 16, 2025](#), [February 6, 2025](#), [March 6, 2025](#), [March 18, 2025](#), [March 27, 2025](#), [April 14, 2025](#), [May 1, 2025](#), [May 15, 2025](#), [June 2, 2025](#), [June 2, 2025](#), [June 6, 2025](#), [July 17, 2025](#), and [August 11, 2025](#) (in each case excluding any information furnished but not filed in such reports).
- The description of our common stock contained in our Registration Statement on [Form 8-A](#), filed with the SEC on February 8, 2021, as updated by the description of our common stock contained in [Exhibit 4.4](#) to our Annual Report on Form 10-K for the year ended December 31, 2022, and any subsequent amendment or report filed with the SEC for the purpose of updating the description.

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

[Table of Contents](#)

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.
7950 Jones Branch Drive
McLean, Virginia 22102

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.

THE COMPANY

Our mission is to help deliver clarity for the world’s most complex decisions. BigBear.ai is a leading provider of EdgeAI-powered decision intelligence solutions for national security, supply chain management and digital identity. Customers and partners rely on BigBear.ai’s 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.

We filed our Second Amended and Restated Certificate of Incorporation (the “Certificate of Incorporation”) with the Secretary of State of Delaware on December 7, 2021.

Our principal executive offices are located at BigBear.ai Holdings, Inc., 7950 Jones Branch Drive, McLean, Virginia 22102, and our telephone number is (410) 312-0885.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. Before deciding whether to invest in our securities, 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 the offered securities. 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 securities 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

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following summary of the material terms of the Company's securities is not intended to be a complete summary of the rights and preferences of such securities. The Certificate of Incorporation is attached as an exhibit to this prospectus. We urge you to read the Certificate of Incorporation in its entirety for a complete description of the rights and preferences of the Company's Common Stock and the warrant agreements.

General

The Certificate of Incorporation authorizes the issuance of 500,000,000 shares of Common Stock, par value \$0.0001 per share ("Common Stock"), and 1,000,000 shares of preferred stock, par value \$0.0001 per share. As of June 30, 2025, there were 369,171,608 shares of Common Stock outstanding, held of record by approximately 71 holders of Common Stock, no shares of preferred stock outstanding and 12,325,772 warrants outstanding held of record by approximately 14 holders of warrants. Such numbers do not include DTC participants or beneficial owners holding shares through nominee names.

Common Stock

Common stockholders of record are entitled to one vote for each share held on all matters to be voted on by stockholders. Unless specified in the Certificate of Incorporation, or as required by applicable provisions of the General Corporation Law of the State of Delaware (the "DGCL") or applicable stock exchange rules, the affirmative vote of a majority of our shares of Common Stock that are voted is required to approve any such matter voted on by our stockholders. Our stockholders are entitled to receive ratable dividends when, as and if declared by the board of directors of the Company (the "Board") out of funds legally available therefor.

Our Board is divided into three classes, each of which will generally serve for a term of three years with only one class of directors being elected in each year. There is no cumulative voting with respect to the election of directors, with the result that the holders of more than 50% of the shares eligible to vote for the election of directors can elect all of the directors.

In the event of a liquidation, dissolution or winding up of the Company, our stockholders are entitled to share ratably in all assets remaining available for distribution to them after payment of liabilities and after provision is made for each class of stock, if any, having preference over the Common Stock. Our stockholders have no preemptive or other subscription rights. There are no sinking fund provisions applicable to the Common Stock.

Our stockholders have no conversion, preemptive or other subscription rights. Stockholders of GigCapital4 who sold or converted their stock into their share of the trust account of GigCapital4 still have the right to exercise the warrants that they may hold.

Preferred Stock

There are no shares of preferred stock outstanding. Our Certificate of Incorporation authorizes the issuance of 1,000,000 shares of preferred stock with such designation, rights and preferences as may be determined from time to time by our Board. No shares of preferred stock were issued or registered in connection with the Business Combination. Accordingly, our Board is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting or other rights which could adversely affect the voting power or other rights of the holders of Common Stock. In addition, the preferred stock could be utilized as a method of discouraging, delaying or preventing a change in control of us. Although the Company does not currently intend to issue any shares of preferred stock, the Company cannot assure you that it will not do so in the future.

Existing Warrants

As of June 30, 2025, there were 12,325,772 warrants outstanding, of which 12,251,606 were the warrants included in the units each consisting of one share of Common Stock and one-third of one warrant to purchase one share of Common Stock (the “Public Units”) issued in the initial public offering of GigCapital4, consummated on February 8, 2021 (the “IPO”), each of which is exercisable for one share of Common Stock in accordance with its terms (the “Public Warrants”) and 366,533 were the warrants included in the units issued to GigAcquisitions4, LLC, Nomura Securities International, Inc. and Oppenheimer & Co. Inc. (the “Initial Stockholders”), in a private placement that closed prior to the IPO, each of which is exercisable for one share of Common Stock, in accordance with its terms (the “Private Placement Warrants”). Each warrant entitles the registered holder to purchase one share of Common Stock at a price of \$11.50 per share, subject to adjustment as discussed below, at any time. Only whole warrants are exercisable. The Public Warrants will expire at 5:00 p.m., New York City time, on December 7, 2026, the fifth anniversary of the completion of the business combination (the “Business Combination”) pursuant to the Agreement and Plan of Merger, dated as of June 4, 2021 (as amended on August 6, 2021 and November 29, 2021), by and among GigCapital4, GigCapital4 Merger Sub Corporation, BigBear.ai Holdings, LLC, and BBAI Ultimate Holdings, LLC, or earlier upon redemption.

We have an effective and current prospectus covering the shares of Common Stock issuable upon exercise of the warrants and a current prospectus relating to such shares of Common Stock. Notwithstanding the foregoing, if a prospectus covering the issuance of the shares of Common Stock issuable upon exercise of the Public Warrants is not available, warrant holders may, until such time as there is an effective prospectus and during any period when the Company shall have failed to maintain an effective prospectus, exercise warrants on a cashless basis pursuant to an available exemption from registration under the Securities Act. If an exemption from registration is not available, holders will not be able to exercise their warrants on a cashless basis.

The Private Placement Warrants are identical to the Public Warrants except that such Private Placement Warrants will be exercisable for cash (even if a prospectus covering the issuance of the warrant shares issuable upon exercise of such warrants is not effective) or on a cashless basis, at the holder’s option, and will not be redeemable by us, in each case so long as they are still held by the Initial Stockholders or their affiliates.

Once the warrants become exercisable, we may redeem the outstanding warrants (excluding the Private Placement Warrants):

- in whole and not in part;
- at a price of \$0.01 per warrant;
- upon a minimum of 30 days’ prior written notice of redemption, which we refer to as the 30-day redemption period; and
- if, and only if, the last reported sale price of the Common Stock equals or exceeds \$18.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) for any 20 trading days within a 30-trading day period ending on the third trading day prior to the date on which we send the notice of redemption to the warrant holders.

We will not redeem the warrants unless a prospectus under the Securities Act covering the issuance of the warrant shares underlying the warrants to be so redeemed is then effective and a current prospectus relating to those warrant shares is available throughout the 30-day redemption period, except if the warrants may be exercised on a cashless basis and such cashless exercise is exempt from registration under the Securities Act. If and when the warrants become redeemable by us, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws.

If the foregoing conditions are satisfied and we issue a notice of redemption, each warrant holder may exercise his, her or its warrants prior to the scheduled redemption date. However, the price of the shares of Common Stock may fall below the \$18.00 trigger price (as adjusted) as well as the \$11.50 exercise price (as adjusted) after the redemption notice is issued.

Table of Contents

The redemption criteria for our warrants have been established at a price which is intended to provide warrant holders a reasonable premium to the initial exercise price and provide a sufficient differential between the then-prevailing share price and the exercise price so that if the share price declines as a result of our redemption call, the redemption will not cause the share price to drop below the exercise price of the warrants.

If we call the warrants for redemption as described above, our management will have the option to require all holders that wish to exercise warrants to do so on a “cashless basis.” In making such determination, our management will consider, among other factors, our cash position, the number of warrants that are outstanding and the dilutive effect on our stockholders of issuing the maximum number of warrant shares issuable upon exercise of outstanding warrants. In such event, the holder would pay the exercise price by surrendering the warrants for that number of shares of Common Stock equal to the quotient obtained by dividing (x) the product of the number of shares of Common Stock underlying the warrants to be so exercised, and the difference between the exercise price of the warrants and the fair market value by (y) the fair market value.

A holder of a warrant may notify us in writing in the event it elects to be subject to a requirement that such holder will not have the right to exercise such warrant, to the extent that after giving effect to such exercise, such person (together with such person’s affiliates), to the warrant agent’s actual knowledge, would beneficially own in excess of 9.8% (or such other amount as a holder may specify) of the shares of Common Stock outstanding immediately after giving effect to such exercise.

If the number of outstanding shares of Common Stock is increased by a stock dividend payable in shares of Common Stock, or by a split-up of shares of Common Stock or other similar event, then, on the effective date of such stock dividend, split-up or similar event, the number of shares of Common Stock issuable on exercise of each warrant will be increased in proportion to such increase in the outstanding shares of Common Stock. A rights offering to holders of Common Stock entitling holders to purchase shares of Common Stock at a price less than the fair market value will be deemed a stock dividend of a number of shares of Common Stock equal to the product of (i) the number of shares of Common Stock actually sold in such rights offering (or issuable under any other equity securities sold in such rights offering that are convertible into or exercisable for Common Stock) multiplied by (ii) one (1), minus the quotient of (x) the price per share of Common Stock paid in such rights offering divided by (y) the fair market value of such share. For these purposes (i) if the rights offering is for securities convertible into or exercisable for Common Stock, in determining the price payable for Common Stock, there will be taken into account any consideration received for such rights, as well as any additional amount payable upon exercise or conversion and (ii) fair market value means the volume-weighted average price of Common Stock as reported during the 10-trading-day period ending on the trading day prior to the first date on which the shares of Common Stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive such rights.

In addition, if we, at any time while the warrants are outstanding and unexpired, pays a dividend or makes a distribution in cash, securities or other assets to the holders of Common Stock on account of such shares of Common Stock (or other shares of our capital stock into which the warrants are convertible), other than (a) as described above, (b) certain ordinary cash dividends, (c) to satisfy the redemption rights of the holders of Common Stock in connection with the Business Combination, (d) as a result of the repurchase of shares of Company Stock if the Business Combination is presented to the stockholders of the Company for approval, or (e) in connection with the redemption of our shares of Common Stock included in the units issued in the IPO upon our failure to complete the Business Combination, then the warrant exercise price will be decreased, effective immediately after the effective date of such event, by the amount of cash and/or the fair market value of any securities or other assets paid on each share of Common Stock in respect of such event.

If the number of outstanding shares of Common Stock is decreased by a consolidation, combination, reverse stock split or reclassification of shares of Common Stock or other similar event, then, on the effective date of such consolidation, combination, reverse stock split, reclassification or similar event, the number of shares of Common Stock issuable on exercise of each warrant will be decreased in proportion to such decrease in outstanding shares of Common Stock.

Table of Contents

Whenever the number of shares of Common Stock purchasable upon the exercise of the warrants is adjusted, as described above, the warrant exercise price will be adjusted by multiplying the warrant exercise price immediately prior to such adjustment by a fraction (x) the numerator of which will be the number of shares of Common Stock purchasable upon the exercise of the warrants immediately prior to such adjustment, and (y) the denominator of which will be the number of shares of Common Stock so purchasable immediately thereafter.

In case of any reclassification or reorganization of the outstanding shares of Common Stock (other than those described above or that solely affects the par value of such shares of Common Stock), or in the case of any merger or consolidation of us with or into another corporation (other than a consolidation or merger in which the Company is the continuing corporation and that does not result in any reclassification or reorganization of our outstanding shares of Common Stock), or in the case of any sale or conveyance to another corporation or entity of the assets or other property of us as an entirety or substantially as an entirety in connection with which the Company is dissolved, the holders of the warrants will thereafter have the right to purchase and receive, upon the basis and upon the terms and conditions specified in the warrants and in lieu of the shares of Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented thereby, the kind and amount of shares of stock or other securities or property (including cash) receivable upon such reclassification, reorganization, merger or consolidation, or upon a dissolution following any such sale or transfer, that the holder of the warrants would have received if such holder had exercised their warrants immediately prior to such event. However, if such holders were entitled to exercise a right of election as to the kind or amount of securities, cash or other assets receivable upon such consolidation or merger, then the kind and amount of securities, cash or other assets for which each warrant will become exercisable will be deemed to be the weighted average of the kind and amount received per share by such holders in such consolidation or merger that affirmatively make such election, and if a tender, exchange or redemption offer has been made to and accepted by such holders (other than a tender, exchange or redemption offer made by the Company in connection with redemption rights held by Company stockholders as provided for in the proposed Certificate of Incorporation or as a result of the repurchase of shares of Common Stock by us if the Business Combination is presented to the stockholders of the Company for approval) under circumstances in which, upon completion of such tender or exchange offer, the maker thereof, together with members of any group (within the meaning of Rule 13d-5(b)(1) under the Exchange Act) of which such maker is a part, and together with any affiliate or associate of such maker (within the meaning of Rule 12b-2 under the Exchange Act) and any members of any such group of which any such affiliate or associate is a part, own beneficially (within the meaning of Rule 13d-3 under the Exchange Act) more than 50% of the outstanding shares of Common Stock, the holder of a warrant will be entitled to receive the highest amount of cash, securities or other property to which such holder would actually have been entitled as a stockholder if such warrant holder had exercised the warrant prior to the expiration of such tender or exchange offer, accepted such offer and all of the Common Stock held by such holder had been purchased pursuant to such tender or exchange offer, subject to adjustments (from and after the consummation of such tender or exchange offer) as nearly equivalent as possible to the adjustments provided for in the warrant agreement. Additionally, if less than 70% of the consideration receivable by the holders of Common Stock in such a transaction is payable in the form of Common Stock in the successor entity that is listed for trading on a national securities exchange or is quoted in an established over-the-counter market, or is to be so listed for trading or quoted immediately following such event, and if the registered holder of the warrant properly exercises the warrant within 30 days following public disclosure of such transaction, the warrant exercise price will be reduced as specified in the warrant agreement based on the per share consideration minus the Black-Scholes Warrant Value (as defined in the warrant agreement) of the warrant in order to determine and realize the option value component of the warrant. This formula is to compensate the warrant holder for the loss of the option value portion of the warrant due to the requirement that the warrant holder exercise the warrant within 30 days of the event. The Black-Scholes model is an accepted pricing model for estimating fair market value where no quoted market price for an instrument is available.

The warrants were issued in registered form under a warrant agreement between Continental Stock Transfer & Trust Company, as warrant agent, and us. The warrant agreement provides that the terms of the warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective

provision, but requires the approval by the holders of at least 65% of the then outstanding Public Warrants to make any change that adversely affects the interests of the registered holders of Public Warrants.

Dividends

We have not paid any cash dividends on our Common Stock to date. The payment of cash dividends in the future will be dependent upon our revenues and earnings, if any, capital requirements and general financial condition. The payment of any cash is within the discretion of our Board at such time. In addition, our Board is not currently contemplating and does not anticipate declaring any stock dividends in the foreseeable future. Further, if we incur any indebtedness, our ability to declare dividends may be limited by restrictive covenants we may agree to in connection therewith.

Election of Directors

The Board is divided into three classes, Class I, Class II and Class III, with only one class of directors being elected in each year and each class serving a three-year term, except with respect to the election of directors at the special meeting of the stockholders of GigCapital4 held on December 3, 2021 (the “Special Meeting”), Class I directors were elected to an initial one-year term (and three-year terms subsequently), the Class II directors were elected to an initial two-year term (and three-year terms subsequently) and the Class III directors were elected to an initial three-year term (and three-year terms subsequently). There is no cumulative voting with respect to the election of directors, with the result that the holders of more than 50% of the shares voted for the election of directors can elect all of the directors.

Our Transfer Agent and Warrant Agent

The Transfer Agent for our Common Stock and warrant agent for our warrants is Continental Stock Transfer & Trust Company. We have agreed to indemnify Continental Stock Transfer & Trust Company in its roles as transfer agent and warrant agent, its agents and each of its stockholders, directors, officers and employees against all liabilities, including judgments, costs and reasonable counsel fees that may arise out of acts performed or omitted for its activities in that capacity, except for any liability due to any gross negligence, willful misconduct or bad faith of the indemnified person or entity.

Certain Anti-Takeover Provisions of Delaware Law, the Company’s Certificate of Incorporation and Bylaws

Our Certificate of Incorporation provides that the Board is classified into three classes of directors of approximately equal size. As a result, in most circumstances, a person can gain control of the board only by successfully engaging in a proxy contest at three or more annual meetings. Furthermore, because the Board is classified, directors may be removed only for cause by a majority of our outstanding shares.

In addition, our Certificate of Incorporation does not provide for cumulative voting in the election of directors. Our authorized but unissued Common Stock and preferred stock are available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved Common Stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Special Meeting of Stockholders

Our Certificate of Incorporation provides that special meetings of our stockholders may be called only by the Chairman of the Board or the Board pursuant to a resolution adopted by a majority of the Board. Stockholders of BigBear.ai will not be eligible and have no right to call a special meeting.

Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our Bylaws, dated as of December 7, 2021, as amended on March 27, 2025 (the “Bylaws”), provide that stockholders seeking to bring business before our annual meeting of stockholders, or to nominate candidates for election as directors at our annual meeting of stockholders, must provide timely notice of their intent in writing. To be timely, a stockholder’s notice will need to be received by the Company’s Secretary at our principal executive offices not later than the close of business on the 90th day nor earlier than the open of business on the 120th day prior to the anniversary date of the immediately preceding annual meeting of stockholders. Pursuant to Rule 14a-8 of the Exchange Act, proposals seeking inclusion in our annual proxy statement must comply with the notice periods contained in the annual proxy statement. The Certificate of Incorporation specifies certain requirements as to the form and content of a stockholders’ meeting. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders. Our Bylaws also specify certain requirements as to the form and content of a stockholder’s notice for an annual meeting. Specifically, a stockholder’s notice must include: (i) a brief description of the business desired to be brought before the annual meeting, the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event such business includes a proposal to amend the Bylaws, the language of the proposed amendment) and the reasons for conducting such business at the annual meeting, (ii) the name and record address of such stockholder and the name and address of the beneficial owner, if any, on whose behalf the proposal is made, (iii) the class or series and number of shares of our capital stock that are owned beneficially and of record by such stockholder and by the beneficial owner, if any, on whose behalf the proposal is made, (iv) a description of all arrangements or understandings between such stockholder and the beneficial owner, if any, on whose behalf the proposal is made and any other person or persons (including their names) in connection with the proposal of such business by such stockholder, (v) any material interest of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made in such business and (vi) a representation that such stockholder (or a qualified representative of such stockholder) intends to appear in person or by proxy at the annual meeting to bring such business before the meeting. These notice requirements will be deemed satisfied by a stockholder as to any proposal (other than nominations) if the stockholder has notified the Company of such stockholder’s intention to present such proposal at an annual meeting in compliance with Rule 14a-8 (or any successor thereof) of the Exchange Act, and such stockholder has complied with the requirements of such rule for inclusion of such proposal in a proxy statement prepared by us to solicit proxies for such annual meeting. The foregoing provisions may limit our stockholders’ ability to bring matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders.

Investor Rights Agreement

Pursuant to the Amended and Restated Investor Rights Agreement, dated as of December 6, 2021 (the “Investor Rights Agreement”), certain parties are entitled to customary piggyback rights on registered offerings of equity securities of BigBear and certain other registration rights, including unlimited shelf take-downs and, in the case of Ultimate, together with any of its permitted transferees that have executed a joinder to the Investor Rights Agreement (collectively, the “Partner”), demand registration rights following the expiration of the Lock-Up Period (as defined below). Any underwritten offering of BigBear’s equity securities will be subject to customary cut-back provisions. Pursuant to the Investor Rights Agreement, BigBear has agreed to cooperate and use commercially reasonable efforts to consummate the applicable registered offerings initiated by the parties and will pay the fees and expenses of such offerings (including reasonable and documented fees of one counsel for the parties participating in such offering).

The Investor Rights Agreement replaced and by its terms, at the closing of the Business Combination, terminated the Registration Rights Agreement, dated as of February 8, 2021, by and among GigCapital4, the Initial Stockholders, and Dorothy D. Hayes and Brad Weightman.

DESCRIPTION OF NEW WARRANTS

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which consist of warrants to purchase our Common Stock and/or Preferred Stock. Warrants may be offered independently or together with our Common Stock, Preferred Stock and/or rights offered by any prospectus supplement and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future warrants we may offer under this prospectus, we will describe the particular terms of any warrants that we may offer in more detail in the applicable prospectus supplement. The terms of any warrants we offer under a prospectus supplement may differ from the terms we describe below.

We will issue the warrants directly or under a warrant agreement which we will enter into with a warrant agent to be selected by us. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent, all as set forth in the prospectus supplement relating to the particular issue of offered warrants. We use the term “warrant agreement” to refer to any of these warrant agreements. We use the term “warrant agent” to refer to the warrant agent under any of these warrant agreements. The warrant agent will act solely as an agent of ours in connection with the warrants and will not act as an agent for the holders or beneficial owners of the warrants.

The following summary of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all of the provisions of the warrant agreement applicable to a particular series of warrants. We urge you to read the applicable prospectus supplements related to the warrants that we sell pursuant to this prospectus, as well as the complete warrant agreements that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplements the terms relating to a series of warrants.

If warrants for the purchase of our Common Stock or Preferred Stock are offered, the prospectus supplements will describe the following terms, to the extent applicable:

- the offering price and the aggregate number of warrants offered;
- the total number of shares that can be purchased if a holder of the warrants exercises them and, in the case of warrants for Preferred Stock, the designation, total number and terms of the series of Preferred Stock that can be purchased upon exercise;
- the designation and terms of any series of Preferred Stock with which the warrants are being offered and the number of warrants being offered with each share of Common Stock or Preferred Stock;
- the date on and after which the holder of the warrants can transfer them separately from the related Common Stock or series of Preferred Stock;
- the number of shares of Common Stock or Preferred Stock that can be purchased if a holder exercises the warrant and the price at which such Common Stock or Preferred Stock may be purchased upon exercise, including, if applicable, any provisions for changes to or adjustments in the exercise price and in the securities or other property receivable upon exercise;
- the terms of any rights to redeem or call, or accelerate the expiration of, the warrants;
- the date on which the right to exercise the warrants begins and the date on which that right expires;
- the number of warrants outstanding, if any;
- a discussion of any material U.S. federal income tax considerations applicable to the warrants;

Table of Contents

- the terms, if any, on which we may accelerate the date by which the warrants must be exercised;
- whether the warrants are issued pursuant to a warrant agreement with a warrant agent or issued directly by us; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

Warrants for the purchase of Common Stock or Preferred Stock will be in registered form only.

A holder of warrant certificates may exchange them for new certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase Common Stock or Preferred Stock are exercised, holders of the warrants will not have any rights of holders of the underlying Common Stock or Preferred Stock, including any rights to receive dividends or to exercise any voting rights, except to the extent set forth under “Warrant Adjustments” below.

Exercise of Warrants

Each holder of a warrant is entitled to purchase the number of shares of Common Stock or Preferred Stock, as the case may be, at the exercise price described in the applicable prospectus supplements. After the close of business on the day when the right to exercise terminates (or a later date if we extend the time for exercise), unexercised warrants will become void.

A holder of warrants may exercise them by following the general procedure outlined below:

- delivering to us or to the warrant agent the payment required by the applicable prospectus supplements to purchase the underlying security;
- properly completing and signing the reverse side of the warrant certificate representing the warrants; and
- delivering the warrant certificate representing the warrants to us or to the warrant agent within five business days of receipt of payment of the exercise price.

If the holder complies with the procedures described above, the warrants will be considered to have been exercised when we receive or the warrant agent receives, as applicable, payment of the exercise price, subject to the transfer books for the securities issuable upon exercise of the warrant not being closed on such date. After the holder has completed those procedures and subject to the foregoing, we will, as soon as practicable, issue and deliver to such holder the Common Stock or Preferred Stock that such holder purchased upon exercise. If the holder exercises fewer than all of the warrants represented by a warrant certificate, a new warrant certificate will be issued to such holder for the unexercised amount of warrants. Holders of warrants will be required to pay any tax or governmental charge that may be imposed in connection with transferring the underlying securities in connection with the exercise of the warrants.

Amendments and Supplements to the Warrant Agreements

We may amend or supplement a warrant agreement without the consent of the holders of the applicable warrants to cure ambiguities in the warrant agreement, to cure, correct or supplement a defective provision in the warrant agreement, or to provide for other matters under the warrant agreement that we and the warrant agent deem necessary or desirable, so long as, in each case, such amendments or supplements do not materially adversely affect the interests of the holders of the warrants.

Warrant Adjustments

Unless the applicable prospectus supplements state otherwise, the exercise price of, and the number of securities covered by, a Common Stock Warrant or Preferred Stock warrant will be adjusted proportionately if we subdivide or combine our Common Stock or Preferred Stock, as applicable.

In addition, unless the prospectus supplements state otherwise, if we, without payment therefor:

- issue capital stock or other securities convertible into or exchangeable for Common Stock or Preferred Stock, or any rights to subscribe for, purchase or otherwise acquire any of the foregoing, as a dividend or distribution to holders of our Common Stock or Preferred Stock;
- pay any cash to holders of our Common Stock or Preferred Stock other than a cash dividend paid out of our current or retained earnings or other than in accordance with the terms of the Preferred Stock;
- issue any evidence of our indebtedness or rights to subscribe for or purchase our indebtedness to holders of our Common Stock or Preferred Stock; or
- issue Common Stock or Preferred Stock or additional stock or other securities or property to holders of our Common Stock or Preferred Stock by way of spinoff, split-up, reclassification, combination of shares or similar corporate rearrangement;

then the holders of Common Stock warrants and Preferred Stock warrants, as applicable, will be entitled to receive upon exercise of the warrants, in addition to the securities otherwise receivable upon exercise of the warrants and without paying any additional consideration, the amount of stock and other securities and property such holders would have been entitled to receive had they held the Common Stock or Preferred Stock, as applicable, issuable under the warrants on the dates on which holders of those securities received or became entitled to receive such additional stock and other securities and property.

Except as stated above, the exercise price and number of securities covered by a Common Stock warrant or Preferred Stock warrant, and the amounts of other securities or property to be received, if any, upon exercise of those warrants, will not be adjusted or provided for if we issue those securities or any securities convertible into or exchangeable for those securities, or securities carrying the right to purchase those securities or securities convertible into or exchangeable for those securities.

Holders of Common Stock warrants and Preferred Stock warrants may have additional rights under the following circumstances:

- certain reclassifications, capital reorganizations or changes of the Common Stock or Preferred Stock, as applicable;
- certain share exchanges, mergers, or similar transactions involving us and which result in changes of the Common Stock or Preferred Stock, as applicable; or
- certain sales or dispositions to another entity of all or substantially all of our property and assets.

If one of the above transactions occurs and holders of our Common Stock or Preferred Stock are entitled to receive stock, securities or other property with respect to or in exchange for their securities, the holders of the Common Stock warrants and Preferred Stock warrants then outstanding, as applicable, will be entitled to receive upon exercise of their warrants the kind and amount of shares of stock and other securities or property that they would have received upon the applicable transaction if they had exercised their warrants immediately before the transaction.

DESCRIPTION OF RIGHTS

This summary, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the rights that we may offer under this prospectus, which consist of rights to purchase our Common Stock and or Preferred Stock in one or more series. Rights may be offered independently or together with our Common Stock, Preferred Stock and/or warrants offered by any prospectus supplement and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future rights we may offer pursuant to this prospectus, we will describe the particular terms of any rights that we may offer in more detail in the applicable prospectus supplements. The terms of any rights we offer under a prospectus supplement may differ from the terms we describe below.

The applicable prospectus supplements relating to any rights that we offer will include specific terms of any offering of rights for which this prospectus is being delivered, including the following, to the extent applicable:

- the date for determining the persons entitled to participate in the rights distribution;
- the price, if any, per right;
- the exercise price payable for each share of Common Stock or share of Preferred Stock upon the exercise of the rights;
- the number of rights issued or to be issued to each holder;
- the number and terms of the shares of Common Stock or shares of Preferred Stock that may be purchased per each right;
- the extent to which the rights are transferable;
- any other terms of the rights, including the terms, procedures and limitations relating to the exchange and exercise of the rights;
- the respective dates on which the holder's ability to exercise the rights will commence and will expire;
- the number of rights outstanding, if any;
- a discussion of any material U.S. federal income tax considerations applicable to the rights;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities; and
- if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights.

The description in the applicable prospectus supplements of any rights that we may offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable rights agreement and/or rights certificate, which will be filed with the SEC in connection therewith.

DESCRIPTION OF UNITS

We may issue units comprising one or more of the other securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. The applicable prospectus supplement will describe:

- the designation and terms of the units and of the other securities comprising the units, including whether and under what circumstances those securities may be traded separately;
- the terms of the unit agreement governing the units;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or the securities comprising the units;
- the U.S. federal income tax considerations relevant to the units; and
- whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depository arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC as an exhibit to the registration statement of which this prospectus is a part or a document that is incorporated or deemed to be incorporated by reference in this prospectus each time we issue units, and you should read those documents for provisions that may be important to you.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depository, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depository to its nominee or by the nominee to the depository, or by the depository or its nominee to a successor depository or to a nominee of the successor depository.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a “banking organization” within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code; and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants’ accounts, thereby eliminating the need for physical movement of securities certificates. “Direct participants” in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC’s records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants’ records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC’s records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

Table of Contents

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depositary with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depositary is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depository for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depository is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;
- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an Event of Default has occurred and is continuing with respect to such series of securities,

we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depository directs. It is expected that these directions will be based upon directions received by the depository from its participants with respect to ownership of beneficial interests in the global securities.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositories, which in turn will hold such interests in customers' securities accounts in such depositories' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositories; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depository to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositories.

Table of Contents

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell the offered securities from time to time:

- through underwriters or dealers;
- through agents;
- directly to one or more purchasers; or
- through a combination of any of these methods of sale.

We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation in the applicable prospectus supplement.

Each time that we sell securities covered by this prospectus, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us, if applicable.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold 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.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter 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 and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the New York Stock Exchange, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of 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 involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment

Table of Contents

option, if any. 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.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Latham & Watkins LLP, New York, New York. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

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.

Up to 100,000,000 Shares

BigBear.ai Holdings, Inc.

Common Stock

Prospectus Supplement

Jefferies

Calculation of Filing Fee Tables

S-3

BigBear.ai Holdings, Inc.

Table 1: Newly Registered and Carry Forward Securities

☐ Not Applicable

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to be Paid	1 Equity	Common Stock, par value \$0.0001 per share	457(a)	100,000,000	\$ 2.6825	268,250,000.00	\$ 0.0001381	\$ 37,045.32				
Fees Previously Paid												
Carry Forward Securities												
Carry Forward Securities												
Total Offering Amounts:							\$	\$ 37,045.32				
							268,250,000.00					
Total Fees Previously Paid:								\$ 0.00				
Total Fee Offsets:								\$ 0.00				
Net Fee Due:								\$ 37,045.32				

Offering Note

¹ Estimated solely for the purpose of calculating the registration fee, based on the average of the high and low prices of the common stock on the New York Stock Exchange on July 29, 2026 (such date being within five business days of the date that this registration statement was filed with the Securities and Exchange Commission). This calculation is in accordance with Rule 457(c) of the Securities Act of 1933.

Table 2: Fee Offset Claims and Sources

☒ Not Applicable

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Rules 457(b) and 0-11(a)(2)											
Fee Offset Claims											
Fee Offset Sources											
Rule 457(p)											
Fee Offset Claims											
Fee Offset Sources											

Table 3: Combined Prospectuses

☒ Not Applicable

Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
---------------	----------------------	--	--	-----------	-------------	------------------------

Narrative Disclosure

The maximum aggregate offering price of the securities to which the prospectus relates is \$268,250,000.00. The prospectus is a final prospectus for the related offering.