

PROSPECTUS SUPPLEMENT

(To the Prospectus dated August 21, 2024, the Prospectus Supplement dated April 25, 2025, and the Prospectus Supplement dated November 7, 2025)

BullFrog AI Holdings, Inc.

Up to \$4.3 million

Of Shares of Common Stock

This prospectus supplement (this “Prospectus Supplement No. 3”) amends and supplements certain information in our prospectus, dated August 21, 2024 (the “Base Prospectus”), the prospectus supplement dated April 25, 2025 (“Prospectus Supplement No. 1”), and the prospectus supplement dated November 7, 2025 (“Prospectus Supplement No. 2”, and together with Prospectus Supplement No. 1 and the Base Prospectus, the “ATM Prospectus”), each filed with the U.S. Securities and Exchange Commission as part of our registration statement on Form S-3 (333-281341), relating to the offer and sale of shares of our common stock, \$0.00001 par value per share, from time to time pursuant to the terms of the At-the-Market Sales Agreement, or the Sales Agreement, with BTIG, LLC, or the sales agent. This Prospectus Supplement No. 3 should be read in conjunction with the ATM Prospectus, and is qualified by reference thereto, except to the extent that the information herein amends or supersedes the information contained in the ATM Prospectus. This Prospectus Supplement No. 3 is not complete without, and may only be delivered or utilized in connection with, the ATM Prospectus, and any future amendments or supplements thereto.

Our common stock is listed on the Nasdaq Capital Market under the symbol “BFRG.” On April 1, 2026, the last reported sale price of our common stock was \$1.62 per share. As of April 1, 2026, the aggregate market value of our outstanding common stock held by non-affiliates (the “Public Float”) was approximately \$27.0 million based on 18,447,105 total shares of outstanding common stock, of which approximately 16.0 million shares were held by non-affiliates, and a price of \$1.68 per share, which was the closing price of our common stock on the Nasdaq Capital Market on March 31, 2026, the highest closing sale price of our common stock on the Nasdaq Capital Market within 60 days prior to the date of this Prospectus Supplement No. 3. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities registered in a public primary offering with a value exceeding more than one-third of our Public Float in any 12-calendar month period so long as our public float remains below \$75.0 million. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12-calendar month period that ends on and includes the date of this Prospectus Supplement No. 3, other than our offering of shares of common stock pursuant to the ATM Prospectus, having an aggregate value of approximately \$4.7 million. As of April 1, 2026, one-third of the Public Float was equal to approximately \$9.0 million, leaving approximately \$4.3 million available for issuance under this Prospectus Supplement No. 3.

Sales of our common stock, if any, under this Prospectus Supplement No. 3 will be made in sales deemed to be “at the market offerings” as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, or the Securities Act. The sales agent is not required to sell any specific number of securities but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between the sales agent and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

If our public float increases such that we may sell additional amounts of common stock in excess of the aforementioned aggregate offering price under the Sales Agreement and the registration statement and ATM Prospectus, which this Prospectus Supplement No. 3 amends, we will file another prospectus supplement prior to making such additional sales in excess of the aforementioned aggregate offering price. In the event that our public float increases above \$75.0 million, we will no longer be subject to the limit in General Instruction I.B.6 of Form S-3, and in such event, we will file another prospectus supplement prior to making additional sales above such limit.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus supplement, and information that we file after the date hereof with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except as to any portion of any future report or document that is not deemed filed under such provisions, after the date of this prospectus supplement and prior to the termination of this offering:

- Annual Report on [Form 10-K](#) for the year ended December 31, 2025, filed with the SEC on March 19, 2026;
- Current Reports on Form 8-K filed with the SEC on [February 17, 2026](#), [February 23, 2026](#), [March 30, 2026](#), and [April 1, 2026](#); and
- the description of our Common Stock, which is registered under Section 12 of the Exchange Act, contained in [Exhibit 4.13](#) to our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2025, filed with the SEC on March 19, 2026, including any amendments or reports filed for the purpose of updating such description.

Pursuant to Rule 412 under the Securities Act, any statement contained in a document incorporated or deemed to be incorporated by reference into 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 any other subsequently filed document that is deemed to be incorporated by reference into this prospectus supplement modifies or supersedes the 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.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus supplement is delivered, a copy of the documents incorporated by reference into this prospectus supplement but not delivered with the prospectus supplement. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus supplement, at no cost by writing us at the following address: BullFrog AI Holdings, Inc., 325 Ellington Blvd., Unit 317, Gaithersburg, MD 20878, Attention: Secretary or by telephone by calling (240) 658-6710. Our website is located at www.bullfrogai.com. The reference to our website is intended to be an inactive textual reference and, except for the documents incorporated by reference as noted above, the information on, or accessible through, our website is not intended to be part of this prospectus supplement.

You should rely only on the information incorporated by reference or provided in this prospectus supplement. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus supplement or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus supplement or those documents. Nothing in this prospectus supplement shall be deemed to incorporate information furnished but not filed with the SEC pursuant to Item 2.02 or Item 7.01 of Form 8-K.

We advise that there have been no material changes in our affairs that have occurred since the end of the latest fiscal period for which audited financial statements were included in the latest Form 10-K and that have not been described in a Form 10-Q or Form 8-K filed under the Exchange Act.

This prospectus supplement is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

Our business and an investment in our common stock involve significant risks. These risks are described under the caption *“Risk Factors”* beginning on page S-6 of Prospectus Supplement No. 1 and in the documents incorporated by reference into this prospectus supplement.

Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement. Any representation to the contrary is a criminal offense.

BTIG

The date of this prospectus supplement is April 1, 2026.