



EMERGING TECH RESEARCH

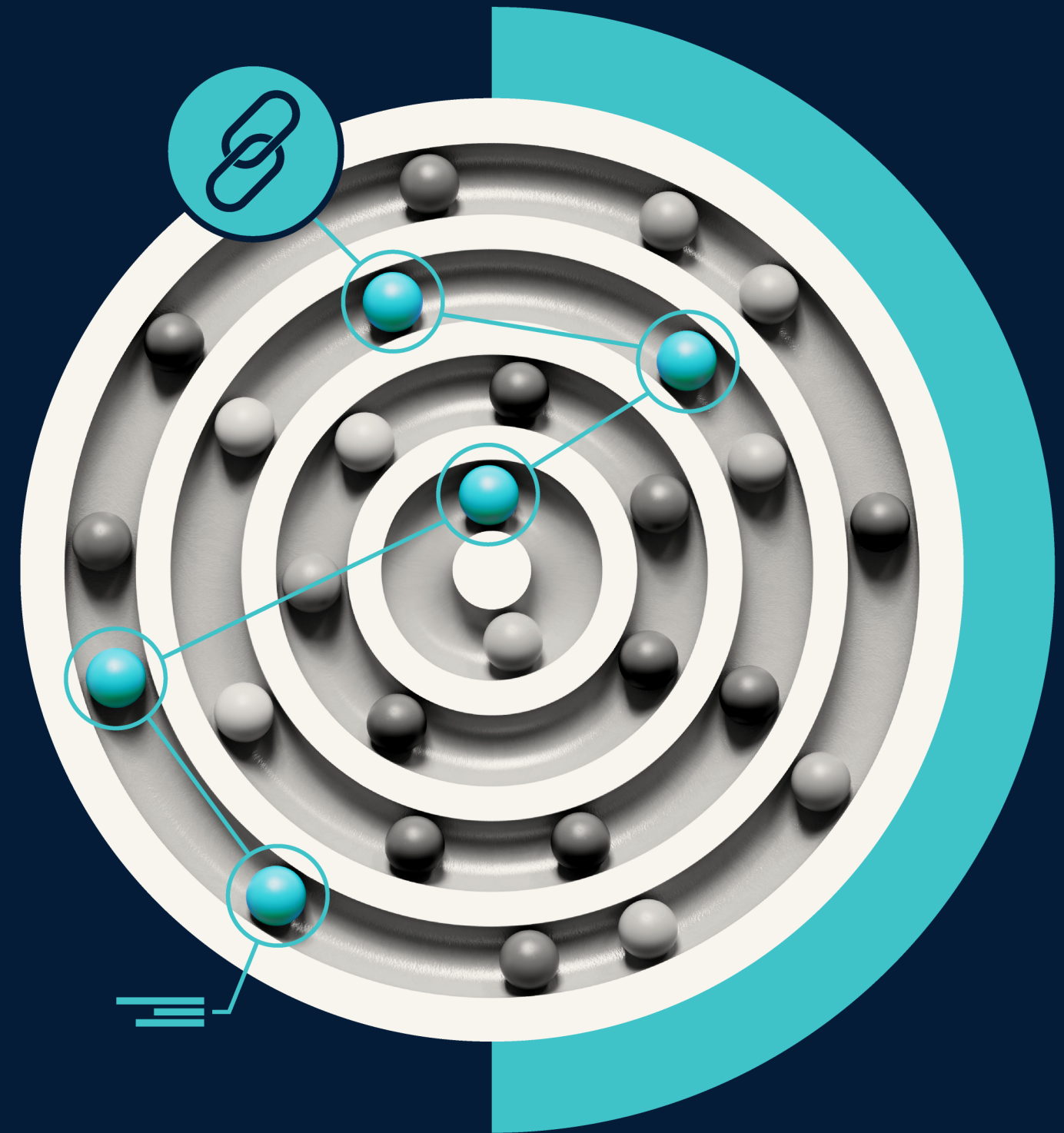
Artificial Intelligence & Machine Learning Report

VC trends and emerging opportunities

Q4
2023

REPORT PREVIEW

The full report is available through
the PitchBook Platform.





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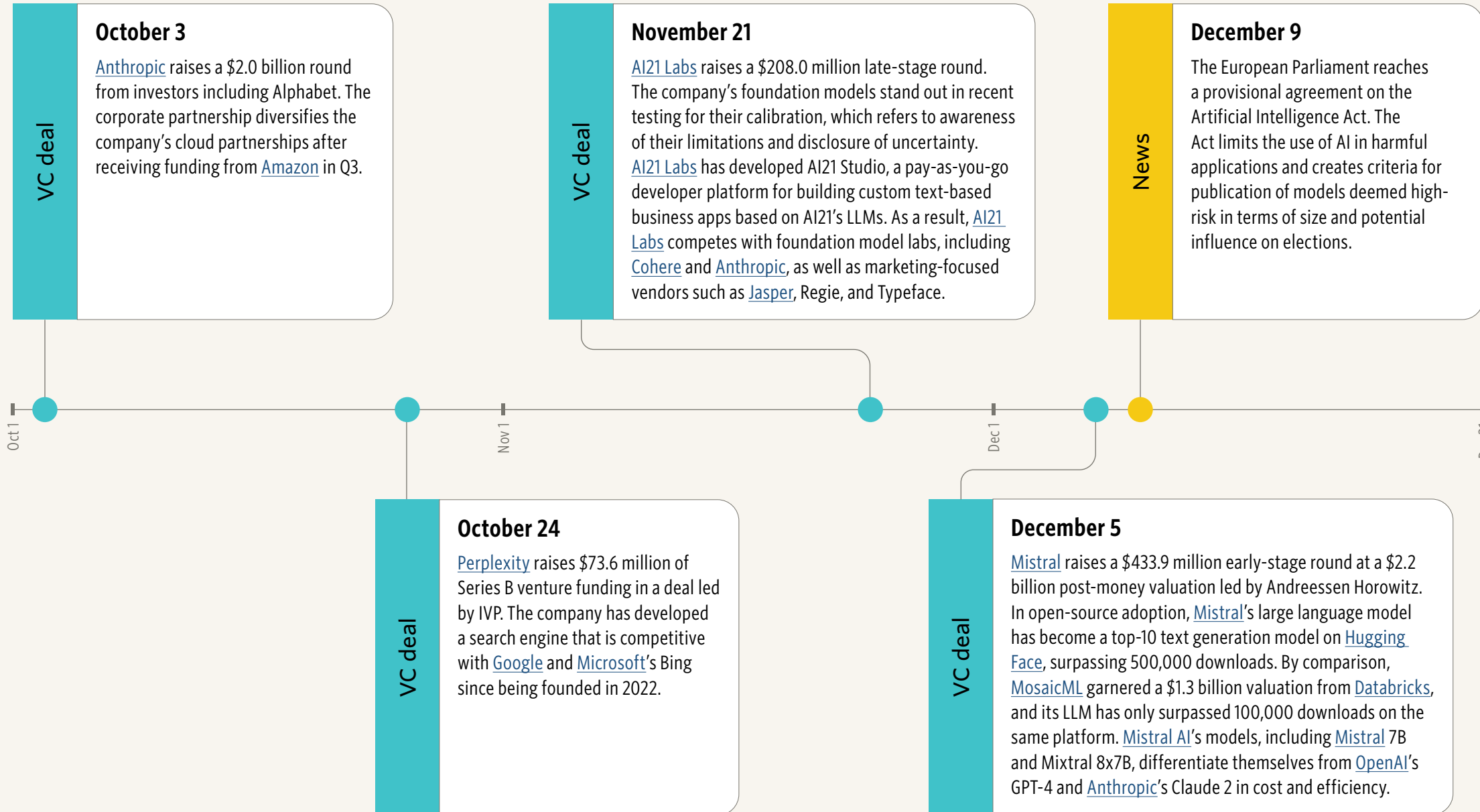
Publishing

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Q4 2023 timeline



Q4 VC deal activity

1,665
total deals

\$22.3B
total VC raised

11.0%
deal value growth QoQ

2023 YTD summary

7,238
total deals

\$90.9B
total VC raised

-4.7%
deal value growth YoY



AI & ML landscape

- 1** Horizontal platforms
- 2** Vertical applications
- 3** Semiconductors
- 4** Autonomous machines





AI & ML VC ecosystem market map

This market map is an overview of venture-backed or growth-stage companies that have received venture capital or other notable private investments.

1 Horizontal platforms

AI automation platforms

AI core

Foundation models

Computer vision

Natural language technology

2 Vertical applications

Consumer

Healthcare

IT

Financial services

Industrial

Transportation

3 Semiconductors

Data center

Intelligent sensors & devices

Edge AI software

Processor design

4 Autonomous machines

Autonomous vehicles

Intelligent robotics

4 Autonomous machines

Autonomous vehicles

Intelligent robotics



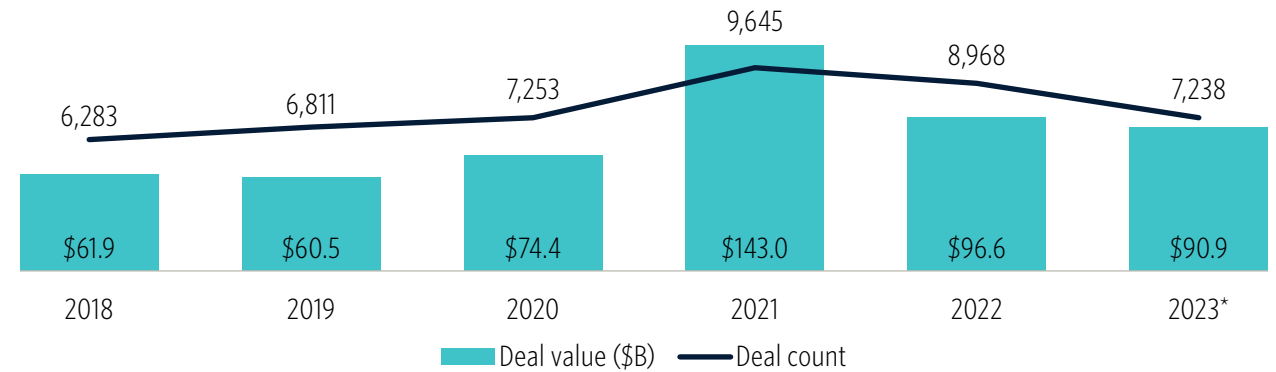


VC activity

VC activity has remained consistent throughout the VC downturn over the past six quarters, leaving aside the tech giant megadeals that commit upfront funds for future cloud purchases. We tracked \$22.3 billion invested in Q4, including an outlier \$2.0 billion deal size for [Anthropic](#), led by Alphabet. Median valuations remain above the market midpoint while equity sold falls lower, demonstrating founder-friendly conditions. Deal count has remained sharply lower than pre-downturn levels, even given generative AI (GenAI) excitement over the past five quarters. These totals would assuredly be much lower without tech giants' involvement in GenAI deals, with GenAI leaders raising \$6.0 billion in Q4 across only 194 deals. The momentum in horizontal platforms led the segment to set a VC record in 2023 with \$33.0 billion raised, even as vertical applications regressed to 2020's level.

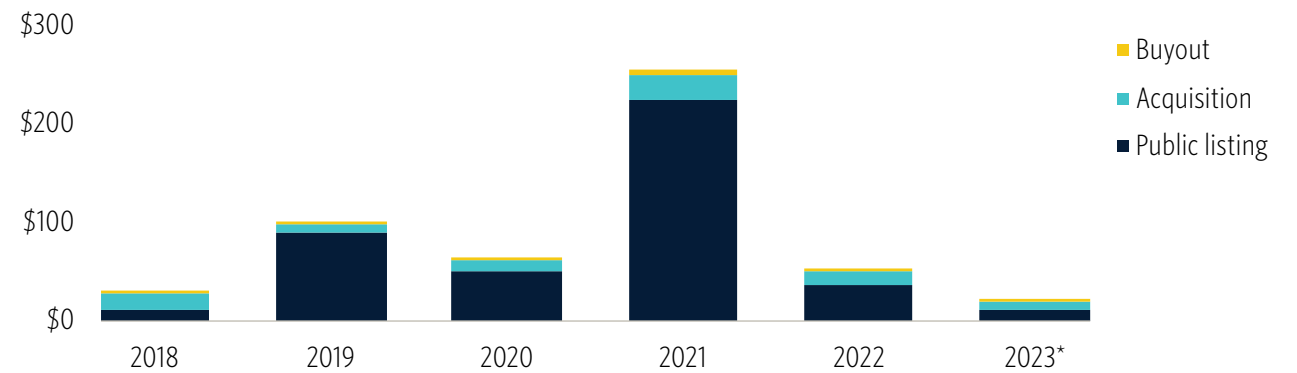
Q3's bump in VC exit M&A did not sustain in Q4, as both deal value and count fell. We only tracked \$2.7 billion in disclosed deal value in Q4, which will likely settle as the lowest quarter since Q1 2019. Tech giants remained dormant in M&A given their focus on partnerships with leading LLM startups. Exceptions included AMD's acquisition of [Nod.AI](#) in machine learning operations (MLOps), [IBM](#)'s acquisition of [Manta](#) in database management, and [ServiceNow](#)'s acquisition of [UltimateSuite](#) in predictive analytics. An upcoming IPO for semiconductor startup [Astera Labs](#) promises to revive deal value in Q1 or Q2 2024. Impressive results for AI companies in public markets should encourage further listings, although our review of the IPO pipeline for this year does not heavily feature AI companies given their ability to stay private.

AI & ML VC deal activity



Source: PitchBook • Geography: Global • *As of December 31, 2023

AI & ML VC exit value (\$B) by type



Source: PitchBook • Geography: Global • *As of December 31, 2023



VC ACTIVITY

Key Q4 AI & ML late-stage VC deals by deal value (\$M)*

Company	Close date (2023)	Subsegment, category	Deal value (\$M)	Lead investor(s)	Valuation step-up (post to pre)
Anthropic	October 27	AI core, foundation models	\$2,000.0	Alphabet	N/A
Metropolis	October 5	Transportation, ADAs	\$1,700.0	3L Capital, Eldridge Industries	N/A
Ramp	December 6	AI in financial services, wealth management	\$339.0	Sands Capital, Thrive Capital	0.7x
Neuralink	November 22	Intelligent sensors & devices	\$323.2	Founders Fund	1.5x
Verkada	October 9	Intelligent sensors & devices	\$305.0	Alkeon Capital Management, Linse Capital	1.9x
Lambda	October 5	Chips, GPU cloud	\$300.0	Mercato Partners	7.4x
AI21 Labs	November 21	AI core, foundation models	\$208.0	Pitango Venture Capital, SCB 10X, Samsung NEXT Ventures, Walden Catalyst, b2venture	2.1x
Lightmatter	December 19	Chips	\$155.0	Aliya Capital Partners, GV, SIP Global Partners, Viking Global Investors	1.6x
Crusoe	December 5	Chips, GPU cloud	\$143.7	N/A	N/A
Pony.ai	October 24	Autonomous vehicles, autonomous vehicle software	\$100.0	NEOM Investment Fund	1.0x

Source: PitchBook • Geography: Global • *As of December 31, 2023



VC ACTIVITY

Top VC- and PE-backed AI & ML companies by total VC raised to date*

Company	VC (\$M) raised to date	Segment	Subsegment	IPO probability	M&A probability	No exit probability
OpenAI	\$10,310.0	Horizontal platforms	AI core	34%	64%	2%
Anthropic	\$7,254.0	Horizontal platforms	AI core	93%	4%	3%
Waymo	\$5,500.0	Autonomous machines	Autonomous vehicles	40%	58%	2%
Databricks	\$4,181.9	Horizontal platforms	AI core	91%	7%	2%
Relativity	\$2,383.5	Vertical applications	Industrial AI	78%	6%	16%
Anduril	\$2,315.1	Autonomous machines	Intelligent robotics	68%	30%	2%
Nuro	\$2,132.0	Autonomous machines	Intelligent robotics	74%	24%	2%
JD Digits	\$2,127.9	Vertical applications	Financial services	N/A	N/A	N/A
Horizon Robotics	\$1,920.0	AI & ML semiconductors	Processor design	N/A	N/A	N/A
Inflection	\$1,565.0	Horizontal platforms	AI core	27%	71%	2%

Source: PitchBook • Geography: Global • *As of December 31, 2023
 Note: Probability data is based on [PitchBook VC Exit Predictor methodology](#).



SELECT COMPANY HIGHLIGHTS: ANTHROPIC

ANTHROPIC

Overview

[Anthropic](#) was founded in 2021 by a group of seven former senior members of [OpenAI](#). Several of the founders worked at [Google](#) Research before [OpenAI](#). The founders split off from [OpenAI](#) with a desire to train safe AI systems that could mitigate the worst risks of superintelligence, including human extinction. To serve this mission, the company was established as a public-benefit corporation. Since its founding, [Anthropic](#) has developed proprietary AI systems and commercialized a series of large language models called Claude.

Claude leverages transformer architecture and a reinforcement learning process referred to as Constitutional AI. Constitutional AI tests the alignment of model outputs against a list of ethical rules and principles. In this way, the model self-improves by selecting outputs that conform to the company's ethics. The Constitutional AI process improves the safety of responses without extensive human intervention such as [OpenAI](#) uses via its outsourced reinforcement learning from human feedback approach. We have not tracked any patent for this technique. Because of this process, [Anthropic](#) does not shift its response types as often as ChatGPT, which faces complaints of censorship and model drift as the model changes over time.

Key company information

Founded
2021

Total raised
\$7.3B

Lead investor(s)

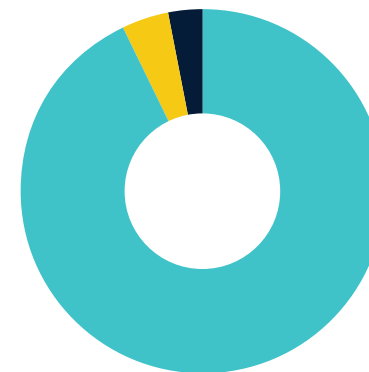
Alphabet, Amazon, LG CNS, Calm Ventures, SK Telecom, Salesforce Ventures, Zoom Ventures, Spark Capital, Sam Bankman-Fried, Jaan Tallinn

Employees
300 in 8 offices globally

Last financing valuation
\$25.0B

Last financing
Raised \$300.0M in a Series G

Exit Predictor



■ **IPO:** 93% probability ■ **M&A:** 4% probability ■ **No exit:** 3% probability

Note: Probability data based on [PitchBook VC Exit Predictor Methodology](#).

About PitchBook Industry and Technology Research

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Our Industry and Technology Research provides detailed analysis of nascent tech sectors so you can better navigate the changing markets you operate in—and pursue new opportunities with confidence.

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