EMERGING TECH RESEARCH

Artificial Intelligence & Machine Learning Report

VC trends and emerging opportunities

Q1 2023 REPORT PREVIEW
The full report is available through the PitchBook Platform.
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For previous updates as well as our complete AI & ML research, please see the designated analyst workspace on the PitchBook Platform.
AI & ML landscape

1. Horizontal platforms
2. Vertical applications
3. Semiconductors
4. Autonomous machines
### AI & ML VC ecosystem market map

**Horizontal platforms**
- AI automation platforms
- AI core
- Computer vision
- Natural language technology

**Vertical applications**
- Consumer
- Financial services
- Healthcare
- Industrial
- Information technology
- Transportation

**AI & ML semiconductors**
- Edge AI software
- Intelligent sensors & devices
- Processor design

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received venture capital or other notable private investments.
VC activity

VC activity ticked up in Q1 based on OpenAI’s unconventional corporate investment from Microsoft. We tracked $22.7 billion in investment during the quarter, including $12.7 billion from generative AI investments including OpenAI. If OpenAI’s deal is excluded, then VC deal activity continued to decline in terms of deal value and count. Vertical applications companies only raised $6.0 billion in Q1 after raising $50.6 billion in 2022, demonstrating weakness in conventional domain-specific software. Investors lack interest in software solutions unless they drive the generative field forward. Generative AI software continues to earn outstanding valuation multiples, with research startups striking deals based on the level of computing power and talent they will need to make breakthroughs. VC investors are adapting to these requests yet not supporting the capital demands of more mature companies that are unlikely to make research breakthroughs.

We are beginning to see the beginning of a generative AI acquisition trend. Microsoft’s investment in OpenAI is structured similarly to an acquisition, with a reported profit share and exclusive distribution rights, demonstrating the value of third-party technology to tech giants. Both Snowflake and Databricks have recently acquired generative AI startups in Neeva and Rubicon, respectively. Neeva is a neural search startup with significant latency improvements over conventional AI searches, while Rubicon focuses on data storage. Apart from these trends, acquisition values have been minimal, only reaching $3.3 billion in disclosed deal value in Q1 after reaching $48.7 billion in disclosed exit value in 2022. Tech giants were mostly dormant, and Iguazio’s $50.0 million acquisition by McKinsey fell below the company’s prior private valuation.
### Key AI & ML late-stage VC deals by deal value*

<table>
<thead>
<tr>
<th>Company</th>
<th>Close date</th>
<th>Subsegment</th>
<th>Stage</th>
<th>Deal value ($M)</th>
<th>Lead investor(s)</th>
<th>Valuation step-up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OpenAI</strong></td>
<td>January 23, 2023</td>
<td>AI core</td>
<td>N/A</td>
<td>$10,000.0</td>
<td>Microsoft</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Monogram Health</strong></td>
<td>January 9, 2023</td>
<td>AI automation platforms</td>
<td>Series C</td>
<td>$375.0</td>
<td>CVS Health, Cigna, Frist Cressey Ventures, Humana Memorial Hermann Foundation, Norwest Venture Partners, TPG</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Asimov</strong></td>
<td>January 5, 2023</td>
<td>AI in healthcare</td>
<td>Series B</td>
<td>$175.0</td>
<td>CPP Investments</td>
<td>9.5x</td>
</tr>
<tr>
<td><strong>Amelia</strong></td>
<td>March 7, 2023</td>
<td>Natural language technology</td>
<td>N/A</td>
<td>$175.0</td>
<td>BuildGroup, Monroe Capital</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>SirionLabs</strong></td>
<td>January 4, 2023</td>
<td>AI automation platforms</td>
<td>Series D</td>
<td>$110.0</td>
<td>Partners Group</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Trusting Social</strong></td>
<td>February 10, 2023</td>
<td>AI in financial services</td>
<td>Series D</td>
<td>$105.0</td>
<td>Masan Group</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Humane</strong></td>
<td>March 8, 2023</td>
<td>Intelligent sensors &amp; devices</td>
<td>Series C</td>
<td>$100.0</td>
<td>Kindred Ventures</td>
<td>1.1x</td>
</tr>
<tr>
<td><strong>Zhidao Network</strong></td>
<td>March 28, 2023</td>
<td>Transportation</td>
<td>Series C2</td>
<td>$84.0</td>
<td>Yixin Group, Chengdu Technology Transfer Venture, Chengdu Tongchuang Zhixing, Zhuhai Haidu Science and Technology Investment, Tencent Investment</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>BRETON Technology</strong></td>
<td>January 5, 2023</td>
<td>Autonomous vehicles</td>
<td>Series C1</td>
<td>$83.2</td>
<td>Inner Mongolia Eerduosi Resources Company, Hunan Chasing Fund</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Cardinal Operations</strong></td>
<td>March 31, 2023</td>
<td>AI automation platforms</td>
<td>Series C2</td>
<td>$72.5</td>
<td>National Manufacturing Transformation and Upgrade Fund</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Source: PitchBook • Geography: Global • *As of March 31, 2023
## VC ACTIVITY

### Top strategic acquirers of AI & ML companies since 2017*

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Deal count</th>
<th>Investor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>21</td>
<td>Corporation</td>
</tr>
<tr>
<td>Accenture</td>
<td>19</td>
<td>Corporation</td>
</tr>
<tr>
<td>Microsoft</td>
<td>14</td>
<td>Corporation</td>
</tr>
<tr>
<td>Meta Platforms</td>
<td>12</td>
<td>Corporation</td>
</tr>
<tr>
<td>Cisco Systems</td>
<td>11</td>
<td>Corporation</td>
</tr>
<tr>
<td>ServiceNow</td>
<td>10</td>
<td>Corporation</td>
</tr>
<tr>
<td>DataRobot</td>
<td>9</td>
<td>VC-backed company</td>
</tr>
<tr>
<td>Intel</td>
<td>8</td>
<td>Corporation</td>
</tr>
<tr>
<td>IBM</td>
<td>8</td>
<td>Corporation</td>
</tr>
<tr>
<td>Oracle</td>
<td>7</td>
<td>Corporation</td>
</tr>
</tbody>
</table>

Source: PitchBook • Geography: Global • *As of March 31, 2023
SELECT COMPANY HIGHLIGHTS: DATABRICKS

Overview

Founded in 2013, Databricks offers a data science platform that includes AI-as-a-service (AIaaS) functionality with a suite of data science tools for data engineering, data warehousing, and ML algorithms. The company grew out of the open-source Apache Spark data science community and created an extensible Unified Data Analytics Platform that can ingest data from enterprise silos and prepare it for cluster-based computing. Once an effective open-source product was in place, the company moved to a closed-source model and rapidly increased revenue beginning in 2016.

Databricks now offers a product suite on top of Apache Spark that includes notebooks for ML model collaboration; a data lake, which integrates unstructured data in a central database for analytics; and data security. The company has focused on the generative AI opportunity, training a custom LLM called Dolly that can run more efficiently than GPT-4 and achieve competitive results on question-answering tasks. The model is open-source and rapidly grew to 10,000 GitHub stars. The company is adding to its infrastructure capabilities as well by acquiring AI data storage startup Rubicon, hardware acceleration startup MosaicML for $1.3 billion, and AI data governance startup Okera. We believe the company is surpassing its peer Snowflake in AI capabilities.

Leadership

Databricks’ management has high technical expertise capable of generating product-led growth and has increased its public company experience. The company was founded by seven early contributors to Apache Spark, and all the cofounders remain at the company. CEO and co-founder Ali Ghodsi earned a Ph.D. in distributed computing and was VP of engineering before being promoted to CEO at the start of the company’s growth phase in 2016. CFO Dave Conte previously took Splunk public in the same role, which suggests Databricks’ accounts will be ready for scrutiny by public markets. The board features cofounders and VC investors, including Andreessen Horowitz and cofounder Ben Horowitz. In Q2 2022, Databricks hired the general counsel from DocuSign, which will provide public company experience as Databricks pursues a public listing.

Competitors

Databricks stands out in the AI & ML market by supporting machine learning operations (MLOps) atop its data lake, functionality that distinguishes it from legacy vendors such as SAP, Microsoft, and AWS, while also being more AI-oriented than next-generation data warehouse vendor Snowflake. Because of its ability to support batch processing for ML analytics and other high-value applications, Databricks is a top choice for enterprises looking to leverage the power of AI in their business operations.
workloads, Databricks is capturing market share from incumbents such as Alteryx, IBM, Oracle, and SAS. Databricks runs on Microsoft Azure and AWS, although those hyperscalers would likely prefer to natively support their ML workflows and may improve their offerings in the future. The company gains market credit for scaling ML model deployment and management across a variety of compute clusters—a critical problem for data scientists new to ML.

Outlook

Databricks has achieved the necessary scale and growth to realize high performance in public markets. The company reached $1.0 billion in revenue in 2022 with 60% revenue growth.

Financing history

<table>
<thead>
<tr>
<th>Series A</th>
<th>Series B</th>
<th>Series C</th>
<th>Series D</th>
<th>Series E</th>
<th>Series F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total raised: $14.0M</td>
<td>Total raised: $33.0M</td>
<td>Total raised: $60.0M</td>
<td>Total raised: $140.0M</td>
<td>Total raised: $250.0M</td>
<td>Total raised: $400.0M</td>
</tr>
<tr>
<td>Pre-money valuation: $34.0M</td>
<td>Pre-money valuation: $214.0M</td>
<td>Pre-money valuation: $453.0M</td>
<td>Pre-money valuation: $800.0M</td>
<td>Pre-money valuation: $2.5B</td>
<td>Pre-money valuation: $5.8B</td>
</tr>
<tr>
<td>Investor(s): Andreessen Horowitz</td>
<td>Investor(s): Andreessen Horowitz</td>
<td>Investor(s): NEA</td>
<td>Investor(s): Andreessen Horowitz</td>
<td>Investor(s): Andreessen Horowitz</td>
<td>Investor(s): Andreessen Horowitz</td>
</tr>
</tbody>
</table>

The company has cut its internal valuation by 10%, according to Ghodsi, suggesting that its valuation is staying relatively resilient as well. The company will need to defend itself against ML-optimized challengers that can carry out more efficient streaming data analysis and in-memory analytics within its database. Furthermore, it will benefit from analytics built on its database becoming essential to high-value industries, including IT and industrial. The company remains innovative and active in future-proofing its business, leading us to believe that, in the long run, Databricks will be valued more highly than relational database incumbents based on the growth opportunities of data lake architecture for streaming data.

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