## Sector Focus: Generative Artificial Intelligence

Generative AI has been one of the most talked-about recent developments in technology, particularly over the past several months. It is most easily understood as a form of machine learning that allows computers to generate diverse types of content, from music and art, to new product designs and business process optimizations. Companies like OpenAI have released their models for public use, and demonstrated an impressive ability to understand natural language inputs and generate coherent content in response.

The rapid pace of developments in this space has been supported by an increasing amount of venture capital dollars flowing into generative AI startups. Looking at available data from Pitchbook, 2021 was the clear high-water mark with over \$4 billion invested into generative AI startups, compared to \$2.7 billion invested over the prior nine years. While fundraising did slow down to \$3.3 billion in 2022 in response to an uncertain macro environment, the \$868 million raised so far in 2023 is on pace to exceed the 2022 total, indicating that investors continue to see promise in this technology.

Figure 1: Total Capital Raised Across All Stages

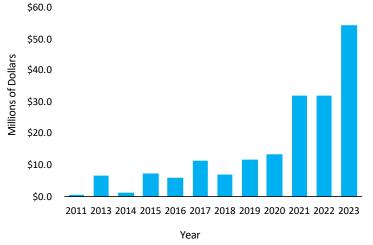
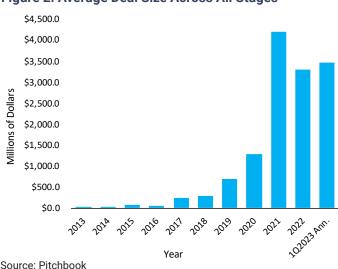


Figure 2: Average Deal Size Across All Stages



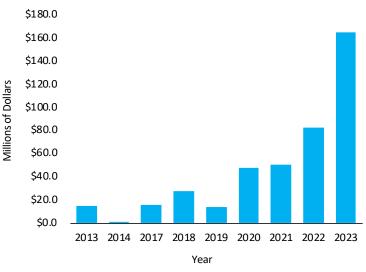
Source: Pitchbook

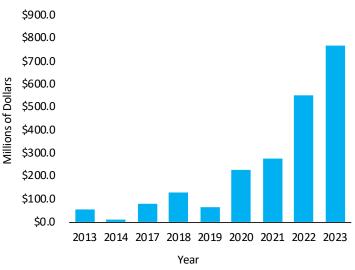
Companies in this space are also receiving valuation premiums compared to non-Al companies at a similar stage. In 2022, the median Series A post-money valuation for generative Al companies was \$71 million, representing a premium of 20% compared to the median of \$60 million for all Series A financings. This premium was even larger for Series B financings, with the median Series B generative Al valuation of \$262 million representing a 31% premium to the overall Series B figure of \$200m. We anticipate this trend to continue for companies that demonstrate further progress and scale into the late-stage.

Much of the excitement around generative AI can be seen by looking more specifically at this Series B stage. While the current annualized pace of Series B deal volume is flat compared to the 2022 total, we have seen a significant uptick in both the average deal size and median post-money valuation this year, as illustrated by the two charts below. Given that activity at the Series B stage can be viewed as a leading indicator for what growth-stage investors can expect over the following 18 to 24 months, we are optimistic about the pipeline of opportunities in the second half of 2023 and into 2024. However, we encourage entrepreneurs and investors to exhibit discipline and focus on realistic product-market fit during this exciting time.

Figure 3: Average Series B Deal Size







Source: Pitchbook Source: Pitchbook

This excitement is not contained to the private markets, however, as public market investors continue to bid up companies with coherent strategies around generative Al. C3.ai, an enterprise Al software company, experienced a two-week bump of over 75% after announcing the launch of its generative Al product suite on January 31, 2023. Similarly, mega-cap tech names such as Microsoft and Nvidia have seen their stock prices soar in 2023 as investors expect these two to be leading the charge from a software and hardware perspective.

Looking at the Private Shares Fund portfolio, there are four companies that are already deeply involved in the generative AI space which is an indication of how this technology is impacting multiple industries, not just pure-play generative AI companies.

Cerebras Systems is a Santa Clara-based company building a new class of computer system designed for the purpose of accelerating AI. In November 2022, around the same time that OpenAI released its ChatGPT chatbot, Cerebras unveiled its Andromeda supercomputer, one of the largest ever built, for commercial and academic use<sup>1</sup>. Shortly after release, the company announced a partnership with Jasper, a leading generative AI company that raised \$140 million from a syndicate of investors including Bessemer Venture Partners, Coatue Management, Insight Partners, and IVP. According to Jasper CEO Dave Rogenmoser, the partnership with Cerebras will enable them to invent the future of generative AI by doing things that are "impractical or simply impossible" with traditional infrastructure<sup>2</sup>. Outside of the Jasper partnership, Cerebras also introduced a "pay-per-model" training service called Cerebras AI Model Studio that allows developers to train their models at half the cost and up to eight times the speed of traditional GPU-based infrastructure<sup>3</sup>.

**ThoughtSpot**, provider of a next-generation analytics platform for large-scale enterprise data, is focused on developing enterprise applications using these innovative technologies. On March 9, 2023, the company announced the launch of ThoughtSpot Sage, a new search engine that combines GPT-3 with ThoughtSpot's patented search technology<sup>4</sup>. The integration will let users search through their massive data stores using natural language prompts, generative narratives based on data visualizations, and improve data modelling capabilities. The company has been working on these features since 2019 but was unable to complete the vision until GPT-3 was released, according to CTO Amit Prakash<sup>5</sup>. The launch of ThoughtSpot Sage comes on the heels of a strong year with the company nearing its cloud transformation with SaaS now comprising over 95% of new customers, representing more than half of revenue. The company further announced that SaaS Annual Recurring Revenue (ARR) has grown 193% in the past year.

Already one of the most well-known companies in the artificial intelligence and machine learning space, **Databricks** on March 24, 2023 introduced the first open-source, instruction-following generative AI model called Dolly<sup>6</sup>. This model will serve as a starting point for companies looking to develop their own ChatGPT-like products. In contrast to OpenAI's model, which currently requires users to pay for Application Programming Interface (API) access and adhere to specific terms of service, Dolly enables anyone to use, modify, or extend the model for any purpose and at no cost<sup>7</sup>. Given that Databricks also provides the backend infrastructure needed for machine learning development, we see the release of Dolly as a positive sign of things to come for the company and a way to democratize access for more companies to improve their products utilizing generative AI.

<sup>1</sup> https://www.cerebras.net/press-release/cerebras-unveils-andromeda-a-13.5-million-core-ai-supercomputer-that-delivers-near-perfect-linear-scaling-for-large-language-models

<sup>2</sup> https://www.businesswire.com/news/home/20221129005816/en/Cerebras-Systems-and-Jasper-Partner-on-Pioneering-Generative-Al-Work

 $<sup>3\</sup> https://www.zdnet.com/article/ai-challenger-cerebras-unveils-pay-per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-large-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper/per-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-jasper-model-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-with-cirrascale-ai-cloud-service-a$ 

 $<sup>4\</sup> https://www.thoughtspot.com/press-releases/thoughtspot-integrates-with-gpt-3-to-launch-sage-a-new-ai-powered-search-experience-for-analytics$ 

<sup>5</sup> https://diginomica.com/thoughtspot-gives-gpt-enterprise-analytics-focus

<sup>6</sup> https://www.databricks.com/blog/2023/03/24/hello-dolly-democratizing-magic-chatgpt-open-models.html

<sup>7</sup> https://venturebeat.com/ai/databricks-releases-dolly-2-0-the-first-open-instruction-following-llm-for-commercial-use/

Discord, a Voice Over Internet Protocol (VoIP), instant-messaging, and digital distribution platform, has over thirty million people already using AI apps on their platform every month according to the company. The company has seen teams and communities use the platform as a place to prototype and build AI services. In fact, the creators of the popular open-source image model Stable Diffusion, first met and collaborated in a Discord community. In March, Discord announced three new services enabled by OpenAI's ChatGPT technology8. The first is an enhanced version of its Clyde chatbot, which will now be able to answer questions, have extended conversations, and even recommend playlists. The next is AutoMod, which will use OpenAI technology to reduce the burden of manually moderating a server. According to the company, AutoMod has automatically blocked more than forty-five million unwanted messages from servers before they even had a chance to be posted based on server rules. The last feature is Conversation Summaries, which can bundle streams of messages into topics so users can quickly catch up or join in on what matters most to them.

Outside of generative AI, the Private Shares Fund portfolio is home to a number of companies utilizing artificial intelligence to drive disruption and innovation across traditional industries. These companies have been at the forefront of AI development for many years and are also set to benefit from an increased emphasis on AI applications and automation.

- Nanotronics, an advanced machines and intelligence company that helps customers solve precision manufacturing challenges, combines computer vision and artificial intelligence in its nSpec industrial microscope. This microscope can recognize, classify, and measure nanoscopic manufacturing flaws, allowing for real-time correction and improving the yield of semiconductor manufacturing. In addition, Nanotronics's nControl/AIPC signal splitters connect to sensors in a facility (such as PLCs, cameras, or wireless devices) to aggregate real-time data about the manufacturing process and uses deep learning to build models that provide Key Performance Indicator (KPI) predictions, anomalous activity alerts, and autonomous control so the factory automatically adapts to increase yields and avoid malfunctions.
- Verbit, a leading interactive transcription and captioning solution, utilizes Al-based technology to transform both live and recorded video and audio into 99%+ accurate captions and transcripts for the education, legal, media, and enterprise
- Brain Corp, developer of Al-based software designed to create autonomous machines, utilizes Al and machine learning to control its autonomous robots which are currently deployed in retail centers, airports, educational facilities, commercial offices, and warehouses.

The Private Shares Fund continues to source, research, and invest in leading private companies. We do this while remaining engaged with companies, investors, and other domain experts throughout the ecosystem to ensure we are aware of what's happening across all fast-moving sectors of the economy. In the next sector series, we will cover the long-term investment opportunities in cyber security as the threat of attacks increases and the industry rapidly evolves.

8 https://discord.com/blog/ai-on-discord-your-place-for-ai-with-friends

## The Private Shares Fund - Top Ten Holdings\* as 3/31/23

The Private Shares Fund, a closed-end interval fund, provides investors with access to the private growth asset class. READ MORE >



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<sup>\*</sup>Represents 28.1% of Fund holdings as of March 31, 2023. Holdings are subject to change. Not a recommendation to buy, sell, or hold any particular security. To view the Fund's complete holdings, visit privatesharesfund.com/portfolio.

## **RISKS AND DISCLOSURES**

As of December 9, 2020, Liberty Street Advisors, Inc. became the adviser to the Fund. The Fund's portfolio managers did not change. Effective April 30, 2021, the Fund changed its name from the "SharesPost 100 Fund" to "The Private Shares Fund." Effective July 7, 2021, the Fund made changes to its investment strategy. In addition to directly investing in private companies, the Fund may also invest in private investments in public equity ("PIPEs") where the issuer is a special purpose acquisition company ("SPAC"), and profit sharing agreements. The Fund's investment thesis has not changed.

Investors should consider the investment objectives, risks, charges and expenses carefully before investing. For a prospectus with this and other information about The Private Shares Fund (the "Fund"), please download here, visit the Fund's website at PrivateSharesFund.com or call 1-855-551-5510. Read the prospectus carefully before investing.

Investment in the Fund involves substantial risk. The Fund is not suitable for investors who cannot bear the risk of loss of all or part of their investment. The Fund is appropriate only for investors who can tolerate a high degree of risk and do not require a liquid investment. The Fund has no history of public trading and investors should not expect to sell shares other than through the Fund's repurchase policy regardless of how the Fund performs. The Fund does not intend to list its shares on any exchange and does not expect a secondary market to develop.

All investing involves risk including the possible loss of principal. Shares in the Fund are highly illiquid, and can be sold by shareholders only in the quarterly repurchase program of the Fund which allows for up to 5% of the Fund's outstanding shares at NAV to be redeemed each quarter. Due to transfer restrictions and the illiquid nature of the Fund's investments, you may not be able to sell your shores when, or in the amount that, you desire. The Fund intends to primarily invest in securities of private, late-stage, venture-backed growth companies. There are significant potential risks relating to investing in such securities. Because most of the securities in which the Fund invests are not publicly traded, the Fund's investments will be valued by Liberty Street Advisors, Inc. (the "Investment Adviser") pursuant to fair valuation procedures and methodologies adopted by the Board of Trustees. While the Fund and the Investment Adviser will use good faith efforts to determine the fair value of the Fund's securities, value will be based on the parameters set forth by the prospectus. As a consequence, the value of the securities, and therefore the Fund's Net Asset Value (NAV), may vary.

There are significant potential risks associated with investing in venture capital and private equity-backed companies with complex capitol structures. The Fund focuses its investments in a limited number of securities, which could subject it to greater risk than that of a larger, more varied portfolio. There is a greater focus in technology securities that could adversely affect the Fund's performance. The Fund's quarterly repurchase policy may require the Fund to liquidate portfolio holdings earlier than the Investment Adviser would otherwise do so and may also result in on increase in the Fund's expense ratio. Portfolio holdings of private companies that become publicly traded likely will be subject to more volatile market fluctuations than when private, and the Fund may not be able to sell shares at favorable prices, such companies frequently impose lock-ups that would prohibit the Fund from selling shores for of period of time offer on initial public offering (IPO). Market prices of public securities held by the Fund may decline substantially before the Investment Adviser is able to sell the securities.

The Fund may invest in private securities utilizing special purpose vehicles ("SPV"s), private investments in public equity ("PIPE") transactions where the issuer is a special purpose acquisition company ("SPAC-), and profit sharing agreements. The Fund will bear its pro-rata portion of expenses on investments in SPVs or similar investment structures and will have no direct claim against underlying portfolio companies. PIPE transactions involve price risk, market risk, expense risk, and the Fund may not be able to sell the securities due to lock-ups or restrictions. Profit sharing agreements may expose the Fund to certain risks, including that the agreements could reduce the gain the Fund otherwise would have achieved on its investment, may be difficult to value and may result in contractual disputes. Certain conflicts of interest involving the Fund and its affiliates could impact the Fund's investment returns and limit the flexibility of its investment policies. This is not a complete enumeration of the Fund's risks. Please read the Fund prospectus for other risk factors related to the Fund.

The Fund may not be suitable for all investors. Investors are encouraged to consult with appropriate financial professionals before considering an investment in the Fund.

Companies that may be referenced on this website are privately-held companies. Shares of these privately-held companies do not trade on any national securities exchange, and there is no guarantee that the shares of these companies will ever be traded on any national securities exchange.

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