## **Artificial Intelligence and Robotics**

## Sequoia in \$50m backing for UK chipmaker Graphcore

Start-up bids to become Britain's biggest AI hardware manufacturer

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UK chipmaker Graphcore has raised \$50m from Sequoia Capital, one of Silicon Valley's top venture capital firms, as the start-up angles to become Britain's biggest maker of <u>artificial</u> intelligence hardware.

Sequoia has only made a handful of investments in Europe but said Graphcore was poised to compete with industry giants Nvidia and Intel in the fast-growing market.

The UK has historically been at the centre of the chip industry but lost its biggest companies to foreign buyers with the sales of Arm Holdings to Japan's SoftBank last year and Imagination Technologies to China-backed Canyon Bridge, a deal that closed this month.

Graphcore is now seeking to inherit their crown. The Bristol-based start-up has designed chips for machine learning applications such as connected devices, self-driving cars, cloud computing and robotics, in the belief that more businesses will use these technologies.

Currently, companies that run artificially intelligent algorithms use standard graphics processing units even though machine learning technology requires vast amounts of data to be crunched very quickly. Graphcore's new chips, unlike conventional processors, are designed specifically to power machine learning systems and have up to 100 times more processing power.

"We really feel like we're in a race," said Nigel Toon, chief executive of Graphcore.

"Artificial intelligence is really reshaping [hardware] and it's a big transition — bigger than the transition from desktop to mobile."

The artificial intelligence industry is expected to grow rapidly over the next few years as companies plough money into smart devices and automated technologies that are driven by machine learning. According to IDC, the research group, global revenues from cognitive and artificial intelligence systems will increase to \$46bn by 2020, compared with an estimated \$12.5bn this year.

Investors have rushed to make bets on the chip start-ups whose technology will underpin that growth. "There will certainly be more competition over time," said Matt Miller, a partner at Sequoia who led the investment. "They have a first-mover advantage but they're going to have to keep investing."

Mr Toon, who sold his last company, Icera, to US-based Nvidia for \$367m, says that Graphcore's plan is to become a big listed business in the UK, not to sell to a rival: "Part of the reason that we're keen to work with Sequoia and other investors is that we want to grow and take Graphcore public."

For now the plan is to hire staff for Graphcore's new office in Silicon Valley. Mr Miller, who will join the company's board, said there will also likely be a new office in China "in the very near future".

Among Graphcore's early backers are electronics groups Samsung and Bosch and Hermann Hauser, the founder of Arm Holdings. The company has also attracted investment from Demis Hassabis, co-founder of DeepMind, Atomico and Dell Technologies Capital.

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