# Lumai secures $10 million funding to revolutionise optical computing in AI



In a significant development within the field of artificial intelligence, Lumai, a startup founded in Oxford, has successfully raised over $10 million in a funding round aimed at advancing its pioneering work in optical processing technology. The investment was spearheaded by Constructor Capital, a venture capital firm that focuses on deep technology, and included backing from several notable investors such as IP Group, PhotonVentures, Journey Ventures, LIFTT, Qubits Ventures, State Farm Ventures, and TIS Inc.

Founded in 2022, Lumai emerged from research at the University of Oxford and aims to address the increasing limitations faced by traditional silicon-based computing, particularly in the realm of AI. The startup's innovation lies in its approach to optical computing, which utilises light (photons) for computation instead of the more commonly used electrons that flow through silicon. This shift not only promises enhanced speed and energy efficiency but also the capacity for parallel data processing, allowing for operations to occur simultaneously along different paths and wavelengths.

Tim Weil, CEO and co-founder of Lumai, explained, “The future of AI demands radical breakthroughs in computing. The cost of current LLMs is unsustainable, and next-generation AI won’t happen without a major shift.” He emphasized that Lumai’s optical computing design can address these challenges by significantly reducing power consumption and enhancing scalability.

The technology developed by Lumai allows for artificial intelligence systems to perform core arithmetic operations within optical beams moving through three-dimensional space, thereby bypassing the limitations of standard silicon GPUs and even existing photonics. Their novel architecture is designed in a Peripheral Component Interconnect Express (PCIe) form factor, facilitating easier integration into existing data centre infrastructures while promising to lower both operational costs and overall energy consumption. According to the company, the system is projected to deliver performance levels up to 50 times greater than conventional silicon-only accelerators while consuming merely 10% of the power needed currently.

As the demand for large language models (LLMs) and other transformer-based AI applications surges, the traditional silicon-based infrastructures are facing unprecedented challenges. Data centre power consumption in the United States, for instance, is expected to triple by 2028, leading to concerns about energy efficiency within the industry. Lumai’s advancements aim to counteract these trends, providing AI data centres with a way to enhance performance and reduce costs simultaneously.

This latest funding will help Lumai scale its operations by doubling its workforce, accelerating product development, and expanding into the U.S. market. Notably, the startup has also received accolades for its innovative approach, including being named the best overall technology at the global OCP Future Technologies Symposium and obtaining a place in Intel Ignite’s programme in London.

Industry experts have acknowledged the potential of Lumai’s technology. Dr. Serg Bell, Founder and Chairman of Constructor Capital, remarked on the evolutionary necessity of employing photons for computation, stressing that as humanity strives towards advancing artificial general intelligence, more efficient energy sources are essential. Dr. Lee Thornton from IP Group endorsed Lumai’s contributions by noting, “Having solved the challenges of optical compute to provide a low-cost, scalable solution, Lumai’s technology has the potential to transform the future of AI.”

With the AI sector continuously evolving, Lumai’s efforts and innovations within optical computing may represent a crucial turning point in addressing the complex challenges faced by existing AI infrastructures. The outcome of this funding round positions Lumai not just as a competitor but potentially as a leader in the race towards more sustainable and efficient AI computing solutions.

Source: [Noah Wire Services](https://www.noahwire.com)