



SALIENCE
LABS

SaliENCE Labs

Accelerating AI Inference at the Speed of Light

The Challenge – Demand for AI Inference Processing

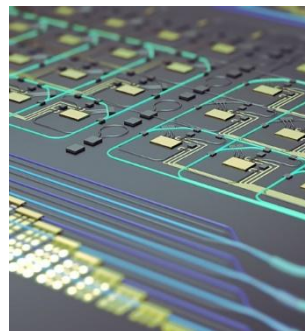
Demand for Artificial Intelligence (AI) computing capacity is doubling every 3.5 months, but silicon processors can't keep pace with demand, as the density of transistors is reaching its limit and fabrication requirements/costs are becoming prohibitive. They are not power-efficient and suffer from thermal runaway issues, signal distortion at high frequencies, crosstalk and interference. Hybrid photonic/electronic TPUs (Tensor Processing Units) can solve this bottleneck but need advancements on the current-state-of-the-art. At GHz speeds, current approaches suffer from significant optical loss, signal corruption as well as sensitivity to thermal variations and fabrication imperfections.

The Solution – PACIFIC

SaliENCE has developed the first massively parallel photonic accelerator chip for AI inference using a novel approach: amplitude modulation of light, combined with Dense Wavelength Division Multiplexing (DWDM). This combination squeezes many more computing threads into a light beam. As a result, the chip not only outperforms rivals; it also closes the gap between current performance and demand and, crucially, continues scaling to meet future market needs. By using photonics, SaliENCE can achieve a compute density far higher than standard CMOS electronics - a 50x50 matrix enables 1 PetaOPS on 150 mm², delivering 500% higher compute density of the best CMOS solutions.

The Funding

Neon worked extensively with SaliENCE to secure a €2.3m grant from Horizon Europe's EIC Accelerator programme to support the rapid scale-up of SaliENCE's technology. Crucial to this was intensive pitch practice, enabling the team to successfully navigate a challenging review panel.



The Impact

With the capability to revolutionise the use of AI within sectors including 5G telecoms, autonomous vehicles and data centres, SaliENCE has the potential to become a €1 billion business within the next decade. The grant from EIC, secured by Neon, gives them the scale-up funding they need to accelerate their roadmap and make this ambitious vision a reality.



24 months



€2.3M Grant



SaliENCE Labs
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