

The CLP Day 2025 explores connections between AI and Photonics

This week, ICFO hosted the Corporate Liaison Program (CLP) Day, this year centered on AI for Photonics, and Photonics for AI.

October 17, 2025

This year's CLP Day 2025, hosted at and organized by ICFO, centered on the hot topics of artificial intelligence and photonics, and their convergence under the theme 'AI for Photonics, and Photonics for AI'. The event brought together experts, scientists, innovators, and industry leaders and representatives to explore how this transformative synergy is revolutionizing fields from next-gen photonic chip design to precision-driven personalized medicine."

The day opened with a welcome address by **Silvia Carrasco, ICFO's Vice Director of Innovation, Sponsored Research, and Public Engagement**. Carrasco, who has led ICFO's Knowledge and Technology Transfer (KTT) team since 2006, emphasized the growing importance of collaboration between academia and industry to accelerate innovation in

photonics and AI. i¿½ICFO's role has always been to bridge research excellence with societ
l impact,i¿½ she noted, thanking the CLP members -now comprised by more tha
40 companies - for their continued engagement and tr
st. The event, conducted by **Guillermo Gerling, Innovation Manager of the Knowledge and Technology Transfer (KTT) Unit at ICFO**, was structured into two main sections, i¿½AI for Photonics and Photonics for AIi¿½, each exploring how one discipline can dri
e breakthroughs and empower the other. This dual approach fostered a rich dialogue
n mutual innovation, revealing how light-based technologies and intelligent algorithms a
e increasingly co-evolving, forging interesting synergies, driving new discoveries a
d accelerating innovation at the intersection of light and intelligenc

Session 1: AI for Photonics

The first session, chaired by **Frank Koppens**, ICREA Prof. at ICFO and leader of the Quantum Nano-optoelectronics research group, explored how artificial intelligence is revolutionizing photonic design and development.

Dirk Englund, **Professor at MIT and Co-founder of Axiomatic AI**, opened the program with i¿½Compiling Machine Intelligence onto Optoelectronic Systems.i¿½ Englund's talk went beyond conventional AI frameworks, introducing the concept of i¿½agentive AIi¿½, that is, systems capable not only of executing tasks but also of reasoning, designing, and lear
ing autonomously, bridging the gap between natural human reasoning and mathemat
cal precis
on. Englund explained that Axiomatic is developing specialized tools missing from curren
AI frameworks, tools designed to give AI the rigor and reliability needed for enginee
ing applications where, as he noted, i¿½there's very little tolerance for errors.i¿½ A key in
ovation discussed was the Axiomatic Interface - Lemma, a system enabling AI to verify its own reasoning and synthesize new ideas once it can correctly answer foundational qu
stions. Next, **Sander Roosendaal**, R&D Engineering Director at **Synopsys Photonic Solutions**, discussed i¿½The Power of AI for Photonic ICs Design.i¿½ Roosendaal highlighted how Synopsys.ai, the industry's first full-stack AI-driven electronic design automation suite, is transforming chip design workflows. He described the growing complexity of semiconductor design and explained how AI tools are enabling engineers to design faster, smarter, and with fewer resources. He also reinforced the idea that Agentic AI is still a tool orchestrated by humans, that are prone to make mistakes, but also are the ones capable a inventing new tools thanks to our imagination.

Following the second talk, ICFO alumni **Barbara Buades**, Co-Founder and CEO of **MEETOPTICS**, presented i¿½Louis - The AI Assistant for Photonicsi¿½ , an AI-driven platform that simplifies the discovery of photonics components by connecting researchers and engineers to thousands of trusted products. Her work reflects a larger trend of democratizing access to photonic technologies through intelligent, data-driven tools.

Session 2: Photonics for AI

This second session, chaired by **Valerio Pruneri**, ICREA Prof. at ICFO and leader of the Optoelectronics research group, explored how photonics can drive advancements in artificial intelligence.

Doug Kelly, Senior Researcher at **Microsoft Research**, presented i¿½Analog Optical Comput r for AI Inference and Beyond.i¿½He described Microsoft's Project AOC, a pioneering analog optical computing platform that uses optics and analog electronics to accelerate AI workloads. Operating at room temperature and built from scalable, low-cost components, AOC represents a paradigm shift in computing efficiency and performance. Kelly compared the co-design of hardware and AI applications to the symbiotic evolution of GPUs and deep learning systems.

Following him, **Henkjan Gersen**, Head of Innovation at **iLoF** and Honorary Industry Professor at the University of Bristol, spoke on i¿½Accelerating Personalized Medicine Throu h Photonics and AI.i¿½Gersen showcased iLoF's breakthrough platform that uses optical signals to create rich phenotypic signatures of biological samples - enabling faster, non-invasive diagnostics and paving the way for precision medicine. i¿½We're overcomi g the limits of traditional biochemical analysis,i¿½ he noted, i¿½by letting light and algo ithms reveal what biology hid s.i¿½ The session concluded with a **round table discussion** moderated by **Alina Hirschmann**, Head of Communications at ICFO, bringing together all morning speakers to explore future opportunities where AI and photonics converge - from next-generation chips to healthcare applications.

Session 3: Ecosystem Initiatives

The third session, chaired by Guillermo Gerling, focused more on gathering insights about European ecosystem initiatives supporting innovation in AI and photonics.

Luis Alvarez, Partner at **EY**, offered an overview of European funding for AI technologies, underlining how strategic investments are fueling competitiveness across the continent's technology sectors.

Next, **Mariona Sanz**, Head of Innovation and Business Development at the **Barcelona Supercomputing Center (BSC)**, presented **BSC's AI Factory**, a supercomputing environment designed to empower AI research and enterprise applications.

Finally, **Valerio Pruneri**, ICFO Group Leader and **Director of PIXEurope**, introduced **PIXEurope** , the European Pilot Line on Advanced Photonic Integrated Circuits, highlighting the mission of the infrastructure, and how collaborative manufacturing and innovation infrastructures are vital to Europe's photonics leadership.

The event ended with a networking lunch and continued discussions in one-on-one meetings - reinforcing CLP Day's goal of being a key platform for collaboration across research, industry, and entrepreneurship.


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