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LightOn Photonic coprocessor integrated into European AI Supercomputer

PARIS, France, December 21st, 2021 - LightOn today announces the integration of one of its photonic co-processors in the Jean Zay supercomputer, one of the Top500 most powerful computers in the world. Under a pilot program with GENCI and IDRIS, the insertion of a cutting-edge analog photonic accelerator into High Performance Computers (HPC) represents a technological breakthrough and a world-premiere. The LightOn photonic co-processor will be available to selected users of the Jean Zay research community over the next few months.

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LightOn's Optical Processing Unit (OPU) uses photonics to speed up randomized algorithms at a very large scale while working in tandem with standard silicon CPU and NVIDIA latest A100 GPU technology. The technology aims to reduce the overall computing time and power consumption in an area that is deemed "essential to the future of computational science and AI for

Science" according to a 2021 U.S. Department of Energy report on "Randomized Algorithms for Scientific Computing". INRIA (France's Institute for Research in Computer Science and Automation) researcher Dr. Antoine Liutkus provided additional context to the integration of LightOn's coprocessor in the Jean Zay supercomputer:

> "*Our research is focused today on the question of large-scale learning. Integrating an OPU in one of the most powerful nodes of Jean Zay will give us the keys to carry out this research, and will allow us to go beyond a simple "proof of concept"*

Igor Carron, LightOn's CEO and co-founder additionally said about this world premiere:

> "*This pilot program integrating a new computing technology within one of the world's Supercomputer would not have been possible without the particular commitment of visionary agencies such as GENCI and IDRIS/CNRS. Together with the emergence of Quantum Computing, this world premiere strengthens our view that the next step after exascale supercomputing will be about hybrid computing*"

Christelle Piechurski, GENCI's Chief HPC & Quantum Officer added:

> "*This program is an exciting opportunity for the French AI research community to access innovative technology and understand how it could speed-up some of their AI computations on large-scale algorithms as NLP which reach now GPT-3 size on Jean Zay. For us, this is also a way to pave the path to other frugal architectures in the future. GENCI and IDRIS are also very proud to support a French startup in its learning curve of HPC world.*"

LightOn's technology has already been successfully used by a community of researchers since 2018. Early users of the Jean Zay pilot program will conduct research on Machine Learning foundations, Differential Privacy, Satellite Imaging Analysis, and Natural Language Processing tasks.

About LightOn

LightOn provides the most powerful AI tools for use by any businesses, anywhere. Leveraging best-in-class exascale hardware and innovative training schemes, LightOn makes available some of the largest foundation models for Augmented Work and Creativity. Founded in 2016, LightOn is

funded by Otium Capital, Anorak Ventures, and Quantonation. For more information visit: https://LightOn.ai

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