LightOn

In Portfolio

Optical accelerator for AI and Machine Learning

LightOn's Optical Processing Unit performs processes that constitute fundamental bricks of Machine Learning (ML) and Artificial Intelligence (AI). By complementing the CPUs and GPUs already in use, OPUs not only provide a power-efficient solution to manage very large datasets without traditional storage limitations but also show the potential to considerably accelerate data classification, data compression, database retrieval and anomaly detection.

htttp://www.lighton.io

Key team members

Igor Carron
Founder and CEO
Ex-Ingineer at NASA
Co-organiser of one of the largest Data Science Meetup in the world
PhD in Nuclear Engineering

Laurent Daudet
Founder and CTO
ENS graduate
Senior member of IEEE
PhD in Applied Mathematics
>50 peer-review journal articles
>120 conference proceedings

Deal summary

ROUND STAGE
SEED

LOCALISATION
FRANCE

ROUND SIZE
€2.5M

CLOSING DATE
DEC 2019

Value Proposition

Random projections act as elementary step to accelerate many ML algorithms, allowing them to manipulate and reduce the size of datasets that are too large to handle. They require to generate, store and multiply large random matrices but the cost of these operations limits the size of the datasets that can be handled by CPUs and GPUs.

By instantaneously performing these operations, LightOn's OPUs considerably enlarges the dataset size that can be tackled by ML algorithms. They have already demonstrated a x6-10 acceleration and a x30 energy savings over CPUs/GPUs in Transfer Learning tasks. Future generations will even provide larger speed-ups thanks to optimized components and optics.

Why do we believe in LightOn ?

With the fast emergence of IoT, the world is being overloaded by massive amounts of data. Exploiting these data will **unlock tremendous business opportunities** for those who are able to analyze and interpret them. For the considerable acceleration that they provide, we see LightOn's Optical Processing Units as **essential tools in this incoming data revolution**.

Milestones/Roadmap

- Team at the center of a very active community-driven ecosystem of Machine Learning experts and Data scientist;
- Platform-as-a-Service model, the LightOn Cloud is in beta access with 60+ users already committed including large actors like Deezer;
- Future generations of OPUs expected to attain long-term performance gains above x100 over CPUs/GPUs for a whole range of ML algorithms.

Deep Physics

Quantum Cybersecurity

Quantum Computing

Quantum Sensing

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