MVA INTERNSHIP - FAST-TRAINING

Deep learning is now ubiquitous in predictive analysis and specially in the field of computer vision. However, it comes at a steep price in terms of energy consumption, hardware implements as well as training or inference runtimes. For these reasons, Datakalab specializes in low power, runtime efficient and privacy compliant deep learning solutions working on edge devices.

With a strong emphasis on research and development, Datakalab has a publication record in the main international machine learning and computer vision venues such as NeurIPS, CVPR, ICCV and AAAI.

DATAKALAB

YOUR MISSION

The goal of the internship is to investigate methods to accelerate the training of deep neural networks (DNNs). An example of such method is Net2Net [1], an approach that consists in first learning a small (as defined by its channel width) DNN, then progressively enlarge this DNN during training using weight splitting to ensure continuity throughout the process.

YOUR ROLE

As a research intern will thus be to implement Net2Net and benchmark it on several scenarios, ranging from traditional computer vision benchmarks (e.g. CIFAR10/ImageNet classification) to practical problems (e.g. person detection in urban environments). You will then identify its limitations and propose creative improvement to the method.

[1] Chen Tianqi and Goodfellow Ian and Shlens Jonathon Net2net : Accelerating learning via knowledge transfer ICLR 2015

SKILLS PROFILE

– Proficiency in Python
– Proficiency with Deep Learning libraries such as TensorFlow and PyTorch
– Good Understanding of Mathematics for Deep Learning

SUPERVISION

Supervised by our R&D team, composed of Arnaud Dapogny, researcher in computer vision, Kevin Bailly, researcher at Datakalab and associate professor at Sorbonne Université in machine learning and Edouard Yvinec, PhD student on neural networks acceleration. They published in major conferences such as ICCV, CVPR, NeurIPS and AAAI as well as journals such as TAC, TIP and IJCV.You will also be in contact with a group of developers.

WHEN AND WHERE?

– As soon as possible
– 114 Boulevard Malesherbes 75017
– Internship Salary : based on experience
– If you are looking for a Thesis after the internship, we are looking for your profile

Please contact us at ad@datakalab.com and lf@datakalab.com – www.datakalab.com