Nathan Hubens

@ nathan.hubens@gmail.com | +32494430302 | Website | GitHub

Education

Ph.D. in Computer Science — Mons (BE) | Paris (FR)
University of Mons | Institut Polytechnique Paris — *Oct. 2018 - Dec. 2022*
· Compression of neural networks by weight pruning.

M.Sc. of Engineering — Mons (BE)
University of Mons — *Sep. 2016 - Jul. 2018*
· Electrical engineering with multimedia and telecommunications specialization.

Experience

ISIA Lab — Mons (BE)
Postdoctoral Researcher — *Jan. 2023 - Now*
· Development of a non-pharmacological sedation monitoring system with deep learning.

AMD — Remote
Software Engineer — *Jan. 2022 - Jul.2022*
· Model compression and speed-up with fasterai.

Trusted AI Labs (TRAIL) — Remote
Research Scientist — *Sep.2021 - Now*
· Privacy preserving ML;
· Collaboration with public hospitals for solution deployment.

Creaceed — Mons (BE)
Research Scientist Intern — *Feb. 2018 - Jun. 2018*
· Image super-resolution and denoising using neural networks;
· Model compression and speed-up;
· Integration of the solution on mobile devices (iOS).

Research Engineer Intern — *Jul. 2017 - Sep. 2017*
· Exploration of deep learning techniques for image processing;
· Realization of a deep neural network for image restoration tasks;

YEP'Tech — Mons (BE)
Executive Secretary — *Sep. 2015 - Jun. 2017*
· Junior Initiative providing professional experience to engineering
students through projects and training.

Publications

FasterAI: A Lightweight Library for Neural Networks Compression — MDPI Electronics
Hubens N., Mancas M., Gosselin B., Preda M., Zaharia T. — *2022*

One-Cycle Pruning: Pruning ConvNets Under a Tight Training Budget — ICIP
Hubens N., Mancas M., Gosselin B., Preda M., Zaharia T. — *2022*

FasterAI: A Lightweight Library for Creating Sparse Neural Networks — SNN
Hubens N., Mancas M., Gosselin B., Preda M., Zaharia T. — *2022*

Improve Convolutional Neural Network Pruning by Maximizing Filter Variety — ICIAP
Hubens N., Mancas M., Gosselin B., Preda M., Zaharia T. — *2022*

Where Is My Mind (looking at)? Predicting Visual Attention from Brain Activity   MDPI Informatics

Delvigne V., Tits N.,La Fisca L. , <u>Hubens N.</u> , Maiorca A., Wannous H. , Dutoit T. , Vandeborre J.-P.   *2022*

Towards Lightweight Neural Animation : Exploration of Neural Network Pruning in Mixture of Experts-based Animation Models   GRAPP

Maiorca A., <u>Hubens N.</u>, Laraba S., Dutoit T.   *2022*

Fake-Buster: A Lightweight Solution for Deepfake Detection   SPIE

<u>Hubens N.</u>, Mancas M., Gosselin B., Preda M., Zaharia T.   *2021*

One-Cycle Pruning: Pruning ConvNets Under a Tight Training Budget   SNN

<u>Hubens N.</u>, Mancas M., Gosselin B., Preda M., Zaharia T.   *2021*

An Experimental Study of the Impact of Pre-Training on the Pruning of a Convolutional Neural Network   APPIS

<u>Hubens N.</u>, Mancas M., Gosselin B., Preda M., Zaharia T.   *2020*

Modulated Self-attention Convolutional Network for VQA   ViGIL, NeurIPS workshop

Delbroucq J.B., <u>Hubens N.</u>, Maiorca A., Dupont S.   *2019*

TALKS

ICIP, One-Cycle Pruning: Pruning ConvNets Under a Tight Training Budget   Bordeaux (FR) | 2022

CUTE, FasterAI: how to create small and fast neural networks   Mons (BE) | 2022

SNN, FasterAI: A Lightweight Library for Creating Sparse Neural Networks   Online | 2022

ICIAP, Improve Convolutional Neural Network Pruning by Maximizing Filter Variety   Lecce (IT) | 2022

TRAIL Kickoff, `import fasterai`: a Library to Make Smaller and Faster Neural Networks   Mons (BE) | 2022

Energy4Climate, Neural Network Compression in the time of Climate Challenge   Paris (FR) | 2021

SPIE, Fake-Buster: A Lightweight Solution for Deepfake Detection   San Diego (USA) | 2021

SNN, One-Cycle Pruning: Pruning ConvNets Under a Tight Training Budget   Online | 2021

APPIS, An Experimental Study of the Impact of Pre-Training on the Pruning of a Convolutional Neural Network   Las Palmas (ES) | 2020

International ML Workshop, Towards smaller and faster CNNs   Paris (FR) | 2019

TEACHING

Faculty of Engineering, Signal Processing   Mons (BE) | 2021-2023

University of Mons, Multimed'IA   Mons (BE) | 2020-2022

PROJECTS

fasterai - Author
PyTorch ⋄ fastai ⋄ Compression
fasterai is a library for PyTorch and fastai for neural network compression (13k+ downloads).

Kaggle - Competitor
Deep Learning ⋄ Computer Vision ⋄ PyTorch
Top 2% of Kaggle competitors

Medium - Technology Writer
Deep Learning ⋄ Computer Vision
Writer for the *Towards Data Science* publication (600k+ subscribers).

SKILLS & LANGUAGES

Programming: Python, Swift, C++, MATLAB;

Framework: PyTorch, fastai, Keras, OpenCV, Pandas, Matplotlib, Numpy;

Language: French (native), English (level C1), Dutch (level B2), Japanese (beginner).