PIERRE OUANNES

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Skills

MACHINE LEARNING
Deep Learning
Computer Vision
NLP
Data processing

PYTHON LIBRARIES
pandas
NumPy
PyTorch
fastai
TensorFlow
sk-learn
matplotlib
seaborn
Keras

OTHER PROGRAMMING LANGUAGES
C
MATLAB
HTML/CSS
Java
JavaScript (ES6)

LANGUAGES
French (mother tongue)
English (fluent, C1 level)
Spanish (beginner)
Mandarin (beginner)

WEB AND MOBILE DEVELOPMENT
React.js
Bootstrap
Flask
Android Development

Education

Ecole Centrale de Lille
Engineering Degree in Computer Science
Sept. 2017 to Current

I'm enrolled in Data Sciences courses with lessons in a variety of subjects like mathematics, scientific computing, signal processing, and Machine Learning.

fast.ai course: Deep Learning for Coders, part 1 & 2
Oct. 2018 to Apr. 2019

I've learned about Neural Net architectures like CNN (ResNet, U-Net), RNN, SGD, and how to train and fine-tune them, for instance with Adam, momentum, learning rate annealing or one cycle policy.
I've worked on deep learning projects for the course, involving image classification, image regression, object detection, image segmentation, and NLP problems.
During this course, we used mainly PyTorch with the fastai library on Jupyter Notebooks.
I'm also a contributor to the fastai open source library (8 commits so far).
Part 2 focused on understanding Neural Networks from the ground up and allowed me to get a deep understanding of how they work.

Stanford MOOC: Machine Learning
Sept. 2018 to Oct. 2018

I learned about Supervised Learning methods like linear and logistic regression, neural networks and Support Vector Machines.
Unsupervised Learning was also covered, mainly with K-means clustering, Principal Component Analysis and Anomaly Detection.
Following that MOOC, I decided to go further in Deep Learning by taking the fastai course.

Preparatory classes, Lycée Saint-Louis
2014 to 2017

Intensive classes in Mathematics, Physics and Computer Science

Work Experience

CERN (Google Summer of Code)
Student developer
May 2019 to Sept. 2019

I was tasked with adapting the Matterport implementation of the Object Detection algorithm Mask RCNN to 3D, in order to classify events produced by the high-energy detector HGCAL. This detector is used to detect collisions occurring in the Large Hadron Collider. Its output is then reconstructed as 3D images that will then be analysed by the 3D Mask RCNN algorithm to detect whether a significant event is taking place. This work is done using TensorFlow and Keras.

Centrale Lille Voltage Racing Team
Team manager
Oct. 2017 to Mar. 2019

I managed a team of 20 engineering students in order to build an electric racing car. Objective: taking part in the Formula Student race in Silverstone, UK. I was also a member of the electronics division.

Centrale Lille Projets, Junior-Enterprise
Engineering Director & Project Manager
Oct. 2017 to Feb. 2019

Project Management in Computer Science and Engineering:
- I drafted and negotiated commercial proposals;
- I was the intermediary between the client and the student implementers assigned to the project;
- I monitored the projects from start to finish.

IEMN (Institut d'Electronique, de Microélectronique et de Nanotechnologies)
Research Intern
Jan. 2018 to Feb. 2018

Internship at IEMN, a CNRS research center in Micro and Nanotechnologies. I made and characterised microbubbles to which magnetic nanoparticles were attached. I also built custom software with MATLAB to automatically detect and classify the sizes of the microbubbles on images taken with an optic microscope. Applications of those magnetic microbubbles are mainly in targeted drug delivery systems.

Projects

Machine Learning and Robotics Hackathon
Nov. 2019 to Nov. 2019

1 week hackathon on the theme of the construction industry. My team used a robotic arm to sert construction waste, to facilitate later recycling. I was in charge of the Machine Learning part of the project, in which I used the Mask RCNN algorithm to detect different kind of waste and properly sort them.

Blog on Computer Science and Deep Learning
Jan. 2019 to Current

I've written some articles about Deep Learning and Computer Science while following the fastai courses.

The main one is about Kaiming and Xavier initialization of Neural Networks.