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Jules Gottraux

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Work Experience

Machine Learning Researcher **July 2022 — Present**

Magma Learning, Lausanne

I participate in the development of the application and more specifically the algorithm designs focused on AI. I also am continuing the work done during the internship by setting up the developed algorithm's deployment.

Keywords: Machine Learning, MLOps, NLP

Student Assistant **2020 — 2021**

École polytechnique fédérale de Lausanne (EPFL)

Technical assistant, supervisor and Scrum Master for Bachelor students. This was in the context of programing courses, one in C++ and one in Python focusing on Data Mining and Machine Learning.

Education

Master's Degree in Data Science **2019 - 2022**

École Polytechnique Fédérale de Lausanne (EPFL)

Coursework: Traditional Machine Learning, Deep Learning, Mathematical foundation of Data Science, Computer vision, Optimization for Machine Learning, Reinforcement Learning fundamentals, NLP

GPA: 5.36

Bachelor's Degree in Computer Science **2015 - 2019**

École Polytechnique Fédérale de Lausanne (EPFL)

Coursework: Computer Architecture, Software Engineering, Compiler Construction, Database Systems, Stochastic Modeling, Fundamentals of Statistics, Machine Learning fundamentals, Distributed Processing, Graph Theory

GPA: 5.12

Skills

Communication	French (native speaker), English (C1)
Programming	Python (Numpy, Sklearn, Pandas, PyTorch, TensorFlow, OpenCV, etc.), SQL, Scala, C(++), Bash, LaTeX
Tools	Strong Linux knowledge (scripting, system administration), Git, Scrum, Spark, Hadoop, Docker

Projects

System Integration in Renku for Big Data

- Engineered an automatic setup for projects using Big Data frameworks (Hadoop, Hive, Spark) on the platform
- Contributed to Renku, open-source platform for collaborative Data Science with the Swiss Data Science Center

Keywords: Open Source, Linux, System Administration, Hadoop, Spark, Docker, Kubernetes

Dynamical System's Modelling for Tic Disorder

- Leveraged activity recognition techniques based on dynamical systems for direct tic detection on videos
- Used PCA and auto-encoders for the latent space mapping of the video frames
- Collaborated with researchers in Data Science and psychology at the John Hopkins university and the Swiss Data Science Center
- Formed rules for the data collection from patient at Hopkins university with the other researchers

Keywords: Dynamical Systems, Neural Network, Computer Vision, Latent Space Representation, PyTorch, OpenCV

Data Visualization on Coronavirus Evolution

- Created an interactive map of the world to visualize the evolution of COVID cases around the world
- Coded everything in JavaScript using the D3 library, except for the data wrangling done in Python

Development of an Android Application

- Collaborated with 6 other students on the application development
- Used continuous tools (Travis CI, Code Climate) along with Github actions for automation
- Worked using an Agile methodology to create and assign task every week