Matthieu Le Cauchois

Place de la Gare 6, 1020 Renens, Switzerland
in/matthieulecauchois/ | +33.78.634.18.54 | lecauchoismatthieu@gmail.com

EDUCATION

EPFL
MSc in Robotics
Minor in Neurocomputing
May 2022 | Lausanne, Switzerland
GPA: 5.74 / 6.0

JOHNS HOPKINS UNIVERSITY
BSc Exchange Program
Research in Neurocomputing
Jul 2018 | Baltimore, USA
GPA: 3.81 / 4.0, Dean's List

EPFL
BSc in Mechanical Engineering
Jul 2018 | Lausanne, Switzerland
GPA: 5.21 / 6.0

COURSEWORK

Advanced Machine Learning
Artificial Neural Networks
Neuronal Dynamics
Distributed Intelligent Systems
Applied Data Analysis
Image Analysis
Natural Language Processing
Optimal Decision Making

SKILLS

CODING
• Python • C • C++ • C#
• HTML • CSS • Javascript
• MATLAB

PACKAGES/TOOLS
• PyTorch • Keras • Pandas
• OpenCV • React Native
• .NET • Docker • Kubernetes
• GCP • Azure • Unix

LANGUAGES
• French • English • Spanish

INVOLVEMENT

• Won the second prize at HackZurich 2021, Europe's largest hackathon (1000+ participants), for voki, an AI-powered audio messaging mobile app.
• Reached the finals of START Lausanne 2017, and won the people's choice award for an avalanche rescue drone. Finalist of MassChallenge Switzerland.
• Teaching assistant for Applied Machine Learning with Prof. Aude Billard.

EXPERIENCE

IMD BUSINESS SCHOOL | Data Scientist
Aug 2022 – Nov 2022 | Lausanne, Switzerland
- Developed natural language processing pipelines for business articles to evaluate and rank the future readiness of companies.
- Worked part-time and left to start my own company, Typeless.

ILLUIN TECHNOLOGY | Data Scientist
Mar 2021 – Aug 2021 | Paris, France
- Bridged computer vision and natural language processing to build a state-of-the-art document structure extraction product.
- Designed a transformer-based speech recognition system integrated with efficient language model correction tools and annotation platform.

COGITO INSTRUMENTS | Machine Learning Engineer
Jun 2020 – Sep 2020 | Geneva, Switzerland
- Designed and tested machine learning systems for edge pattern recognition tasks on neuromorphic chips.

ONE SECOND DELIVERY | Robotics Intern
Aug 2018 – Feb 2019 | Lausanne, Switzerland
- Played an integral role in the startup by managing the complete design process of an autonomous delivery drone prototype.

CELLULAR SIGNALING CONTROL LAB @ JHU | Research Assistant
Oct 2017 – May 2018 | Baltimore, USA
- Created a model of thalamocortical travelling waves in the brain using spiking neural networks with top-down connectivity, and published the results.

PROJECTS

MATTAR LAB @ UCSD | Master Thesis
Sep 2021 – Apr 2022 | San Diego, USA
- Modeled human behavior as a compressed communication channel using information theory and deep learning, and published the results.

MATHIS GROUP @ EPFL | Semester Thesis
Sep 2020 – Feb 2021 | Lausanne, Switzerland
- Studied learning-to-learn for visuomotor tasks in the brain using deep reinforcement learning models to reproduce structural-learning behavior.

AUTOMATIC CONTROL LAB @ EPFL | Semester Thesis
Feb 2020 – Jul 2020 | Lausanne, Switzerland
- Leveraged deep reinforcement learning to robustly control non-linear gyroscope systems with reward engineering and dynamics randomization.

PUBLICATIONS

[1] S. Bhattacharya, M. B. Le Cauchois, P. A. Iglesias, and Z. S. Chen. The impact of a closed-loop thalamocortical model on the spatiotemporal dynamics of cortical and thalamic traveling waves. *Scientific Reports*, 11(1):14359, 2021. `https://www.nature.com/articles/s41598-021-93618-6`.

[2] M. B. Le Cauchois, A. Mathis, J. R. Howlett, and M. G. Mattar. Chunking as policy compression in capacity-limited recurrent neural networks. *Proceedings of Reinforcement Learning and Decision Making (RLDM) 2022*, 2022.