Maxime Rochkoulets

(+33) 6 42 83 09 69 • mrochkoulets@gmail.com • mrochk.github.io • linkedin.com/in/mrochk

Education

KU Leuven (Katholieke Universiteit Leuven) • Leuven, Belgium · September 2024 ≈ June 2026
Master of Engineering • *Computer Science (Artificial Intelligence)*
Currently enrolled in the first year of my Master's curriculum, specializing in Machine Learning.

University of Bordeaux • Bordeaux, France · September 2021 – May 2024
Bachelor of Science • *Computer Science* · Rank: **7/166** | Grade: **15.25/20**
Bachelor obtained with honors, completed a two-semester exchange in Dublin during my final year.

High School • France · September 2018 – July 2021
French General Baccalaureate • *Mathematics, English, History and Political Sciences* · Obtained with honors.

Relevant Coursework

Data Structures & Algorithms, Compilers, Networks, Cryptography & Number Theory, Computer Architecture, Operating Systems, Probabilities & Statistics, Software Architecture, Distributed Systems, Linear Algebra, Parallel & Concurrent Programming, Machine Learning, Data Mining, Reinforcement Learning, Computer Vision

Internships

LaBRI (Bordeaux Computer Science Laboratory) – **Research Intern** · May 2024 – July 2024
- Research internship during which my focus was on a subject at the crossroads of Deep Learning and Software Engineering. I was part of the Progress research team, and my work consisted in finding ways to train and use LLMs more effectively for Software Engineering tasks. I learned how to train Transformers from scratch, as well as how to fine-tune or internally modify pre-trained models using PyTorch and conduct experiment on them. Finally, I presented my work and findings during weekly meetings, and, at the end, gave a talk in front of the other team researchers.

Projects

fastlob – Python · (See mrochk.github.io/projects.html for more.)
- Fast and minimalist limit-order-book (LOB) implementation in pure Python. This package is meant to be safe, clean, and easy to reuse and extend for other developers. My goal with this project is that it becomes the reference package for anyone who needs a reliable limit-order-book. The package is published and available for download on PyPI.

NN.c – C
- Feed-forward neural network & other machine learning models implemented from scratch in pure C, without the use of any external library, starting from basic linear algebra operations to a fully functioning and trainable network.

Llama-Aurelius – Python, PyTorch, Transformers
- Fine-tuning the Llama-3.2-3B model on Marcus Aurelius' writings using QLoRA. It taught me a lot about techniques such as quantization, low-rank adaptation and fine-tuning. The model is available for use on my HuggingFace page.

3AC Compiler – Java
- Project made in the frame of university, where I had to build a compiler using Java and ANTLR4. It takes an hypothetical programming language, then parses and compiles it to three-address code for a given interpreter.

MMA Predictions – Python, PyTorch
- Machine Learning project for which the goal was to train and assess the performance of models predicting the outcomes of MMA fights. It required a lot of data preprocessing and taught me how to train and evaluate models.

Technical Skills

- Programming Languages Experience: Python, C, C++, Go, Java, Bash, OCaml, Haskell, Julia, JavaScript.
- Other Computer Experience: Torch, Tensorflow, Linux, Git, Numpy, Pandas, gRPC, REST, HTML/CSS, LaTeX, Prolog, Google Cloud, Docker.

General Skills

- Spoken Languages: **English** [IELTS Academic: Band Score 7.5, 2024], **French** [Native] and **Russian**.

Extra Curricular Activities

- **Quantitative Finance:** Member of the *Beta Sigma Club*, a club where we explore topics related to Mathematics, Finance and Quantitative Research. We also organize and participate in various events and competitions.
- **Football:** Played soccer with various teams for more than 10 years, competed in many competitions and tournaments in France and Ireland. Now playing for KU Leuven's Falcons football team.
- **Student Jobs:** Worked during every holidays since my first year of high school, first in the fields and then in different restaurants and bars as a bartender and waiter.
- **Volunteer Work:** After school in France I used to help primary school kids with their homework.
- **Interests:** Artificial Intelligence, French & Russian Literature, Philosophy, Finance, Blockchain, Chess, Hiking.