

# MAXIME ROCHKOULETS

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## EDUCATION

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**KU Leuven [Katholieke Universiteit Leuven]** • Leuven, Belgium September 2024 – June 2026 [Expected]  
*Master of Engineering • Computer Science (Artificial Intelligence)*

Currently enrolled in the first year of my master's curriculum, specializing in AI and 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 honours, completed an exchange in Dublin during my final year.

**High School** • France September 2018 – July 2021  
*French General Baccalaureate* **Honors**

Baccalauréat général obtained with honors, with Mathematics and English as my chosen specialty courses.

## RELEVANT COURSEWORK

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Data Structures & Algorithms, Compilers, Computability & Complexity, Networks, Cryptography & Number Theory, Object-Oriented Programming, Computer Architecture, Operating Systems, Probabilities & Statistics, Software Design, Machine Learning, Distributed Systems, Linear Algebra, Cloud Computing, Parallel & Concurrent Programming

## INTERNSHIPS

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**LaBRI** [Bordeaux Computer Science Research Laboratory] – Python, PyTorch, Transformers May 2024 – July 2024

- My second research internship in this institute. This time, I focused on a project at the crossroads of Deep Learning and Software Engineering. My work consisted in finding ways to train and use Large Language Models more effectively for Software Engineering. I learned how to train transformers from scratch, as well as how to fine-tune or internally modify pre-trained models and conduct experiment on them. Finally, I presented my work and findings during weekly meetings and gave a final talk in front of the team researchers (available on my projects page).

## PERSONAL PROJECTS

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**Neural Network – C** *Work done on my free time or for university (see [mrochk.github.io/projects.html](https://mrochk.github.io/projects.html) for more).*

- Feedforward neural network & other machine learning models implemented from scratch in pure C, without the use of any external library, starting from basic tensor operations to a fully functioning and trainable network.

**Exchange – Go**

- Market order book simulation. The matching engine implements the FIFO algorithm and works with different type of orders. This project made me learn more about how exchanges work internally as well as market micro-structure.

**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 a quantization, low-rank adaptation and fine-tuning. The model is available on my HuggingFace profile.

**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 Outcomes Predictions** – Python, PyTorch, Scikit-Learn

- 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.

## GENERAL SKILLS

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- **Spoken Languages:** **English** [IELTS Academic: Band Score 7.5, 2024], **French** [Native] and **Russian**.
- **Communication:** Can easily fit into any group, I am used to work with different people on multiple projects.

## TECHNICAL SKILLS

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- **Programming Languages:** C, Python, C++, Go, Java, OCaml, Julia, Haskell, JavaScript.
- **Other Computer Experience:** Linux, Git, PyTorch, NumPy, Pandas, Bash, Excel,  $\text{\LaTeX}$ , HTML/CSS.

## EXTRA CURRICULAR ACTIVITIES

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- **Soccer:** 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 team.
- **Student Jobs:** Worked during every holidays since my first year of high-school, first in the fields then in different restaurants and bars as a bartender and waiter.
- **Volunteer Work:** When I was studying in France I used to help primary school kids with their homework after school.
- **Chess:** Casual chess player, both online and in-person.
- **Interests:** Artificial Intelligence, French & Russian Literature, Philosophy, Finance, Blockchain, Chess, Hiking.