Grenoble, France.

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Education

Grenoble **Grenoble INP-Ensimag** **Sept. 2023 – Aug. 2024**

- 2nd year M.S. in Computer science - Data science and Artificial intelligence.

Grenoble **Université Grenoble alpes** **Sept. 2020 – May 2024**

- 1st year M.S. in Computer science, June 2023. GPA: 13/20 (Top 30% of the class).
- B.S. in Computer science, June 2021.
- Magister in Computer science, a research program, Sept. 2020 – Aug. 2024.

Research Internships

Orange Labs - Lannion **Mar. – Aug. 2024**

- **Subject:** Evaluation of knowledge editing in large language models (LLMs).
- Team: NADIA (NAtural DIAlogue)
- Supervisor: Dr. Gwénolé Lecorvé.
- Contributed to the definition of a **Knowledge Measure (KM)**, to evaluate **atomic knowledge editing** of LLMs. Incorporated temporality. Conducted validation experiments on various LLMs and a random LM.

Grenoble Informatics Laboratory **May – July 2023**

- **Subject:** Integrating information retrieval (IR) constraints in deep neural networks.
- Team: Algorithms, Principles and TheorIes for collaborative Knowledge acquisition And Learning (APTIKAL).
- Tutor: Prof. Eric Gaussier.
- Reformulated some **IR constraints** to the neural framework.

Grenoble Institute of Neurosciences **Feb. – Aug. 2022**

- **Subject:** Integration of multi-parametric data by ML for the development of an imaging bio-marker in epilepsy.
- Team: Functional Neuroimaging and Brain Perfusion
- Tutor: Dr. Emmanuel Barbier.
- Implemented a clustering model using **k-means** and **Gaussian mixture models** for multi-parametric data, and evaluated employing AIC and BIC criterion's. Used mainly **Python**, **scikit-learn** and NiBabel.

Grenoble Informatics Laboratory **June – July 2021**

- **Subject:** Data augmentation with GANs for semi-supervised classification applied to images.
- Team: APTIKAL.
- Tutor: Prof. Massih-Reza Amini.
- Implemented a **semi-supervised model** in python for the prediction of phase and Euler angles in microscopic data. Evaluated different models and techniques including **GANs**, **SVMs** and **Random forest**.

Programming Languages and Technologies

- Python; C/C++; Java; SQL; Shell; Linux; Git; Java RMI; RabbitMQ; LaTex; GDB; Docker; Anaconda.
- Pytorch; NumPy; SciKit-Learn; SciPy; Pandas; Keras; Matplotlib; OpenCV; Cuda; BeautifulSoup.

Publications and Manuscripts

- **Considering Distractors and Temporality to Measure Factual Knowledge in Language Models**, 2024, (Under Review).

Licenses & certifications

- Mathematics for Machine Learning: Linear Algebra, (2023), Imperial College London, Coursera.

Technical Experience – Projects

2024

- **Finetuning Large Language Models**, deeplearning.ai.
- **Pretraining LLMs**, deeplearning.ai.

- **Let's reproduce GPT-2 (124M)**, Andrej Karpathy Tutorial.
- **GPU-Accelerated Multilayer Perceptron from scratch** for MNIST Digits Classification.

2023

- **ML Algorithms from scratch**, Perceptron, Gradient descent, K-means, MLP.
- **Let's build GPT: from scratch, in code, spelled out**, Andrej Karpathy Tutorial.
- **SAT Solver**, Automated Planning and Problem Solving using PDDL4J and Sat4J.
- **Distributed Messaging System using Virtual Overlay Ring Network**, Designed and implemented using Java and RabbitMQ, highlighting expertise in distributed systems and routing algorithms.
- **System Programming - NachOS**. Collaborated in a team to implement processes, threads and synchronization features in the NachOS, gaining experience in OS design, implementation and multithreading.

2022

- **Internships web scraping** Developed an automated application to extract and organize internship proposals from the faculty website into a CSV format. Python, Pandas, BeautifulSoup.

Work Experience

Student Tutor **Self-employed - Grenoble** **Sept. 2019 – Present**

- Taught maths, physics, chemistry and computer science, to all ages ranging from children to elderly.
- **Skills:** teaching, communication, patience, problem-solving, adaptability, time management.

Education Assistant **Grenoble High School** **Sept. 2021 – Aug. 2023**

- Facilitated student growth through comprehensive residential support and dedicated supervision.
- **Skills:** leadership, responsibility, communication, mediation, teamwork.

Student Tutor **SOLUTION BILINGUE** **Dec. 2018 – June. 2019**

- Taught maths, physics and chemistry, to pupils ranging from elementary to high school.
- **Skills:** teaching, communication, patience, problem-solving, adaptability, time management.

Spoken Languages

• English: Fluent. • French: Fluent - TCF C1. • Arabic, Kabyle: Native. • German: Beginner.

Volunteering

- Contributed to the maintenance and cleanliness of a local community association.
- Coordinated the collection of surplus bakery bread for distribution to those in need through a charity.

Graduate Coursework

M2 Semester 9:

- Mathematical Foundations of ML • Advanced ML: Applications to Vision, Audio and Text.
- Natural Language Processing and Information Retrieval • GPU computing
- Augmented and virtual reality: innovative interaction techniques

M1 Semester 8:

- Intro. to AI and Data Science • Programming Languages and Compiler Design
- Operating systems design and concurrent programming • Software engineering
- Augmented and virtual reality: innovative interaction techniques • Object-oriented design
- Databases • Intro. to Networks • Intro. to HCI and event-based programming

M1 Semester 7:

- Automatic planning and AI techniques • Intro. to Cybersecurity • Image processing
- Operations Research • Intro. to mobile robotics • Intro. to distributed systems
- Parallel Algorithms and Programming

Undergraduate Coursework

- Algorithms Analysis and Complexity • Programming and Project Studies • English
- Software and Hardware Architectures • Computability theory and Turing machines
- Intro. to Machine Learning • Intro. to Systems and Networks • Algorithms and Modeling
- Software Programming and Project • Databases Design and Management • Syntactic Analysis