Elyas BENYAMINA

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EDUCATION

2023-2024	**ECOLE NORMALE SUPÉRIEURE PARIS-SACLAY (PART OF UNIVERSITÉ PARIS-SACLAY)** Saclay, France

Master 2 MVA (Mathematics, Vision, Learning)
Award: *Laureate of Sophie Germain excellence scholarship given by the Foundation Jacques Hadamard*

2022-2023	**UNIVERSITÉ PARIS CITÉ (EX PARIS DIDEROT & DESCARTES)** Paris, France

Master 1 in Mathematics (Mathematics, Modeling & Machine Learning) - **Rank: 1st** *& Admitted to Cambridge*

2020-2024	**ECOLE CENTRALE DE NANTES – TOP FRENCH GRANDE ECOLE ENGINEERING SCHOOL** Nantes, France

Bachelor & Master of Science (1st and 2nd year) in General Engineering (Data Science Track) - **GPA: 3,83/4**

2016-2019	**LYCÉE SAINT-LOUIS / CLASSE PRÉPARATOIRE (MPSI-MP* WITH COMPUTER SCIENCE)** Paris, France

Advanced undergraduate coursework leading to the examination for entry to French Engineering Schools

WORK EXPERIENCE

Jul 24-Nov 24 *(6 months)* — **SEGULA TRANSFORM** — Paris, France
Machine Learning Engineer Intern
- Developed LLM comprehension of technical data, 3D CAD models and SQL requests, using advanced RAG methods and prompting strategies.

Sep 22-Jan 25 *(20 months)* — **MINISTRY OF HIGHER EDUCATION AND RESEARCH** — Paris, France
Teaching Assistant (Oral Examiner in Mathematics) at Lycée Louis-Le-Grand
- Weekly examination and coaching of undergraduate PC* and PCSI students enrolled in "Classe Préparatoire"

Jul 23-Sep 23 *(3 months)* — **ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE - ADAPTIVE SYSTEMS LAB** — Lausanne, Switzerland
Research Intern (E3 - Excellence in Engineering Program)
- Worked on learning over graph and social learning problems
- Implemented deep learning based model to approach optimal predictions in hidden state estimation problem

May 22-Aug 22 *(4 months)* — **KING'S COLLEGE LONDON & UNIVERSITY OF OXFORD** — London, England
Research Intern
- Worked on finite-time liquidation strategy and market-making models using deep learning (PyTorch)
- Visited the Oxford-Man Institute

Jul 21-Mar 23 *(20 months)* — **MERCK LIFE SCIENCE** — Paris, France
Data Scientist Intern & Apprentice
- Collected, structured, and pre-processed more than 8 million raw measurement data collected from 200,000+ Milli-Q professional water purifiers (laboratories, hospitals)
- Implemented predictive maintenance algorithms to determine the condition of components in real-time

PROJECTS

- **Meshroom (3D Reconstruction Software) Contributor:** Fixed UI bugs and worked on camera tracking and SfM improvements in dynamic scenes with a focus on accurate feature matching
- **Molecule Retrieval with Natural Language Queries (Deep Learning and NLP):** Worked on contrastive learning to map text and linked molecule graphs together
- **Automatic Video Segmentation:** Implemented a fully automatized framework generalizing SAM-PT method, focusing on trajectories classification and using CoTracker
- **Applications of Dynamic Time Warping:** Application of Dynamic Time Warping and variants to speech recognition and EEG classification
- **ENS / Qube Research & Technologies:** Participated in the 2021 & 2024 data challenges

LANGUAGE & IT SKILLS

- Languages: French (native), English (fluent), Spanish (intermediate), Arabic (notions)
- IT: Proficient in Python, SQL, Office and LaTeX - Notions in R, C++, Matlab, web development skills
- Statistics & Data Science: Data Management (Numpy, Pandas, Seaborn), Machine Learning (sklearn, PyTorch)

ACTIVITIES & INTERESTS

- IT, created a website for a maths teacher during high school (4,000+ monthly visitors) & was the IT Advisor of a doctor during the creation of a medical cabinet in gynecology
- Volunteering, gave 800+ hours of mathematics lessons to high school and bachelor students, created an online platform (10,000+ members, 800+ speakers), which enables students to learn about Grandes Ecoles
- Member of the Renovo association from 2016 to 2021, gave maths and physics courses (500+ hours) to 100+ students from disadvantaged backgrounds in difficulty or wishing to improve their skills for a preparatory class
- Judo (8 years of practice, brown belt), participated in regional tournaments