

Oussama Zekri

4th year ENS Saclay

"Normalien" Student Researcher

ENS Paris-Saclay and Université Paris-Saclay, France

+33-646238165

✉ oussama.zekri@ens-paris-saclay.fr

🌐 oussamazekri.fr

🌐 in/oussama-zekri-41a984163/

EXPERIENCE

- Department of Mathematics, Imperial College London** Nov 2024 - Jan 2025
 Research Intern. Supervisor : Dr. Nicolas Boullé London, UK
- Huawei AI Research** Mar 2024 - Sep 2024
 Research Intern. Supervisor : Dr. Ievgen Redko Paris, France
 - Large Language Models as Markov chains. [Preprint link](#), submitted to a top-tier ML conference.
 - Zero-shot MBRL using LLMs. [Preprint link](#), submitted to a top-tier ML conference.
 - LLMs learn SGD In-Context. [Workshop paper](#) accepted at ICML 2024, top 6 paper out of over 50 submissions.
- System Optimization Laboratory, University of Kyoto** Apr 2023 - Jul 2023
 Research Intern. Supervisors : Dr. Ellen Hidemi Fukuda & Dr. Bruno Figueira Lourenço. Kyoto, Japan
 - Subject : Convergence analysis under consistent error bounds.
 - New contributions to convex optimization. [A journal paper](#) is currently being previewed.
- Centre Borelli, ENS Paris-Saclay** Mar 2022 - Jul 2022
 Research Intern. Supervisors : Dr Laurent Oudre & Thibaut Germain. Gif-sur-Yvette, France
 - Subject : Similarity measures between time series inspired by optimal transport.
 - Creation of tools for identification of spatio-temporal similarities, trained on real data from rehabilitation patients.

EDUCATION

- ENS Paris-Saclay, Gif-sur-Yvette** Sep 2023 - Present
 Master's Degree, M2 MVA, Mathematics and Applications
 - Courses in Europe's leading MSc in ML, taught by top-level researchers.
 - Relevant coursework : Statistical learning, Optimal Transport, Convex optimization, Distributed and Large-Scale Computing Optimization, Kernel Methods, Deep Learning in Practice...
- Ecole Polytechnique, ENS & Univ. Paris-Saclay, Palaiseau** Sep 2021 - Aug 2023
 Master's Degree, Pure & Applied Mathematics.
 - Mathematics courses of a very high standard, which enabled me to acquire solid skills.
 - Relevant coursework : Functional Analysis, Optimization and Numerical Optimization, Advanced Probabilities, Statistics, Learning and Stochastic Simulation...
- CPGE Lycée Thiers, Marseille** Sep 2018 - Aug 2021
 Bachelor of Science, Mathematics & Physics, PCSI-PSI*
 - Advanced undergraduate courses leading to entrance exams for France's leading Scientific and Engineering schools.

TEACHING AND JURY ACTIVITIES

- HEC Paris** 2024
 Jury member in Mathematics Jouy-en-Josas, France
 - Member of the jury for the mathematics entrance examination to France's most selective business school.
 - Written and oral examination of candidates.
- Lycée Louis-Le-Grand, Lycée Turgot** Sep 2022 - Present
 Teaching Assistant & Oral Examiner in Mathematics Paris, France
 - Courses and oral examinations "Khôlles" given to students in French "Classes Prépas".

PROJECTS

- Optimal Transport** : JAX implementation and development of new ideas on the paper *Learning costs from structured Monge Displacements*, M. Klein et al., advised by Prof. Gabriel Peyré.
- PET Metabolic Imaging** : Working in pairs with the nuclear medicine physicians Arnaud Berenbaum and Florent Besson. Fine-tuning the very recent SSM model *U-Mamba*, for PET automatic segmentation.
- Convolutional Kernel Network** : From-scratch implementation, in Python and CUDA, of the CKN architecture introduced by Dr. Julien Mairal in *End-to-End Kernel Learning with Supervised CKN*, J. Mairal. [Blogpost here](#).

AWARDS & GRANTS

- Grant and title** : 4-year grant ($\sim 63k$ €), as a reward for my admission to the ENS and obtaining the grade of trainee civil servant.
- Academic achievement** : Ranked in the top 200 out of more than 8,000 candidates for the ENS entrance exam (top 2.5%).

SKILLS & LANGUAGE

- Code** : Proficient in Python, Latex, PyTorch, TikZ...
- Languages** : French (native), English (Cambridge CAE C1 certificate), Spanish (intermediate), Japanese (basics).