

Oussama ZEKRI

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"Normalien" Student Researcher
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EXPERIENCE

- **Huawei AI Research** Mar 2024 - present
Research Intern Paris, France
 - Subject : LLMs learn SGD In-Context.
 - Workshop paper accepted at ICML 2024, top 6 paper out of over 50 submissions.
 - Supervisors : Dr. Ievgen Redko
- **System Optimization Laboratory, University of Kyoto** Apr 2023 - Jul 2023
Research Intern Kyoto, Japan
 - Subject : Convergence analysis under consistent error bounds.
 - New contributions to convex optimization. A journal paper is currently being published.
 - Supervisors : Dr. Ellen Hidemi Fukuda & Dr. Bruno Figueira Lourenço.
- **Centre Borelli, ENS Paris-Saclay** Mar 2022 - Jul 2022
Research Intern 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.
 - Supervisors : Dr Laurent Oudre (Centre Borelli) & Thibaut Germain.

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.
 - Courses are given in collaboration with Université Paris-Saclay and Ecole Polytechnique.
 - 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 Assitant & Oral Examiner in Mathematics Paris, France
 - Courses and oral examinations "Khôlles" given to students in French "Classes Prépas".
 - Institutions frequented : Lycée Louis-Le-Grand PC*1 & Lycée Turgot PCSI.

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 Convolutional Kernel Networks*, J. Mairal. Blogpost [here](#).

AWARDS & GRANTS

- **Grant and title** : 4-year grant (~ 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, SQL...
- **Languages** : French (native), English (Cambridge CAE C1 certificate), Spanish (intermediate), Japanese (basics).