Rayane MOUHLI

PhD student at Université Paris Cité & Sorbonne Université

Education

 PhD in applied mathematics – Université Paris Cité (MAP5) & Sorbonne Université (LJLL) « Ontogenesis by large deformations » under the supervision of Barbara Gris and Irène Kaltenmark 	2023-2026
Mathematics, Vision, Learning (MVA) – ENS Paris-Saclay – Research master's degree 2022- o Geometric Data Analysis - Medical Image Analysis – Topological Data Analysis Optimal Transport – Deep learning for medical image analysis - Geometry and shape spaces Deformable models and minimal path methods for image analysis	2023
 ENSAE – Institut Polytechnique de Paris – Engineering school Advanced Machine Learning – Bayesian Statistics – Optimization – Deep Learning Hidden Markov Models and Sequential Monte-Carlo – Natural Language Processing 	2019-2023
Preparatory class in Math-Physics – Claude Fauriel High School– Saint-Etienne o Intensive preparatory course for competitive entrance into top French engineering schools	2016-2019
Teaching experiences	
Teacher assistant – Université Paris Cité – Paris o Mathematics and calculus, Differential calculus and dynamic systems (undergraduate level)	2023-2025
Higher school preparatory classes examiner in mathematics – ICAM – Paris • Examiner for weekly oral interrogations in preparatory class for engineering school	Sept 2022-June 2023
Teacher assistant – Noe – Paris • Tutoring in Python and SQL for future product managers.	2021-2022
Research experiences	
 Research internship – University of Utah – Salt Lake City (Utah, USA) Internship under the supervision of Sarang Joshi at the University of Utah. Image registration using geodesic regression in the LDDMM framework. 	June – Dec. 2023
 Research internship – Commissariat à l'Energie Atomique (CEA) – Paris Objective of the internship : extraction of skeletons from point clouds Implementation of geometric methods : Delaunay triangulation, Voronoi diagram, Alpha-shape, Laplacian Smoothing, Mesh Contraction 	March–Sept 2022
 Data Scientist (R&D internship) – fifty-five – Paris Prediction of the purchase of a product by an user in the 3 days following his visit on a website by machine learning and time series methods : XGBoost, ARIMA, recurrent neural network models LSTM (Tensorflow) 	Sept 2021–Mar 2022

Invited conferences and seminar talks

- MAP5 lab PhDs' seminar, Paris (Feb 2025)
- Workshop "Infinite-dimensional Geometry: Theory and Applications", Erwin Schrodinger Institute, Vienna, (Feb 2025)
- Workshop on Varifolds, Nancy (November 2024)
- Congrès des Jeunes Chercheurs en Mathématiques Appliquées (CJ-CMA), ENS Lyon (October 2024)
- Geometric Sciences in Action: from Geometric Statistics to Shape Analysis, CIRM, Marseille (May 2024)
- Shape seminar, Paris

Other skills Computer skills : Python – SQL - LateX Languages : • French (native) • Anglais : C1+ (180+ Cambridge Linguaskill) • Arabic : beginner