

Hakim Ziani

PhD Researcher in Artificial Intelligence
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— scholar.google.com/citations?user=wIbPY1gAAAAJ

SUMMARY

International PhD researcher (Cotutelle, CentraleSupélec Paris & University of Turin) specializing in generative models for heavy-tailed data. Work published at international venues (ICML, EPEW...); reviewer at ICML and NeurIPS 2026. Previously a Data Scientist at KilowattSol, building predictive maintenance models for photovoltaic infrastructure and deploying data-driven solutions across R&D and engineering teams.

EDUCATION

- 2023 – 2024 Master's Degree in Machine Learning for AI at **University of Lyon 2**
Relevant coursework: deep learning, probabilistic graphical models, statistical learning theory
- 2021 – 2023 Master's Degree in Intelligent Computer Systems at **USTHB**
- 2018 – 2021 Bachelor's Degree in Mathematics and Computer Science at **USTHB**
(ranked 6th/234)
- 2018 Scientific Baccalaureate at **Diplomatic City High School** - 17.47/20
(ranked 2nd/180)

PROFESSIONAL EXPERIENCE

PhD Researcher in Artificial Intelligence **Oct 2024 – Present**
CentraleSupélec, CentraleSupélec & University of Turin (Cotutelle)

- Developed **PH-VAE**, a generative model for heavy-tailed data combining Phase-Type distributions with Variational Autoencoders; submitted to **ICML 2026**.
- Architected **phdist**, an Open Source Python library for Phase-Type distributions in DeepLearning

Teaching Assistant – Python Programming **Oct 2024 – Present**
CentraleSupélec (Paris-Saclay)

- Taught Python programming to engineering students across two academic years as part of the Coding Weeks program.
- Mentored students through project development, providing debugging support and code review sessions.

Data Scientist **Sep 2023 – Aug 2024**
KilowattSol

- Created models to forecast and optimize soiling ratios and cleaning schedules.

- Facilitated communication and collaboration across R&D, operations, and engineering teams.
- Designed an AI-driven planning tool for PV plant cleaning optimization.
- Provided engineers with Python packages to support data science initiatives.

CONFERENCE & EDITORIAL ACTIVITIES

Organizing & Committee Roles

- Organizing Committee Member, Petri Nets 2025 (Paris)
- Committee Member, International Conference on Computing, Communication and Electrical Engineering (ICCCEE), 2026

Peer Review Activities

- Reviewer, International Conference on Machine Learning (**ICML 2026**)
- Reviewer, Conference on Neural Information Processing Systems (**NeurIPS 2026**)
- Reviewer, Explainable Artificial Intelligence (**XAI 2026**)

SELECTED PUBLICATIONS

- [5] **Ziani, A.**, Horváth, A., & Ballarini, P. (2025). *Approximating heavy-tailed distributions with a mixture of Bernstein phase-type and hyperexponential models*. arXiv:2510.26524.
- [4] Moulai, H., & **Ziani, A.** (2023). *Mamdani fuzzy logic and time of arrival method for partial discharges localization in power transformers*. SSRN. <https://doi.org/10.2139/ssrn.4684593>
- [3] **Ziani, A.**, Yakoubi, O. (2022). *Machine Learning with CBC Test for Early Response Prediction to Neoadjuvant Chemotherapy*. MOAD'22: International Seminar on Decision Support, Methods and Tools.
- [2] **Ziani, A.**, Moulai, H. (2022). *Early Diagnosis of Alzheimer's Disease Using a Multi-Kernel SVM Classifier*. CICT'2022.
- [1] **Ziani, A.**, Necir, H., Khelifa, I., Yakoubi, O. (2021). *Development and Comparison of Improved Clustering Algorithms Applied to Numerical and Non-Numerical Data*. CNTA'21.

Technical Keywords

Modeling: Generative AI, Variational Autoencoders (VAE), Probabilistic Modeling, Latent Variable Models, Anomaly Detection, Time-Series Forecasting.

Engineering: Python (Expert), PyTorch, JAX, Docker, Git/GitHub, CI/CD, SQL, Linux/Bash, Unit Testing (Pytest).

Research & Impact: Peer Review (ICML/NeurIPS 2026), Numerical Optimization, Open-source Development, Technical Writing, End-to-End Model Deployment.