KARIM TIT

French national, 27 years old, ⦿ Campus Kirchberg, University of Luxembourg

Postdoctoral Researcher specialized in Safe and Reliable AI

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WORK EXPERIENCE 💼

University of Luxembourg *May 2024 - Ongoing*
Postdoctoral Researcher, supervised by Dr. Maxime Cordy
Working on formal methods and model-checking methods for Deep Learning certification.

Thales Land and Air Systems (LAS) *February 2021 - January 2024*
ML Research Engineer, supervised by Dr. Louis-Marie Traonouez
Worked on the reliability of Deep Neural Networks for cyber-security applications.

KeyQuant *May 2020 - September 2020*
Quantitative research intern, supervised by Dr. Charles Chevalier
Enhanced and implemented [in Python] trend-following trading strategies with machine learning models.

CREST, CNRS *July 2019 - September 2019*
Research intern, supervised by Dr. Anna Simoni
Implemented [in R] and analyzed a new estimator for inverse problems in high dimensional econometrics.

Capital Fund Management & École Polytechnique *March 2019 - July 2019*
Quantitative research intern, supervised by Dr. Michael Benzaquen & Dr. Iacoppo Mastromatteo
Developed a financial market microstructure model for the Chair Econophysics and Complex Systems

EDUCATION 🏛

INRIA & University of Rennes *February 2021- April 2024*
Ph.D. in Computer Science, *supervised by Dr. Teddy Furon & Dr. Mathias Rousset*
Thesis subject : "Reliability of Deep Neural Networks with Rare Event Simulation Algorithms."

Paris-Saclay University (ex Paris-XI) 2019-2020
Masters in Mathematics of Randomness (M2), StatML track *highest distinction, GPA 4.0*
Some relevant courses : Reinforcement Learning, Statistical Learning

ENSAE Paris, Polytechnic Institute Of Paris 2018-2020
Master of Engineering and Data Science (Diplôme d'ingénieur) *highest distinction, GPA 4.0*
Some relevant courses : Deep Learning, Natural Language Processing, C++

Paris Sciences Et Lettres University (ex Paris-IX) 2018-2019
Research Masters in Pure and Applied Mathematics (M2) *highest distinction , GPA 4.0*
Some relevant courses : Stochastic Calculus, Stochastic Control

Sorbonne University (ex Paris-VI) 2016-2018
B.Sc. in Mathematics with minor in Physics (L3), *highest distinction, GPA 4.0*

Lycée Pierre Corneille 2014- 2016
Preparatory classes for the french 'Grandes écoles', focus on Mathematics *with honours, Grade A*

LANGUAGE & TECHNICAL SKILLS ✖

French	Mother tongue
English	C1 level (TOEFL : 104/120)
Programming languages	🐍 (main), R, C++ (secondary)
Python libraries	Numpy, Pandas, PyTorch, TensorFlow, Scikit-learn
Operating systems	🐧, ⊞
Software tools	**git**, 🐳, LaTeX

PUBLICATIONS 📜

Fast Neural Networks Reliability Estimation with Attack-Driven Importance Sampling.
K.T., T. Furon - 40th Conference on Uncertainty in Artificial Intelligence (UAI), Jul 2024, Barcelona, Spain.

Three Bricks to Consolidate Watermarks for Large Language Models.
P. Fernandez, A. Chaffin, K.T., V. Chappelier, T. Furon - IEEE 15th International Workshop on Information Forensics and Security (WIFS), Dec 2023, Nuremberg, Germany.

Gradient-Informed Neural Network Statistical Robustness Estimation.
K.T., T. Furon, M. Rousset- 26th International Conference on Artificial Intelligence and Statistics (AISTATS), Apr 2023, Valencia, Spain.

Efficient Statistical Assessment of Neural Network Corruption Robustness.
K.T., T. Furon, M. Rousset- 35th Conference on Neural Information Processing Systems (NeurIPS), Dec 2021, Sydney (virtual), Australia.

Évaluation statistique efficace de la robustesse de classifieurs (In French).
K.T., T. Furon, M. Rousset, L.-M. Traonouez - Conference on Artificial Intelligence for Defense (CAID), DGNUM, Nov 2021, Rennes, France.

TEACHING 🖥

École Polytechnique   October 2019- January 2020
Tutorials for undergrad students covering advanced statistics and measure theory (45h in total).

ACADEMIC AWARDS 🏅

Scholarship for academic excellence, 'Sophie Germain'   2019-2020
Masters Scholarship awarded by the Fondation Mathématiques Jacques Hadamard (FMJH)

Scholarship for academic excellence, 'PGSM'   2018-2019
Masters Scholarship awarded by the Paris Graduate School of Mathematics

NON-ACADEMIC INTERESTS 🎸

Music : Guitar & Piano
Sports : Calisthenics & Running
Travelling : Armenia-Belgium-England-Germany-Georgia-Morocco-Portugal-Tunisia-Turkey-Spain