THIERRY MOUDIKI PhD

Machine Learning ● Actuarial Science ● Quantitative Finance

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Actuary with 10 years of experience and Senior Data Scientist. Founder of **Techtonique LLC** (selected for **Microsoft for Startups in 2024**). PhD from Université Lyon 1. Creator of R/Python open-source packages with **1M+ downloads**. Reviewer for NeurIPS and ICLR workshops.

PROFESSIONAL EXPERIENCE

Founder & Analytics Professional Sept. 2019 – Present
Techtonique LLC

R&D in statistical ML, simulation and optimization. Techtonique web app for data-driven decision-making. Open-source packages with 1M+ downloads. Selected for the **Microsoft for Startups** program in 2024. See https://github.com/Techtonique.

Tutor Sept. 2023 – June 2024
Université Paris Dauphine – PSL

Supervised MSc actuarial thesis on Random Vector Functional Link networks as Economic Scenario Generators (awarded by the French Institute of Actuaries).

Lecturer – Data Analysis Sept. 2023 – Dec. 2023
ICN Business School

Statistical methods for MSc final-year students (Greater Paris area).

Lecturer – Numerical Simulation Sept. 2022 – Sept. 2023
Université Paris-Dauphine / Tunis

Monte Carlo methods, stochastic processes, computational techniques in finance and insurance.

Postdoctoral Researcher Sept. 2018 – Sept. 2019
Université Claude Bernard Lyon 1

Research on excess death rates in insured populations; survival analysis.

Actuary – Economic Capital July 2015 – July 2017
Aviva

Life actuarial economic capital modeling and risk assessment.

Non-Life Reserving Actuary Apr. 2015 – July 2015
Allianz

Technical reserves calculation and validation for non-life insurance portfolios.

Actuarial Consultant Sept. 2011 – Feb. 2015
Optimind Winter

Actuarial consulting across various insurance and financial projects. Key clients: Allianz France (QRT Pillar 3 Solvency II reporting tool project) and BNP Paribas Cardif (structured products documentation for the Solvency II Internal Model)

Actuarial Consultant Jan. 2010 – Sept. 2011
Premium Consulting

Conducted actuarial valuation under IAS 19 for employee benefit obligations + Developed a risk mapping framework for retirement savings schemes at AXA France Vie

Risk Capital Modeling Apr. 2008 – Sept. 2009
Allianz Investment Management

Risk capital modeling for investment management.
See https://thierrymoudiki.github.io/blog/2025/09/16/r/python/revisiting-equity-scr

EDUCATION

PhD – Actuarial Science 2015 – 2018
ISFA, Université Lyon 1

Interest Rates Modeling for Insurance: Interpolation, Extrapolation and Forecasting

MSc – Actuarial Science 2008 – 2009
ISFA, Université Lyon 1

MSc Research – Actuarial & Financial Sciences 2007 – 2008
École Centrale de Lyon

MEng – Financial Engineering 2005 – 2008
ENSIMAG, Grenoble

SKILLS

Languages & Tools: Python, R, SQL, VBA, Excel, Apache Spark

Expertise: Machine Learning ● Time Series Forecasting ● Actuarial Science ● Quantitative Finance ● Financial Risk ● Climate Risk ● Numerical Optimization

DISTINCTIONS & AFFILIATIONS

⋆ **Reviewer** – NeurIPS Workshop 2025, ICLR Workshop 2026

⋆ **Microsoft for Startups** – Techtonique LLC selected, 2024

⋆ Associate Member – French Institute of Actuaries (2012–2017, 2021)

⋆ Member – Société Française de Statistique (2019 and 2020)

SELECTED PUBLICATIONS & PRESENTATIONS

· **Conformal Predictive Simulations for Univariate Time Series** – *PMLR 266*, 2025

· **Multiple time series forecasting using quasi-randomized Functional Link Neural Networks** – *Risks 6(1)*, 2018

· **Economic scenario generators** – *Modelling in Life Insurance*, Springer, 2016

· **Sensitivity of a life annuity to yield curve extrapolation** – *Bull. Français d'actuariat 14(27)*, 2014

· See Google Scholar Profile

· Presented at the International Symposium on Forecasting 2024, the 18th Financial Risks International Forum 2025 at Institut Louis Bachelier, Risk 2026 organisé par le R consortium

· See my presentations

CERTIFICATIONS

Deep Learning Specialization (3 courses) – Coursera, 2023
Dev Bootcamp Wall Street NYC (full-stack web development + SQL) – 2017
Introduction to Python for Data Science – edX, 2017
Introduction to Big Data with Apache Spark – edX, 2015