Xiaodong Yang

PhD Candidate in Banking & Finance

(updated on May 18, 2026)

CONTACT INFORMATION

UCD Michael Smurfit Graduate Business School

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ACADEMIC APPOINTMENT

Doctoral Researcher and Teaching Assistant, University College Dublin — 2023-

EDUCATION

University College Dublin, Ireland — 2023-
PhD in Banking and Finance, UCD Michael Smurfit Graduate Business School
Thesis: *Essays on Option-Implied Information, Tail Risk, and Density Forecasting*
Supervisors: Dr Conall O'Sullivan and Dr Richard Magee

University College Dublin, Ireland — 2021-2022
M.Sc. Quantitative Finance, UCD Michael Smurfit Graduate Business School

RESEARCH INTERESTS

Option-implied information; risk-neutral and physical density recovery; tail risk; density forecasting; derivatives pricing; VaR and Expected Shortfall; empirical asset pricing; financial risk management.

WORKING PAPERS AND RESEARCH PROJECTS

"Option-Implied Left-Tail Index and Return Predictability"
Working paper. Develops an option-implied left-tail index using model-free central CDF information and GEV tail extensions to measure downside market risk.

"Option-Implied Density Forecasting and Market Risk Evaluation"
Work in progress. Compares alternative risk-neutral density recovery methods and evaluates physical predictive densities using log score, CRPS, PIT calibration, and VaR/ES tests.

"Sector ETF Option-Implied Distributions and Tail Risk"
Planned project. Extends index-option density and tail-risk methods to sector ETF options, with attention to de-Americanization and dividend timing.

RESEARCH AND TEACHING EXPERIENCE

Research Assistant, UCD Michael Smurfit Graduate Business School — 2023-
OptionMetrics data extraction, option-chain cleaning, maturity selection, implied-volatility checks, risk-neutral density recovery, tail extrapolation, and forecast evaluation.

Teaching Assistant and Tutor, University College Dublin — 2023-
Supported finance and quantitative-finance teaching, including financial economics, derivative securities, numerical methods, Monte Carlo simulation, and risk management.

PROFESSIONAL EXPERIENCE

Financial Settlement Specialist, Aspiegel / Huawei Ireland 2023
Supported financial settlement, reconciliation, monthly finance coordination, and internal-control processes for Huawei digital service business lines in Europe.

CERTIFICATIONS AND RECOGNITION

Certificate in Quantitative Finance (CQF); Financial Risk Manager (FRM); Certified Management Accountant (CMA).
Selected for the UCD Smurfit–Yale School of Management Security Analysis and Valuation module.

SELECTED TECHNICAL PROJECTS

"Quantitative Finance Pricing and Risk Lab"
Python/GitHub project covering option pricing, Monte Carlo simulation, finite-difference methods, Greeks, density recovery, and model comparison.

"BibFlow: Research Reference Workflow Tool"
Built a Streamlit-based research workflow tool for DOI metadata retrieval, BibTeX/RIS/HTML input parsing, duplicate checking, reference quality reporting, and export-ready BibTeX cleaning.

"SPY Direction Forecasting with Machine Learning"
Built an LSTM-based forecasting pipeline with technical indicators, Boruta feature selection, clustering, and simple trading-rule evaluation.

TECHNICAL SKILLS

Programming: Python, SQL, MATLAB, R, Julia, LaTeX, Git/GitHub; working knowledge of C++.
Quantitative finance: Derivatives pricing, stochastic calculus, Monte Carlo simulation, implied volatility, density recovery, tail-risk modelling, VaR/ES, and forecast evaluation.
Python stack: pandas, NumPy, SciPy, scikit-learn, statsmodels, matplotlib, TensorFlow/Keras, Jupyter.

LANGUAGES AND INTERESTS

Mandarin Chinese (native); English (professional working proficiency).
Interests include football analytics, quantitative betting research, GitHub-based research communication, boxing, gym training, and Travelling.