Academic Resume

John Robin Inston M.Sc.

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Professional Profile

Third year PhD student in the Department of Statistics and Applied Probability at the University of California Santa Barbara. Graduate of Lancaster University with a MSc in Quantitative Finance and a BSc in Mathematics with Statistics.

Research Interests

My research interests are orientated broadly towards financial mathematics, environmental science and computational statistics with a specific focus on the stochastic management of energy markets and natural resources. Currently, I am conducting research into the multi-period stochastic mangement of California ground water resources under the supervision of Dr Michael Ludkovski.

Education

2022 - Present **PhD Statistics and Applied Probability**
UC Santa Barbara

Supervisor: Dr Michael Ludkovski (September 2024 - Present)

Topics Studied: (1) Probability Theory, (2) Statistical Theory, (3) Machine Learning, (4) Energy Finance, (5) Financial Models, (6) Advanced Time Series Methods, (7) Advanced Statistical Methods, (8) Bayesian Analysis, (9) High-Frequency Trading (10) Blockastics.

2020 - 2021 **MSc Quantitative Finance - Distinction (Class Rank: 1st)**
Lancaster University

Supervisors: Dr George Wang (Lancaster University), Professor Ian D'Souza (NYU Stern)

Dissertation Title: Measuring and Forecasting Mutual Fund Survival Capacity using Machine Learning Algorithms. *(Dissertation Result: 86%)*

Topics Studied: (1) Foundations in Financial Markets, (2) Derivatives Pricing, (3) Financial Econometrics, (4) Market Risk Forecasting and Control, (5) Stochastic Calculus for Finance, (6) Financial Stochastic Processes, (7) Statistical Methods for Financial and Economic Applications, (8) Assessing Financial Risk: Extreme Value Methods, (9) Spreadsheet Modelling for Quantitative Finance and (10) Forecasting.

2013 - 2018 **BSc Mathematics with Statistics - First Class Honours**
Lancaster University

Topics Studied: (1) Metric Spaces, (2) Differential Equations, (3) Combinatorics, (4) Likelihood Inference, (5) Bayesian Inference, (6) Statistical Modelling, (7) Time Series Analysis, (8) Real Analysis, (9) Complex Analysis, (10) Linear Algebra, (11) Groups and Rings, (12) Probability and (13) Statistics.

Working Papers

1. Measuring and Forecasting Mutual Fund Survivial Capacity using Machine Learning Algorithms, with Dr George Wang (Lancaster University Management School) and Ian D'Souza (NYU Stern).

Awards

- **Award for Best Academic Performance 2020/21**

  Awarded in recognition of exceptional academic performance in obtaining the highest GPA on the MSc Quantitative Finance programme at Lancaster University in the 2020/21 academic year.

- **Award for Best Dissertation Results 2020/21**

  Awarded in recognition of obtaining the highest dissertation results on the MSc Quantitative Finance programme at Lancaster University in the 2020/21 academic year.

- **Lancaster Gold Award**

  Awarded in recognition of skills obtained in activities outside of academia whilst at university. These include: (1) Digital Skills Certificate, (2) Charity Work, (3) Work Experience, and (4) Student Academic Representative.

Projects

1. Markov Chain Monte Carlo for Stochastic Volatility Models.
   Author: J.R. Inston, Supervisor: Dr A. Franks, Topic: Bayesian Inference, Date: March 21, 2024, Programming Language: R.
2. Midas Regression on Air-Quality in California.
   Author: J.R. Inston, Lauren Hughes, Supervisor: Dr G. Peters, Topic: Advanced Time Series Analysis, Date: June 14, 2023, Programming Language: R.
3. Implementing the Black-Scholes and Vasicek models to determine the price of European call options on stock and bonds respectively.
   Author: J.R. Inston, Supervisor: Dr A. Khaleghi, Topic: Stochastic Processes in Finance, Date: November 30, 2020, Programming Language: R.
4. Comparing the performance of the ARMA-GARCH and HAR-RV models in forecasting the volatility of high-frequency stock trade-and-quote data.
   Authors: J.R. Inston, T.H.K. Cheng, J. Weng, A. Alao, Z. Xu, Supervisors: Dr S. Nolte, Dr I. Nolte, Topic: Financial Econometrics, Date: March 16, 2021, Programming Language: MATLAB.

5. Calculating the Value-at-Risk (VaR) of the S&P 100 using Generalised Autoregressive Conditional Heteroscedasticity (GARCH) models.
   Author: J.R. Inston, Supervisor: Dr S. Grünewalder, Topic: Statistical Methods for Financial and Economic Applications, Date: December 18, 2020, Programming Language: R.
6. Valuing Existing Off-Market Swaps.
   Authors: J.R. Inston, A. Alao, T.H.K. Cheng, Z. Xu, M. Ge, Supervisors: Dr T. Ho, Dr J. Huan, Topic: Derivatives Pricing, Date: April 26, 2021.
7. Calculating Value-at-Risk and Expected Shortfall (ES) using the fitted Generalised Pareto Distribution and the modelling of non-normal GARCH model residuals.
   Author: J.R. Inston, Supervisors: C. Lee, Z. Varty, Topic: Assessing Financial Risk: Extreme Value Methods, Date: April 17, 2021, Programming Language: R.
8. Modelling using exponential smoothing, ARIMA, and time series regression models.
   Author: J.R. Inston, Supervisor: Dr S.F. Crone, Topic: Forecasting, Date: April 22, 2021, Programming Language: R.

Technical Skills

- Python - *Highly Proficient*
- R - *Highly Proficient*
- Markdown / LaTeX / Technical Writing - *Highly Proficient*
- SQL - *Highly Proficient*
- MATLAB - *Proficient*
- SAS - *Proficient*

Teaching Experience

Teaching Associate

- PSTAT10 Data Science Principles *(Summer 2024)*

Teaching Assistant

- PSTAT174/274 Time Series Analysis *(Fall 2024)*
- PSTAT115 Bayesian Inference *(Summer 2024)*
- PSTAT175 Survival Analysis *(Spring 2024)*
- PSTAT174/274 Time Series Analysis *(Winter 2024)*
- PSTAT8 Introduction to Mathematical Proof *(Fall 2023)*
- PSTAT5LS Statistical Life Sciences *(Summer 2023)*
- PSTAT5LS Statistical Life Sciences (Spring 2023)
- PSTAT174/274 Time Series Analysis *(Winter 2023)*

- PSTAT120C Probability and Statistics *(Winter 2023)*
- PSTAT5A Understanding Data *(Fall 2022)*

Employment

2022 - *Present* **Teaching Assistant / Teaching Associate**
UC Santa Barbara

Description: Teaching statistics and applied probability courses with responsibilities including class management and scheduling, material preparation, lecturing and holding sections.

2021 - 2022 **Reasearch Assistant**
Lancaster University

Description: Researching the use of Kalman Filtering to estimate the natural rate of interest for world nations under the supervision of Dr George Wang at Lancaster University Management School.

2018 - 2022 **Online Mathematics & Statistics Tutor**
MyTutor

Description: Online mathematics and statistics tutor on MyTutor, the largest online tutoring platform in the UK.

2019 - 2020 **Tax Advisor**
Forbes Dawson

Description: Full-time work as a trainee tax advisor at Forbes Dawson, a specialist firm of tax advisors and accountants in Altrincham, England.

Volunteering

2020 - 2021 **Academic Representative**
Lancaster University

Description: Unpaid work as the elected academic representative of the quantitative finance students.

2019 - 2020 **Volunteer Ranger**
National Trust Marsden Estate

Description: Worked weekends as a volunteer ranger at the National Trust's estate at Marsden Moor, a large expanse of moorland in the South Pennines, England.

2019 - 2020 **Fundraiser**
Whale & Dolphin Conservation

Description: Fundraising and volunteering for the Whale & Dolphin Conservation.

For more information regaring my qualifications and my project work please visit my website at https://www.johnrobininston.com. (currently under maintenance).