

# PROF. DR. GARETH W. PETERS

(YAS-RSE, FIOR, SIRM, FRSS, FIMA, CStat-RSS, CMath-FIMA, Elected ISI)

## CONTACT INFORMATION

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### **Prof. Dr. Gareth William Peters**

Janet and Ian Duncan Endowed Chair Professor of Actuarial Science

Chair Prof. of Statistics for Risk and Insurance

Department of Statistics and Applied Probability,

University of California Santa Barbara,

California, USA

**Ph.:** (+44) 020 7679 1238

**Email:** [garethpeters@ucsb.edu](mailto:garethpeters@ucsb.edu)

**Webpage:** <https://www.qrslab.com/>

## CURRENT AFFILIATIONS

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2012+ Academic Member of **UK PhD Center in Financial Computing**, University College London.

2012+ Invited Professor in **Institute of Statistical Mathematics**, Tokyo, Japan.

2012+ Affiliated Member of **Oxford-Man Institute**, Oxford University.

2014+ Affiliated Member of **Systemic Risk Center**, London School of Economics.

2016+ Academic Member of **UCL Center for Blockchain Technology**, University College London.

2017+ Affiliated Member of **Department of Business Analytics**, Business School, University of Sydney, Australia.

2017+ Affiliated Prof of **Department of Statistics**, University of New South Wales (UNSW).

2018+ Honorary Professor **Department of Statistics**, University of Sydney, Australia.

2018+ Honorary Professor **Department Actuarial Mathematics**, Macquarie University, Australia.

2021+ Honorary Visiting Professor **Department Actuarial Mathematics and Statistics**, Heriot-Watt University, Scotland.

## FORMER AFFILIATIONS AND VISITING POSITIONS

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2018-2021 Academic Director of Scottish Financial Risk Academy. **Scottish Financial Risk Academy**

2017-2019 Group leader of Sound Practice Guidance Series in Operational Risk practice **Institute of Operational Risk**.

2011-2021 Co-founder of **Quantitative Risk Solution Laboratory**, Heriot-Watt University, Edinburgh (previously University College London 2011-2018).

2018-2020 Selected Member of Bond Review Working Party (Knowledge Exchange Sub-Group) UK Mathematical Sciences.

2015-2017 Affiliated Prof. **Institution of Theoretical and Applied Geophysics**, Peking University, Beijing, China.

2010-2017 Adjunct Scientist: **Mathematics, Informatics and Statistics** group in Commonwealth Scientific and Industrial Research Organization.

2012-2017 Principle Investigator in **Center for Computational Statistics and Machine Learning**, University College London.

2014-2017 Associate Lecturer of **Department of Statistics** , University of New South Wales (UNSW).

2017-2018 Invited Nachdiploma Professor of **ETH Department of Mathematics** Jointly with Swiss Finance Institute.

## ELECTED MEMBERSHIPS AND FELLOWSHIPS

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2015+ Elected Fellow of Institute of Operational Risk (FIOR)

2018-2022 Elected Young Academy of Scotland - Royal Society of Edinburgh (YAS-RSE) **Royal Society of Edinburgh (RSE)**, Scotland, UK.

2016+ Member of the London Mathematical Society, UK.

2018+ Member of the Edinburgh Mathematical Society, UK.

2019+ Elected Specialist Institute of Risk Management (SIRM)

2018+ Fellow of Royal Statistical Society (FRSS) and Chartered Statistician (CStat-RSS)

2020+ Fellow of Institute of Mathematics and Applications (FIMA) and Chartered Mathematician (CMath-FIMA)

2021+ Elected Member International Statistical Institute. **ISI**

2020+ Elected Associate Editor of Annals of Actuarial Science, Insitute and Faculty of Actuaries IFoA, Cambridge University Press

2021+ Elected Member Institute and Faculty of Actuaries IFoA General Insurance Machine Learning in Reserving Working Party

2021+ Member Institute and Faculty of Actuaries IFoA Sustainability Board

2021+ Member Institute and Faculty of Actuaries IFoA Statistical Learning in Actuarial Applications Working Party

2021+ Member American Institute of Risk and Insurance (ARIA)

## RESEARCH PUBLICATION SUMMARY

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Total Scholarly Books (Author)	2
Total Scholarly Books (Author-in prep for 2020)	3
Total Scholarly Books (Editor + contributor)	3
Total Scholarly Book Chapters	9
Total Peer Reviewed Journal Papers Accepted	103
Total Peer Reviewed Conference Papers Accepted	45
Total Current Journal Papers in Review	25

**NOTE:** *co-edited book for MCQMC2014 - Springer official count of chapter downloads - classified as a fast moving text - 2015 with 16,076 chapter downloads, 2014 with 17,309 chapter downloads and 2013 with 1,231 chapter downloads. Listed in top 10% of downloaded authors of all time on Social Science Research Network (SSRN).*

## RESEARCH SUPERVISION SUMMARY

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Total Postdoc supervised & under supervision	6
Total PhD students supervised (completed)	22
Total PhD students (under supervision)	9
Masters - 1 year research projects supervised	50+
Honors - 1 year research projects supervised	1

## EDUCATION

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### **Ph.D. in Statistics (by publication) - University of NSW**, Australia

Statistics and Mathematics Department(2006 - December 2009)

Thesis: Topics in trans-dimensional samplers and likelihood free inference.

Advisors: Dr.S.A. Sisson, Dr.Y. Fan [UNSW], Dr.P. Shevchenko [CSIRO]

Scholarships: APA, CSIRO Fellowship (top-up)

Awards: J.B.Douglas Award Statistical Society of Australia; (nominated - short listed) International Society of Bayesian Analysis (ISBA) Savage Award.

### **M.Sc. (by research) - Cambridge University**, Cambridge, England

Statistical Signal Processing Group - Engineering, 2003 to 2005

Thesis: Sequential Monte Carlo Samplers.

Advisor:Prof. Araud Doucet [Cambridge]

Scholarships: Cambridge Commonwealth Trust and Caulfield.

### **B.Eng. 1st Class Hons. - The University of Melbourne**, Australia

Electrical and Communications Engineering, June 1998 to 2003

**Major:** Signal Processing, Control, Communications; **Minor:**Photonics

### **B.Sc. (Deans Hons.) - The University of Melbourne**, Australia

Science: Mathematics and Physics Departments, 1998 to 2003

**Major:** Mathematics - applied and financial; **Minor:** Physics

### **B.Sc. (Science Scholar - Sir John Monash Scholar) - Monash University**, Australia

Science: Mathematics and Physics Departments, 1997 to 1998

Astrophysics and mathematics (transferred to Melbourne University)

### **V.C.E. Melbourne High School**, Melbourne, Australia

*Tertiary Entrance Rank: 98.5%*

## EXPERIENCE

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Department Statistics and Applied Probability,  
**University of California Santa Barbara**, California, USA.(2021+)

- Janet and Ian Duncan Endowed Chair Professor of Actuarial Sciences
- Chair Prof. of Statistics in Risk and Insurance (Tenured)
- Director fairAI Future AI Research for Actuarial Intelligence

ResilientML (Australia) (2020+)

- Research collaborator.
- Quantitative Analytics Company

Department of Actuarial Mathematics and Statistics,  
**Heriot-Watt University**, Edinburgh, Scotland, UK.(2017-2021)

- Chair Prof. of Statistics in Risk and Insurance (Tenured)
- Leader of Quantitative Risk Solutions Laboratory (QRSLab)
- Leader of the Financial Risk and Insurance Research Theme

Scottish Financial Risk Academy

- Director 2017-2021
- Comprised of the Scottish Financial Risk Academy Group (Scottish Financial Risk Academy and Scottish Financial Enterprise).

It is a collection of 200+ financial corporations with an executive board steering committee chaired by the President of the Institute and Faculty of Actuaries and comprised of senior executives including CEO of Scottish Financial Enterprise (SFE) and senior executives from major banks, asset managers, insurance firms, fintech start-ups, hedge funds, law firms, audit and accounting as well as academic members from Heriot-Watt University, Edinburgh University, Glasgow University, University College London and ESC Rennes.

Department of Statistical Sciences,  
**University College London**.(2012-2017)

- Lecturer in Statistics (Tenured)
- Founder of Quantitative Risk Solutions Laboratory (QRSLab)
- Leader of the Financial Risk and Insurance Research Theme

Quantitative Risk Solutions Ltd. (London, UK) (2015-2020)

- Founder and Executive Director
- Quantitative Analytics Company

Rimatec Ltd. (London, UK) (2016-2018)

- Non-Executive Director

- Head of Research
- Regulatory Reporting Company

Department of Mathematics and Statistics,  
**University of NSW**, Sydney, Australia. (2009-2012)

- Lecturer in Statistics (Tenured)
- Founder of Quantitative Risk Solutions Laboratory (QRSLab)
- Leader of the Financial Risk and Insurance Research Theme

Boronia Managed Funds, Sydney, Australia. (2007-2012)

- Quantitative Researcher for Algorithmic Trading Commodities
- Research consultant

Commonwealth Bank of Australia, Sydney, Australia. (2005-2007)

- Quantitative Analyst - Risk Management
- Basel II Operational Risk Team

## AWARDS AND HONORS

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Standout paper of the year for the 2017 Operational Risk awards.

**(Awarded Risk Journal Paper of Year in Operational Risk)**

“Should the advanced measurement approach be replaced with the standardized measurement approach for operational risk?”

Nachdiplom Lecture Series Visiting Prof. in ETH Department of Mathematics

**(Awarded)** Nachdiplom Lecture Series by ETH Department of Mathematics and Swiss Finance Institute (2017) - 5 month lecture series and visiting position in ETH Zurich.

International Society of Bayesian Analysis (ISBA)

**(Nominated)** Savage Award (2010).

Statistical Society of Australia

**J.B. Douglas Award Winner**, for excellence in postgraduate research in Statistics or Econometrics, 2008.

University of New South Wales

**Australian Postgraduate Award Scholarship**, 2006 to 2009.

Statistics and Mathematics Postgraduate Scholarship Top Up, 2006 to 2009.

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

**Ph.D. fellowship and travel bursary**, 2006 to 2009.

University of British Columbia

**Canadian International Postgraduate Research Scholarship**, 2005 to 2006.

University of Cambridge

**Cambridge Commonwealth Fellowship**, 2003 to 2005.

Selwyn College Scholar and Caulfield scholarship 2003 to 2005.

Life time fellow of Cambridge Commonwealth Society.

Swinburne University

Scholarship for study at Parkes Radio Telescope, 2000.

Scholarship to work at Astrophysics and Super-computing Center, 2000.

University of Monash

**Sir John Monash Scholarship**, 1997.

Deans honors award in Science Faculty, 1997.

Commonwealth Bank of Australia

Economic and Capital group spot award, 2007.

Economic and Capital group spot award, 2006.

Group Risk Management service award, 2006.

## **GRANTS - PRINCIPAL INVESTIGATOR AND CHIEF INVESTIGATOR**

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- 2021-2022 Resilient Systems of Knowledge Exchange - grant is part of 20mil GBP grant on Industrial Decarbonisation EPSRC and UKRI, PI - Dr Dimitris Christopoulos (Heriot-Watt) and Co-I's Prof. Gareth W. Peters (Heriot-Watt), Prof H. McGregor (Heriot-Watt), Dr. Matthew Smith (University of Greenwich) - subgrant amount 200,000 GBP
- 2021-2022 Risk in decarbonisation finance - grant is part of 20mil GBP grant on Industrial Decarbonisation EPSRC and UKRI, PI - Prof H. McGregor (Heriot-Watt) and Co-I's Prof. Gareth W. Peters (Heriot-Watt), Dr Dimitris Christopoulos (Heriot-Watt). subgrant amount 200,000 GBP
- 2021 Ocean Foundation Blockchain Grants Round 4 (\$6,500 USD) - Collaborator and PI with ResilientML.
- 2021 Ocean Foundation Blockchain Grants Round 5 (\$7,500 USD) - Collaborator and PI with ResilientML.
- 2021 Ocean Foundation Blockchain Grants Round 8 (\$33,208 USD) - Collaborator and PI with ResilientML.

- 2021 Ocean Foundation Blockchain Grants Round 9 (\$22,764 USD) - Collaborator and PI with ResilientML.
- 2019-2023 - Machine Learning Methods for Credit Risk and Consumer Analytics. Joint lead investigator with Prof. Mike Chantler from Heriot-Watt University. (Royal Bank of Scotland 400,000 GBP).
- 2019-2023 - Machine Learning Methods for Credit Risk and Consumer Analytics. Joint lead investigator with Prof. Mike Chantler from Heriot-Watt University. (Data Laboratory Scotland 75,000 GBP).
- 2020-2022 - Cyber Risk and Cyber Insurance. Joint lead investigator with Prof. Pavel Shevchenko from Maquarie University. (200,000 AUD).
- 2020-2021 - Gaussian Processes for Voice Recognition Systems. Joint lead investigator with Prof. Mike Chantler from Heriot-Watt University. (Data Laboratory Scotland 100,000 GBP).
- 2017-2021 - Australian Research Council large grant on methodological extensions in machine learning methods for insurance and risk modelling. Joint lead investigator with Prof. Matthew Wand from University of Technology Sydney, Australia. (\$450,000 AUD).
- 2017 - ETH Zurich Nachdiploma Professor and Swiss Finance Institute (20,000 GBP)
- 2015 - Highly competitive world tender for ORX Consortium (<https://www.orx.org/Pages/HomePage.aspx>) banking consortium joint project (2 projects awarded world wide - both projects awarded to Dr. Gareth W. Peters and his team of risk specialists for Operational Risk Modelling - Award includes access to 65 worlds biggest banks data bases on Basel II/Basel III loss experiences) - NOTE: *this database is sold commercially to consortium members for millions of pounds* - also provides opportunity to partner in joint working groups with industry for research and practical impact initiatives in modern regulation and banking risk modelling and management best practice.
- 2015-2016 - Research Organization of Information and Systems (ROIS) and The Institute of Statistical Mathematics (ISM) Japan - internal grant to host international workshop \$20,000 USD.
- 2014-2015 - Research Organization of Information and Systems (ROIS) and The Institute of Statistical Mathematics (ISM) Japan- internal grant to host international workshop \$20,000 USD.
- 2013-2014 - Research Organization of Information and Systems (ROIS) and The Institute of Statistical Mathematics (ISM) Japan- grant to host international workshop \$20,000 USD.
- 2012-2013 - UK-ASEAN Knowledge Partnership Mobility Scheme Grant - British High Commission Singapore.
- 2013 - UCL Graduate School Staff Conference Fund
- 2013-2015 - Royal Society International Exchange Grant - 2 years of funding to work with colleagues in Institute of Statistical Mathematics - Japan.
- 2013-2016 - Japan Society for the Promotion of Science - 3 years of funding to work with Prof. Matsui (Institute of Statistical Mathematics, Tokyo), Prof. Takeda (Nagoya University) and Prof. Markov.
- 20Jun2014-31Mar2015 - MEXT “The Cooperation with Mathematics Program.” [Workshop on complex systems modeling and estimation challenges in big data], Japan. Funding agency,: Ministry of Education, Culture, Sports, Science and Technology-Japan(MEXT); length of grant: 20Jun2014-31Mar2015; amount awarded: 697,968yen

## GRANTS - ASSOCIATE INVESTIGATOR

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- 2014-2017 ARC Center of Excellence: Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights, International Associate Investigator - Budget = \$20 million AUD (Prof. Peter Hall, Professors Jan de Gier (UoM), Kerrie Mengersen (QUT) and Louise Ryan (UTS).)
- 2012-2015 Associate Researcher in Theme 1 of National Environmental Research Program (NERP) jointly with Commonwealth Scientific Industrial Research Organisation (CSIRO) - Marine monitoring Hub with Dr. Keith Hayes
- 2013 Associate Researcher in University Lille 1 - Research grant on heavy tailed modelling in Telecommunications with Prof. Laurent Clavier and Prof. Francois Septier.

## DEPARTMENTAL DUTIES AND ACADEMIC DUTIES

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- 2021: University of California Santa Barbara
  - Graduate Admissions Committee
  - Admissions Committee for Actuarial Program
  - Faculty Search Committee
  - Merit Case Reviews PSTAT 2021
  - Upgrade PhD exam review committee 2021
- 2017-2021: Heriot-Watt University
  - Academic Director of the Scottish Financial Risk Academy, Heriot-Watt University (2017-2021).
  - Chair of the Scientific Committee of the Scottish Financial Risk Academy, Heriot-Watt University (2017-2021).
  - Manager of Heriot-Watt actuarial, banking, asset management and financial industry project placements (2017-2021).
  - Course Director for Industry placements and Research projects in the Department of Actuarial Mathematics and Statistics, Heriot-Watt (2018 and 2019)
  - Heriot-Watt University selection and interview panels (lecturer, Associate Professor, Professor levels).
  - Research development panel for Heriot-Watt Actuarial program Malaysia (2018).
  - Actuarial lead on carbon reduction and green finance project grant development panel with UKRI Heriot-Watt (2019+).
  - Heriot-Watt elected member of Young Academy of Scotland, Royal Society of Edinburgh (2018+).
  - Heriot-Watt member of Data Laboratory organizing joint industry Ph.D. projects (2019+).
  - Representative on the Bond Review Working Party (Knowledge Exchange Sub-Group) UK Mathematical Sciences (2019).
- 2012-2017: University College London (UCL)
  - Departmental Timetabling Co-ordinator University College London (2015-2017).



- Member of the Committee of Departmental Computing and Infrastructure Committee University College London (DCIC) since (2014-2017).
  - Set up and act as Theme Lead in University College London Department of Statistics research group - "Financial Risk, Insurance, Econometrics and Stochastic Finance".
  - On 2 interview panels at University College London for new lecturers - mathematics and statistics departments.
  - On 2 interview panels at Heriot-Watt for new lecturers - mathematics and statistics departments.
  - External examiner for 8 different PhD viva exams.
  - Co-supervisor of the Financial Risk Management MSc. program including setting up industry placements for MSc. students (4 students in 2015 jointly with Lloyds banking group).
  - Co-organiser of monthly outreach workshop for banking and risk management NORM - 6-10 banks and regulators attend regular workshop discussion on risk management practice and academic / industry collaboration. The focus was on development of better risk management practices - principally for Operational Risk Management. It was jointly run by myself, Dr. Ariane Chappelle and Prof. Tomaso Aste in University College London (2013-2017).
  - London Graduate School as part of the London Mathematical Society (LMS), I was a lecturer of two year long courses on insurance and risk management for PhD students from participating universities in the LMS.
  - Organizer of 7 international joint University College London and Institute of Statistical Mathematics (Tokyo-Japan) international workshops (25+ speakers each time) for (2013-2018).
- 2010-2012: University of New South Wales
    - Computing Committee
    - Education Committee

## **POSTDOCTORAL RESEARCHERS SUPERVISED: JOINT PRIMARY SUPERVISOR**

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- (to be filled) (2022-2024)  
Center for Networks, Heriot-Watt University  
Green Finance  
Advisors: Prof. Dimitris Christopoulos and Prof. Gareth W. Peters
- Dr. Chih-Yueh Huang (2022-2024)  
Center for Networks, Heriot-Watt University  
Green Finance  
Advisors: Prof. Dimitris Christopoulos and Prof. Gareth W. Peters
- Dr. Ioannis Chalkiadakis (2022-2024)  
Department of Business, Rennes Business School  
News Sentiment, Commodities and Cointegration  
Advisors: Prof. Guillaume Bagnaros and Prof. Gareth W. Peters
- Dr. Ana Fernandez Vidal (2020-2021)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt University, Edinburgh  
Topic Modelling and Natural Language Processing  
Advisors: Prof. Mike Chantler and Prof. Gareth W. Peters

- Dr. Dorota Toczydlowska (2018-2021)  
Statistics Department, University of Technology Sydney  
Robust statistics and time-frequency analysis  
Advisors: Prof. Matthew Wand, Prof. Luise Ryan and Prof. Gareth W. Peters
- Dr. Daisuke Murakame (2015-2017)  
National Institute of Environmental Studies (NIES), Tsukuba, Japan  
Spatial and Temporal Heat Wave Modelling  
Advisors: Prof. Yamagata Y., Prof. Matsui T. and Prof. Gareth W. Peters
- Dr. Malcolm Egan (2016-2017)  
Mathematics, Blaise Pascal, France  
Stable Process Characterizations  
Advisors: Dr. Nourddine Azzaoui, Dr. Arnaud Guillin, Dr. Gareth W. Peters
- Dr. Efstathios Panayi (2015-2016)  
University College London  
Liquidity Resilience Models in Limit Order Books  
Advisors: Dr. Gareth W. Peters and Dr. Tomaso Aste
- Dr. Simon Fung (PhD Actuarial Science) (2015-2017)  
Commonwealth Scientific and Industrial Research Organisation  
Longevity Modelling and Mortality Models;  
Advisors: Dr. Gareth W. Peters and Dr. Pavel Shevchenko

## **PHD STUDENTS SUPERVISED: PRIMARY SUPERVISOR**

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All supervisions included here involved Ph.D. student guidance that included at least fortnightly meetings, research productive supervisions with academic peer reviewed outputs from the joint supervisions. Other guidance or advisory positions are excluded from the list below.

- Dr. Alice Dong (2009-2015)  
Department of Statistics, University of Sydney, Australia  
PhD Topic: Statistical Modelling in Actuarial Science  
PhD Advisors: Prof. Gareth W. Peters and Dr. Jenifer Chan  
(Completed with 3 journal papers and 1 conference paper)
- Dr. Gordana Popovic (2010-2015)  
Department of Statistics, UNSW, Australia  
PhD Topic: Species Modelling and Spatial Maps  
PhD Advisors: Prof. David Warton and Prof. Gareth W. Peters  
Lecturer at University of New South Wales.
- Dr. Shihao Yan (2012-2015)  
Electrical Engineering, UNSW Australia  
PhD Topic: Wireless Vehicular Networks and Signal Processing.  
PhD Advisors: Dr. Robert Malaney, Dr. Gareth W. Peters and Dr. Ido Nevat  
(Completed with 4 journal papers and 4 conference papers)  
Lecturer at Australian National University
- Dr. Efstathios Panayi (2014-2017)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Liquidity Resilience in High Frequency Finance and LOB Models.  
PhD Advisors: Dr. Gareth W. Peters and Dr. Mark Harman  
(Completed with 3 journal papers and 2 conference papers)  
Awarded PhD with No Corrections Required!

- Dr. Wilson Chen (2014-2016)  
Business Analytics, University of Sydney, Australia  
PhD Topic: Econometrics and Risk Management Dynamic Quantile Models.  
PhD Advisors: Dr. Gareth W. Peters and Dr. Richard Gerlach  
(Completed with 3 journal papers and 1 conference paper)  
Awarded J.B. Douglas Price - Australian Statistical Society.  
Research Associate Professor at Institute of Statistical Mathematics.
- Dr. Rodrigo Targino (2012-2016)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Monte Carlo Methods in Risk and Insurance.  
PhD Advisors: Dr. Gareth W. Peters, Dr. Mario Wuthrich and Dr. Pavel Shevchenko  
(Completed with 4 journal papers)  
Now Lecturer in Think Tank in Rio Brazil - FGV  
(FGV is ranked #1 think tank in Latin America and #18 Internationally).
- Dr. Matthew Ames (2012-2016)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Currency and Commodity Modelling.  
PhD Advisors: Dr. Gareth W. Peters, Dr. Guillaume Bagnarossa and Dr. Ioannis Kosmidis  
(Completed with 4 journal papers and 1 conference paper)  
Now Lecturer in Institute of Statistical Mathematics
- Dr. Dorota Toczydlowska (2014-2018)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Machine Learning Developments in Dependency Modelling and Feature Extraction.  
PhD Advisors: Prof. Gareth W. Peters  
(Completed with 4 journal papers and 1 conference paper)  
Now Postdoc in UTS Sydney
- Dr. Kevin Hongxuan Yan (2014-2018)  
Department of Statistics, Sydney University, Australia  
PhD Topic: Generalised linear Gegenbauer long memory models for time series of counts with financial and insurance applications.  
PhD Advisors: Dr. Jennifer Chan and Prof. Gareth W. Peters  
(Completed with 4 journal papers)  
Now Postdoc in Chinese Academy of Science
- Dr. Kylie-Anne Richards (2012-2018)  
Department of Statistics, University of New South Wales, Australia  
PhD Topic: Modelling the Dynamics of the Limit Order Book in Financial Markets.  
PhD Advisors: Prof. William Dunsmui and Prof. Gareth W. Peters  
(Completed with 3 journal papers)  
Now lecturer Business School in University of Technology Sydney UTS
- Dr. Antonio Dalessandro (2013-2018)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Functional Copulas.  
PhD Advisors: Prof. Gareth W. Peters  
(Completed with 4 journal papers)
- Anna Zaremba (2012-2019)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Causality Measures in Multivariate Processes.  
PhD Advisors: Prof. Gareth W. Peters

(Completed with 3 journal papers)

- Maciek Marowka (2015-2019)  
Department of Statistical Sciences, University College London, UK and Imperial College London.  
PhD Topic: Cointegration in State Space Modelling.  
PhD Advisors: Prof. Gareth W. Peters, Dr. Nick Kantas, Dr. Guillaume Bagnarosa  
(Completed with 3 journal papers)
- Marta Campi (2016+)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Non-stationary basis extraction.  
PhD Advisors: Prof. Gareth W. Peters  
(2 journal papers)
- Fabio Dias (2016-2020)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Momentum and Signed Path Dependence.  
PhD Advisors: Prof. Gareth W. Peters  
(3 journal papers)
- Andreas Koukorinis (2013-2020)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Machine learning for market making.  
PhD Advisors: Prof. Gareth W. Peters and Dr. Guido Germano  
(2 journal papers)
- Deyu Ming (2016-2020)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Statistical Models for Strong Ground Motion Simulation.  
PhD Advisors: Dr. Carmine Galasso, Prof. Serge Guillas and Prof. Gareth W. Peters  
(Completed with 2 journal papers)
- Chen Huang (2016-2020)  
Department of Statistical Sciences, University College London, UK  
PhD Topic: Building Damage Models from Earthquake Simulation.  
PhD Advisors: Dr. Carmine Galasso and Prof. Gareth W. Peters  
(Completed with 2 journal papers)
- Ioannis Chalkiadakis (2017+)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt, UK  
PhD Topic: Machine learning for Natural Language Processing.  
PhD Advisors: Prof. Gareth W. Peters and Prof. Mike Chantler  
(3 journal papers)
- Pasin Marupanthorn (2019+)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt, UK  
PhD Topic: Data Combining and Aggregation Methods in Insurance.  
PhD Advisors: Prof. Gareth W. Peters and Dr. Eric Ofosu-hene
- Edward Antonioan (2019+)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt, UK  
PhD Topic: Credit Risk Modelling and Network Regressions.  
PhD Advisors: Prof. Gareth W. Peters and Prof. Mike Chantler
- Cole Van Jaarsveldt (2019+)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt, UK

PhD Topic: Empirical Mode Decomposition and Dynamic Portfolios.

PhD Advisors: Prof. Gareth W. Peters and Prof. Mike Chantler

- Ragnar Levi Gudmundarson (2021+)  
Department of Actuarial Mathematics and Statistics, Heriot-Watt, UK  
PhD Topic: Graphical Inference.  
PhD Advisors: Prof. Gareth W. Peters and Prof. Dimitrios Christopoulos

## PHD STUDENTS SUPERVISED: SECONDARY SUPERVISOR

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- Thi Le Thu Nguyen (2013-2014)  
Department of Engineering, University of Lille, France  
PhD Topic: Signal Processing and Sequential Monte Carlo Samplers.  
PhD Collaborators: Prof. Gareth W. Peters and Dr. Francois Septier  
(Completed with 1 journal papers and 2 conference papers)
- Emmanouli Karimalis (2013-2017)  
Cass Business School, London, UK  
PhD Topic: Risk Management and Stress Testing Yield Curves.  
PhD Collaborators: Prof. Gareth W. Peters and Dr. Ioannis Kosmidis  
(Completed with 3 journal papers)
- Peng-Fei Zhang (2014-2016)  
Department of Sensors, AStar, Singapore  
PhD Topic: Sensor Network Models and Spatial Gaussian Processes.  
PhD Collaborators: Dr. Gareth W. Peters and Dr. Ido Nevat  
(Completed with 4 journal papers and 2 conference papers)
- Jing Yang Koh (2015-2017)  
Sensor Networks Group, AStar, Singapore  
PhD Topic: Network Privacy and Security Stochastic Models.  
PhD Collaborators: Dr. Gareth W. Peters and Dr. Ido Nevat  
(Completed with 3 journal papers and 1 conference paper)
- Suiki Gao (2016-2020)  
Agricultural Crop Insurance and Yield Modelling  
PhD Topic: Agricultural Crop Insurance and Yield Modelling.  
PhD Collaborators: Prof. Guillaume Bagnarosa and Prof. Gareth W. Peters  
(Completed with 2 journal papers and 1 conference paper)
- Romeo Taewo (2020+)  
Université Bretagne Sud, LMBA UMR CNRS 6205  
PhD Topic: Multiperiod decision processes on networks and graphs.  
PhD Collaborators: Prof. Francois Septier, Prof. Gareth W. Peters and Dr. Ido Nevat
- Peilun He (2020+)  
Maquarie University  
PhD Topic: Commodity Modelling.  
PhD Collaborators: Prof. Pavel Shevchenko, Prof. Gareth W. Peters and Prof. Nino Kordzakhia
- Qikun Xiang (2020+)  
NTU Singapore  
PhD Topic: Cyber Risk and Cyber Insurance.  
PhD Collaborators: Dr. Ariel Neufeld, Prof. Gareth W. Peters and Dr. Ido Nevat

- Louis Huang (2020+) University of Sydney, Australia  
PhD Topic: Machine Learning and Time Series Modelling  
PhD Collaborators: Dr. Jennifer Chan and Prof. Gareth W. Peters
- Yusuf Ismalia (2020+) Heriot-Watt University, Scotland  
PhD Topic: Green Bond Dynamics  
PhD Collaborators: Dr. George Tzougas, Prof. Dimitris Christopoulos and Prof. Gareth W. Peters

## ACADEMIC EXPERIENCE: RESEARCH VISITS AND INVITED POSITIONS

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### **Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

June-July 2021 - DELAYED DUE TO COVID CRISIS

Invited researcher to work on statistical methodology for spatial and temporal modelling for insurance

### **Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

June-July 2020 - DELAYED DUE TO COVID CRISIS

Invited researcher to work on statistical methodology for spatial and temporal modelling for insurance

### **Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

June-July 2019

Invited researcher to work on statistical methodology for spatial and temporal modelling for insurance

### **Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

Feb-March 2018

Invited researcher to work on statistical methodology for spatial and temporal modelling for insurance

### **Thamasat University**, Thailand

*Visiting Professor*

Jan 2018

Invited researcher to present lectures on risk and insurance modelling and explore collaborations

### **Mahidol University**, Thailand

*Visiting Professor*

Jan 2018

Invited researcher to present lectures on risk and insurance modelling and explore collaborations

### **Bank of Thailand**, Thailand

*Visiting Professor*

Jan 2018

Invited to present on financial stress testing in the financial stability group.

### **ETH Zurich and Swiss Finance Institute**, Switzerland

*Visiting Professor*

Sept.-Jan 2017-2018

Invited researcher to work on risk and insurance modelling. Created and delivered special Ph.D. course on Machine Learning for Risk and Insurance.

**University of Sydney**, Sydney, Australia.

*Visiting Professor*

July 2017

Invited researcher to work econometrics and time series.

**Hong Kong University of Science and Technology**, Hong Kong

*Visiting Professor*

June 2017

Invited researcher to work econometrics.

**Hitotsubashi University**, Tokyo, Japan

*Visiting Professor*

March-April 2017

Invited researcher to work on Green Finance and Green Bonds.

**Osaka University**, Osaka, Japan

*Visiting Professor*

March-April 2017

Invited researcher to work on statistical methodology for stochastic processes.

**University of Cape Town**, Cape Town, South Africa

*Visiting Professor*

June-July 2016

Invited researcher to work on statistical methodology for mathematical finance.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

July-Oct 2016

Invited researcher to work on statistical methodology for spatial and temporal modelling.

**Department of Statistics, University of Sydney**, Sydney, Australia

*Visiting Professor*

Dec 2015

Invited researcher to work on statistical risk theory and financial mathematics. Financial Mathematics Team Challenge (2 weeks) University of Cape Town, South Africa June 2016.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

July-Oct 2015

Invited researcher to work on statistical methodology for spatial and temporal modelling.

**Financial Modelling Department**, ESC Rennes Business School, France

*Visiting Professor*

June 2015

Invited researcher to work on currency modelling and insurance.

**Department of Mathematics Blaise Pascal University**, Clermont-Ferrand, France

*Visiting Professor*

February 2015

Invited researcher to work on Stable Processes.

**CMIS - Commonwealth Scientific and Industrial Research Organisation**, Sydney, Australia

*Visiting Scientist*

Oct 2014

Invited researcher to work on statistical risk theory and financial mathematics.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

July-Oct 2014

Invited researcher to work on statistical methodology for spatial and temporal modelling.

**Department of Mathematics Blaise Pascal University**, Clermont-Ferrand, France

*Visiting Professor*

June. 2014

Invited researcher to work on Stable Processes.

**A-STAR: I2R**, Singapore

*Invited scientist*

April 2014

Invited researcher to work on Wireless Communications and sensor network spatial modelling.

**Telecom Lille 1**, Lille, France

*Invited lecturer*

March 2014

Invited researcher to work on Wireless Communications, Stable Interference and Sequential Monte Carlo methods.

**Department of Mathematics Blaise Pascal University**, Clermont-Ferrand, France

*Visiting Professor*

January 2014

Invited researcher to work on Stable Processes.

**Department of Computer Science Blaise Pascal University**, Clermont-Ferrand, France

*Visiting Professor*

November 2013

Invited researcher to work on Markov chains and network security.

**Department of Mathematics Blaise Pascal University**, Clermont-Ferrand, France

*Visiting Professor*

October 2013



Invited researcher to work on Stable Processes.

**Department of Statistics Maquarie Univesrity**, Sydney, Australia

*Visiting Scientist*

Sept 2013

Invited researcher to work on multiple optimal stopping time problems.

**CMIS - Commonwealth Scientific and Industrial Research Organisation**, Sydney, Australia

*Visiting Scientist*

Sept 2013

Invited researcher to work on statistical risk theory and financial mathematics.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Visiting Professor*

June-Sept 2013

Invited researcher to work on statistical methodology for spatial and temporal modelling.

**Telecom Lille 1**, Lille, France

*Invited lecturer*

June 2013

Invited researcher to work on Wireless Communications, Stable Interference and Sequential Monte Carlo methods.

**Telecom Lille 1**, Lille, France

*Invited lecturer*

November 2012

Invited researcher to work on Wireless Communications, Stable Interference and Sequential Monte Carlo methods.

**INRIA**, Bordeaux, France

*Invited lecturer*

September 2012

Invited researcher to work on financial risk modelling and Sequential Monte Carlo methods.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Invited lecturer*

June-July 2012

Invited researcher to work on Statistical Signal Processing and Machine Learning Methodology.

**Statistics Department -National University of Singapore**, Singapore

*Invited lecturer*

January-February 2012

Invited researcher to work on statistical modelling of risk and Sequential Monte Carlo.

**Statistics Department - Oxford University**, Oxfordshire, England

*Invited lecturer*

January-February 2012

Invited researcher to work on statistical modelling of risk and Sequential Monte Carlo.

**CNRS - Telecom Lille**, Lille, France

*Invited lecturer*

November-December 2011

Invited researcher to work on statistical modelling of interference in wireless communications.

**INRIA - University of Bordeaux**, Bordeaux, France

*Invited lecturer*

December 2011

Invited researcher to work on financial risk modelling and Sequential Monte Carlo.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Invited lecturer*

December 2011

Invited researcher to present on commodity models.

**Commonwealth Scientific and Industrial Mathematics (CSIRO) - Mathematics, Informatics and Statistics**, Tasmania, Australia

*Visiting Scientist*

February 2010; June 2010 and November 2010 3mnths

Invited to participate in research on population dynamics.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Invited lecturer*

August-September 2010

Invited researcher to participate in non-linear filtering for commodity models.

**Statistical and Applied Mathematics Sciences Institute (SAMSI)**, Durham, NC USA

*Invited Lecturer*

November 2009

Invited researcher to present at transition workshop on Particle Filtering and collaborate with colleagues in Duke Statistics Department.

**Institute of Statistical Mathematics (ISM)**, Tokyo, Japan

*Invited Graduate Student Researcher*

August-September 2009

Invited researcher to participate in non-linear filtering for commodity models.

**Statistical and Applied Mathematics Sciences Institute (SAMSI)**, Durham, NC USA

*Invited Graduate Student Researcher*

September-October 2008

Invited researcher to participate in Particle Filtering workshop.

**ETH University (RiskLab)**, Zurich, Switzerland

*Invited Graduate Student Researcher*

August-September 2008

**Commonwealth Scientific and Industrial Research Organisation (CSIRO)**, Sydney, Australia

*Graduate Student Researcher*

2006,2007,2008,2009

Member of Center for Mathematical and Information Sciences (CMIS). I perform research in statistics and financial modelling.

**University of British Columbia (Statistics)**, Vancouver, BC, Canada

Research Assistant, Science: Statistics Department, 2005

Research focus: non-linear filtering and Sequential Monte Carlo Samplers.

**University of British Columbia (Laboratory of Computational Intelligence (LCI))**, Vancouver, BC, Canada

Research Assistant, Science: Computer Science, 2005

Research focus: game theory and machine learning.

**Universite Paul Sabatier Toulouse III**, Toulouse, France

*Invited Graduate Student Researcher*

April-May 2004

**Astrophysics and Super Computing Centre**, Melbourne, Australia

*Invited Undergraduate Student Researcher*

December 2000 - April 2001

**Plant Sciences and Biotechnology**, Melbourne, Australia

*Invited Student Researcher*

August 1995 - December 1995

## KEY NOTE AND PLENARY SPEAKER INVITATIONS

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7th ASIA International Conference 2021 (Malaysia, 2021) (Declined due to inability to travel).

10th International Workshop on Applied Probability (Athens, Greece, 2020) (delayed due to covid)

Belgium Actuarial Society Machine Learning Lectures (Belgium, 2020).

Yorkshire Actuarial Society and Aviva Actuarial Seminar, Yorkshire (UK 2019).

21st OpRisk Europe Conference Europe, London. (UK 2019) - declined

International Workshop on Stress Test and Risk Management, Ecole-Polytechnique and BNP Paribas France. (Paris, 2019).

Insurance Mathematics and Economics International Conference (Munich, Germany 2019)

Actuary Redefined, Malaysian Actuarial Society (Malaysia 2018).

Machine Learning Summer School in Risk and Insurance, Technical University Vienna (Austria 2018).

R in Insurance Conference (London, UK 2018)

German Actuarial Association Annual Meeting (Berlin, Germany 2018)

International Mathematical Sciences (IMS) workshop invited presentation (Lithuania, 2018).

Bank of Thailand (Bangkok, Thailand 2018)

London-Paris Bachelier Meeting, (London, UK 2017)

Central Banking Conference (Abu Dhabi, UAE 2017)

Swiss Actuarial Association Annual Meeting (Lugano, Switzerland, 2017)

Nomura Bank Invited Red Lecturer (London, UK 2017)

Federal Reserve Operational Risk Group (New York, US 2017)

European Bank of Reconstruction and Development (London, UK 2017)

Bank of Japan, Green Finance 2016

Bank of England (presented to Chief Economist of UK, 2016)

Advanced Statistics Symposium (unable to attend) CMAR, Hobart, Commonwealth Scientific and Industrial Research Organisation, March 2012.

## **PRESENTATIONS AND INVITED TALKS**

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Note: limited presentations due to Covid lockdowns 2020/2021.

Invited Speaker - Society of Actuaries Impact Annual Conference, October 2021

Invited Speaker - University of California Santa Barbara Statistics and Applied Probability Department, April 2020

Invited Speaker - Institute of Statistical Mathematics, Tokyo, Japan, July 2019

Invited Speaker - Mahidol University, Bangkok, Thailand, May 2019

Invited Speaker - Macquarie University, Sydney Australia, April 2019

Invited Speaker - Aviva Insurance and York Actuarial Department, York, UK March 2019

Invited Speaker - 31st International Congress of Actuaries (ICA). German Actuarial Association (DAV) in conjunction with the International Actuarial Association (IAA) will host the Congress from 4 to 8 June 2018

Invited Speaker - Joint 2018 IMS Annual Meeting / 12th International Vilnius Conference. Probability Theory & Mathematical Statistics July 2 - 6, 2018 in Vilnius, Lithuania. Invited paper session speaker

Invited Speaker - Computational Financial Econometrics 2017 Dec. International Conference on Financial Econometrics and Statistics. Invited Special Session Organiser and Presenter. London, UK.

Invited Speaker - Operational Risk: OpRisk North America. The premier industry and regulator conference in Operational Risk Modelling and Regulation. New York – Workshop Presenter. New York, March, 2017.

Invited Speaker - Big Data, Fintech and Blockchain. The Second International Conference on Data Mining and Big Data. - Special Session Presenter in “Big data and Financial Regulation”, Fukuoka, Japan, 2017.

Invited Speaker - Spatial Temporal Modelling 2017, 5th International Workshop on Spatial Temporal Modelling. Co-Organisor and Presenter. Tokyo, Japan.

Invited Speaker - Computational Financial Econometrics. 1st International Conference on Econometrics and Statistics. Invited Special Session Organisor and Presenter. 2017 June Hong Kong University of Science and Technology

Invited Speaker - 61st World Statistics Congress ISI. Invited Special Session Presenter. Marakeech, Morocco, 2017 June.

Invited Speaker - Workshop: Block Chain and the Constitution of a new Financial Order. Invited special session speaker - UCL Law 2017

Invited Speaker - Nippon Institute of Technology, Saitima, Japan, July 2016.

Invited Speaker - Jaffe Workshop on Economics and Agents, Tokyo, Japan, July 2016.

Invited Speaker - Ritsumeiken University, Kyoto, Japan, July 2016.

Invited Speaker - National Institute of Environmental Studies, Tskuba, Japan, July 2016.

Invited Speaker - Institute of Statistical Mathematics, Tokyo, Japan, July 2016.

Invited Speaker - Special Industry workshop Rand Bank, Johannesburg, South Africa, June 2016.

Invited Speaker - University of Cape Town - ETH Zurich Workshop on Financial Mathematics June 2016.

Invited Speaker - International UCL-Tsinghua Workshop on Catastrophe modelling and Financial Risk, UCL, June 2016.

Invited Speaker - Invited Joint Presentation - Bank of England Research group April, 2016.

Invited Speaker - OpRisk Europe 2016 International Conference on Operational Risk in Banking (<http://www.opriskeurope.com/>) June 2016.

Invited Speaker -Particle Methods in Risk and Insurance, Henri Poincare Institute Workshop, Paris, March 2016.

Invited Speaker - Oprisk Europe, Global Risk Management Conference, day long invited lecture series on Operational Risk Modelling and Regulation.

Invited Speaker -NORM, Operational Risk Practitioners Seminar – UCL London

Invited Speaker -The 20th Workshop on Economic Science with Heterogeneous Interacting Agents Sophia Antipolis, SKEMA Business School, 21–23 May 2015

Invited Speaker - University of Warwick, Statistics Department, Seminar Series.2015

Invited Speaker -University of Rennes, ESC, Rennes, France, Seminar Series.2015

Invited Speaker -CSIRO Australia, Sydney, Seminar Series.2015

Invited Speaker - NORM, Operational Risk Practitioners Seminar – NOMURA Bank London 2015

Invited Speaker -Oxford University Statistics Department, Oxford, UK. 2015

Invited Speaker - Computational Financial Econometrics, London, UK 12/12/2015.

Invited Speaker - Statistics Department, University of Sydney, Australia, Dec 2015.

Invited Speaker - Institute of Statistical Mathematics, Tokyo, Japan, July 2015.

Invited Speaker - Statistics Workshop - Gregynog, Wales April 2015.

Invited Speaker - ORIC International Insurance Consortium (CEO workshops), London, UK May - 2 day workshop 2015.

Invited Speaker - Mitsubishi UFJ Bank, London - NORM risk management meeting, London, UK May 2015.

Invited Speaker - Oxford Mann Institute, Oxford University, Oxford, UK May 2015.

Invited Speaker - Statistics Department, Warwick University, Warwick, UK May 2015.

Invited Speaker - ORX Consortium International Bank webinar presenter (65 banks globally dialed in to discuss and listen to the presentation), London, UK, March 2015.

Invited Speaker - Citibank, London - NORM risk management meeting, Canary Wharf, London, UK Jan 2015.

Invited Speaker - Computational Financial Econometrics, Pisa, Italy 05/12/2014.

Invited Speaker - Tsinghua University, Mathematics, Beijing, China 05/11/2014.

Invited Speaker - PKU, Peking University Mathematics Department, Beijing, China 04/11/2014.

Invited Speaker - ORX- Operational Risk and Insurance Banking Consortium Industry Presentation 16/10/2014.

Invited Speaker - Macquarie University, Actuarial and Statistics, Australia 20/10/2014.

Invited Speaker - University of Technology Sydney, Statistics, Australia 16/10/2014.

Invited Speaker - University of Sydney, Business Analytics and Economics, Australia 09/10/2014.

Invited Speaker - Seoul National University, Mathematics and Insurance group, Korea 01/10/2014.

Invited Speaker - Institute of Statistical Mathematics, Tokyo, Japan 26/7/2014.

Invited Speaker - Royal Statistical Society, London 24/2/2014.

Invited Speaker - Department of Statistics and Actuarial, Cass Business School, London 26/2/2014.

Invited Speaker and Symposium Organiser - 9th International Conference on Intelligent Sensors, Sensor Networks and Information Processing, 2014.

Invited Speaker and Workshop Organiser - 1st International Spatial and Temporal Modelling in Institute of Statistical Mathematics, Tokyo, Japan 2013.

Invited Speaker - International Competition in Banking: Theory and Practice , Sumy, Ukraine - March 2013.

Invited Speaker - Statistics Department, Imperial College, UK - March 2013.

Invited Speaker - Statistics Department, University of Kent, UK - March 2013.

Invited Speaker - Statistics Department, University of Nottingham , UK - March 2013.

Invited Speaker - Statistics Department, Bristol University, UK - March 2013.

Invited Speaker - Mathematical Models for Impulsiveness: Alpha Stable models for Signal Processing and Communications, Dec. 2012

Invited Speaker - Sequential Monte Carlo Methods and Efficient Simulation in Finance, Ecole Polytechnique, Paris, France - October 2012.

Invited Speaker - Closed Form Solutions to Loss Distributional Approach Insurance and Risk Models via Properties of Convolutional Semi-groups for sub-exponential Severity Models, National University of Singapore (NUS) - August 2012.

Invited Speaker - Generalized Interference Models in Doubly Stochastic Poisson Random Fields for Wideband Communications. Institute of Statistical Mathematics (ISM) - August 2012.

Invited Speaker - Risk: Modelling, Optimization and Inference, University of New South Wales, Sydney, Australia - July 2012.

Invited Speaker - Particle Markov Chain Monte Carlo methods for Commodity Models - Seminar, National University of Singapore, 2012.

Invited Speaker - Particle Markov Chain Monte Carlo methods for Commodity Models - Seminar, Institute of Statistical Mathematics - Tokyo Japan, 2011.

Invited Speaker - Particle Markov Chain Monte Carlo methods for Commodity Models - Seminar, Computational Financial Econometrics CFE- London School of Economics, 2011.

Invited Speaker - Multi-species modelling - Commonwealth Scientific and Industrial Research Organisation - Seminar, Perth, Nov. 2011.

Invited Speaker - Vector Autoregression Models Incorporating Alpha-Stable Noise. - Seminar, University NSW, Sydney, May. 2011.

Invited Speaker - Algorithmic Trading Models via Cointegration Frameworks. - Boronia Managed Funds, Sydney, Australia, April 2011

Invited Speaker - Vector Autoregression Models Incorporating Alpha-Stable Noise for Inter-day Price Level Shifts. - Seminar, ENSAE, Paris, April. 2011.

Invited Speaker - Bayesian Alpha Stable models via SMC Samplers PRC-ABC - SAMSI Transition Workshop for Program on Sequential Monte Carlo Methods, SAMSI, North Carolina, Nov. 2009.

Invited Speaker - Markov Switching Bayesian Cointegrated Vector Autoregression models - Boronia Managed Funds, Sydney, NSW - Seminar, Sept. 2009

Invited Speaker - Adaptive Trans-dimensional MCMC for Bayesian Cointegrated Vector Autoregression models - Department of Mathematics and Statistics, University of NSW - Statistics Seminar Series, Sept. 2009

Invited Speaker - SAMSI Transition Workshop for Program on Sequential Monte Carlo Methods, SAMSI, North Carolina, Nov. 2009.

Invited Speaker - Seminar Series University of NSW, Sydney, Australia, 2009.

Invited Speaker - Boronia Capital Pty. Ltd. Hedge Fund, Sydney, 2009.

Invited Speaker - Workshop for International Computing and Economics, University of Technology, Sydney, 2009.

Invited Speaker - Seminar Series University of NSW, Sydney, Australia, 2009.

Invited Speaker - Ninth Annual J. B. Douglas Awards (Winner), Statistical Society of Australia, Sydney, 2008.

Invited Speaker - 9th World Conference of the International Society for Bayesian Analysis, Hamilton Island, 2008.

Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) - AMRA Meeting, 2008.

Invited Speaker - Qintq, Great Malvern, UK, 2008.

Invited Speaker - Boronia Capital Pty. Ltd. Hedge Fund, Sydney, 2007.

Invited Speaker - 2nd World MCMSki of the International Society for Bayesian Analysis, Bormio, Italy, 2008.

Invited Speaker - Australasian Society for Bayesian Analysis, Spring Bayes, Coolangatta, 2007.

Invited Speaker - Commonwealth Scientific and Industrial Research Organisation (CSIRO) - Risk Management Seminar, 2007.

Invited Speaker - University of British Columbia (UBC) - Laboratory for Computational Intelligence Seminar, 2006.

Invited Speaker - University of British Columbia (UBC) - Statistics Department Seminar, 2005.

Invited Speaker - Qintq, Great Malvern, UK, 2005.

Invited Speaker - Cambridge University - Engineering Department Seminar 1, 2005.

Invited Speaker - Cambridge University - Engineering Department Seminar 2, 2005.

Invited Speaker - 6th World meeting of the Bernoulli Society for Mathematical Statistics and Probability and 67th Annual Meeting of the Institute of Mathematical Statistics, Barcelona, Spain, 2004.

European Machine Learning Summer School, Berder Island, France, 2004.

## **MANAGEMENT, ADMINISTRATIVE AND OTHER RELEVANT ACTIVITIES**

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In terms of demonstration of types of such activities:

- Organizing committee of the international (Monte Carlo Quasi Monte Carlo) MCQMC conference held in Stanford, California USA 2016.
- Organizing committee of the international (Monte Carlo Quasi Monte Carlo) MCQMC conference held in Leuven, Belgium 2014.
- Organizing committee of the international (Monte Carlo Quasi Monte Carlo) MCQMC conference held in Sydney, Australia 2012. (jointly with Prof. Ian Sloan.)
- Developed jointly with industry contacts a Quantitative Risk Solutions Laboratory (QRSLab) at the University of NSW. Including initiation, memorandum of understanding, laboratory board and university recognition.
- Developed a scholarship protocol and obtained scholarship money from industry partners for PhD. students including professional placement - Boronia Manged Funds QRSLab scholarship; Deloitte QRSLab scholarship and CSIRO QRSLab scholarship.
- I am the web master for the Department of Mathematics and Statistics at UNSW 2010 and 2011.
- I was the High Performance Computing staff representative for Statistics in the Faculty of Science at UNSW 2010 and 2011.
- I provide additional volunteer support and consultation times for all students across the university through the specifically designed lunch time Student Support Scheme.

## **CONFERENCES AND WORKSHOPS I HAVE CO-ORGANIZED OR EDITORIAL PANEL**

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- Scottish Financial Risk Academy Colloquium, Institute of Mathematical Sciences, Edinburgh, UK, Organisor
- STM2017 - 5th International Spatial Temporal Modelling workshop, Tokyo - Institute of Statistical Mathematics (ISM), Japan, Organisor
- STM2016 - 4th International Spatial Temporal Modelling workshop, Tokyo - Institute of Statistical Mathematics (ISM), Japan, Organisor
- MCQMC-2016 - 12th international conference on Monte Carlo and Quasi Monte Carlo, Stanford University, US (Scientific Committee).
- STM2015 - 3rd International Spatial Temporal Modelling workshop, Tokyo - Institute of Statistical Mathematics (ISM), Japan, Organisor
- UCL-OpRisk - 2015- co-organisor of monthly workshop and discussion on Operational Risk modelling with academic and practitioners working group.
- NIPS - 2015- Neural Information Programming Society (programme committee)
- STM2014 - 2nd International Spatial Temporal Modelling workshop, Tokyo - Institute of Statistical Mathematics (ISM), Japan, Organisor
- UCL-OpRisk - 2014- co-organisor of monthly workshop and discussion on Operational Risk modelling with academic and practitioners working group.
- CFE - 2014- Computational Financial Econometrics, Pisa, Italy (programme committee and invited session organisor)
- NIPS - 2014- Neural Information Programming Society (programme committee)
- MCQMC-2014 - 11th international conference on Monte Carlo and Quasi Monte Carlo, Leuven, Belgium (Scientific Committee).
- STM2013 - 1st International Spatial Temporal Modelling workshop, Tokyo - Institute of Statistical Mathematics (ISM), Japan, Organisor
- ICORES - 2013- 2nd International Conference on Operations Research and Enterprise Systems - Portugal (programme committee)
- ORS - 2013 - Annual International Conference on Operations Research and Statistics (ORS), Singapore (programme committee)
- MCQMC-2012 - 10th international conference on Monte Carlo and Quasi Monte Carlo, Sydney, Australia (Co - organisor).
- CAMSAP - 2011 - 4th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing - Puerto Rico (invited special session speaker - Financial Mathematics)
- ICORES - 2012- 1st International Conference on Operations Research and Enterprise Systems - Portugal (programme committee)
- CFE-2011 5th CSDA International Conference on Computational and Financial Econometrics - London (invited special session speaker)
- AIStatistics - 2011 (programme committee)
- AIStatistics - 2010 (programme committee)

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## SERVICES TO THE PROFESSION: EDITORIAL AND REVIEWING ACTIVITY

- 2021
  - Associate Editor: Annals of Actuarial Science
  - Academic Editor: Plos One
  - Area Editor : Artificial Intelligence and Data Science - IET Blockchain Journal (Subject Editor and Associate Editor)
  - Editor: Risks (MDPI Journal)
  - Editor: Mathematics (MDPI Journal)
  - Editor: AIMS Data Science in Finance and Economics
  - Associate Editor: STATS (Frontiers Journal)
  - Special Issue Editor: Spatial Temporal Models and Machine Learning (MDPI Journal Entropy)
  - Speccial Issue Editor: Financial Mathematics and Machine Learning (Frontiers Journal STATS).
- 2020
  - Area Editor : Artificial Intelligence and Data Science - IET Blockchain Journal
  - Editor: Risks (MDPI Journal)
  - Editor: Mathematics (MDPI Journal)
- 2017
  - Guest Special Issue Editor : "Statistical Methods and Machine Learning Techniques for Insurance and Risk Management Data Analytics." Risks Journal.
  - Associate Editor : Computational and Financial Econometrics - Econometrics and Statistics Part A.
- 2016
  - Associate Editor : Computational and Financial Econometrics - Econometrics and Statistics Part A.
- 2015
  - Associate Editor: Part A - Econometrics, Journal of the Computational Financial Econometrics Society. 2015+  
<http://www.cfenetwork.org/EcoSta.php>
  - Associate Editor : Journal of Mathematics, Statistics and Operations Research (GSTF)
  - Editorial Board Member : Mathematical Finance Letters
  - Editorial Board Member : Theoretical Economic Letters (TEL)
  - Editorial Board Member : Journal of Mathematical Finance (JMF)
  - International Reviewer - French National Scientific Grant Agency.
  - International Reviewer - CNPq - National Institutes of Science and Technology in Brazil.
  - Scientific Board: MCQMC International Conference (URL)
- 2014
  - Editorial Board Member : Theoretical Economic Letters (TEL)
  - Editorial Board Member : Journal of Mathematical Finance (JMF)
  - Associate Editor : Journal of Mathematics, Statistics and Operations Research (GSTF)
  - Editorial Board Member : Mathematical Finance Letters
- 2013

- Editor in Chief : American Journal of Algorithms and Computing (2012)
- Editorial Board Member : Theoretical Economic Letters (TEL)
- Editorial Board Member : Journal of Mathematical Finance (JMF)
- Associate Editor : Journal of Mathematics, Statistics and Operations Research (GSTF)
- Editorial Board Member : Mathematical Finance Letters
- 2012
  - Editor in Chief (2012): American Journal of Algorithms and Computing
  - Editorial Board Member (2012): Theoretical Economic Letters (TEL)
  - Editorial Board Member (2012): Journal of Mathematical Finance (JMF)
- 2011
  - Editorial Board Member (2011): Theoretical Economic Letters (TEL)
  - Editorial Board Member (2011): Journal of Mathematical Finance (JMF)

## **SERVICES TO THE PROFESSION: REVIEWING ACTIVITY**

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Regular referee for the following journals:

- American Meteorological Society (AMS) Weather, Climate, and Society
- AISTats 2011-2020 - invited reviewer each year.
- Annals of Actuarial Science
- Annals of Institute of Statistical Mathematics
- ASTIN Bulletin
- Bayesian Analysis
- Bulletin of the Seismological Society of America
- Communications in Statistics - Simulation and Computation
- Computational Statistics and Data Analysis
- Frontiers in Blockchain, Financial Blockchain
- European Actuarial Journal
- Electronic Journal Of Statistics
- International Journal of Financial Engineering
- International Journal of Forecasting
- IEEE Access
- IEEE Journal of Selected Topics in Signal Processing
- IEEE Transactions on Information Forensics and Security
- IEEE Transactions on Emerging Telecommunications Technologies
- IEEE Transactions on Information Processing Over Networks
- IEEE transactions Signal Processing

- IEEE transactions Communications
- IEEE transactions Wireless Communications
- IEEE transactions Sensor Networks
- IEEE Information Theory
- IEEE Transactions on Sensors
- IEEE Transactions on Vehicular Technology
- Insurance: Mathematics and Economics .
- Journal of American Statistical Association
- Journal of Banking and Finance
- Journal of Econometrics
- Journal of Forecasting
- Journal of Time Series Analysis
- Journal of Royal Statistical Society Series-B
- Journal of Royal Statistical Society Series-A
- Journal of Multivariate Analysis
- Journal of Operational Risk
- Journal of Theoretical Probability
- Journal of Banking Regulation
- Journal of International Money and Finance
- Journal of Financial Engineering
- Journal of Financial Perspectives
- Mathematics
- Methods in Ecology and Evolution
- Methodology and Computing in Applied Probability (MCAP).
- North American Actuarial Journal
- Neural Information Processing NIPs 2014-2020 - invited reviewer each year.
- PLOS One
- Processes
- Royal Economics Society
- Risks
- Risk Analysis
- Risk Magazine
- Risk Management Reloaded
- Statistics in Medicine
- Stochastic Processes and Their Applications

- Statistics in Medicine
- Stochastic Analysis and Applications
- Scandinavian Journal of Statistics
- The North American Journal of Economics and Finance
- Quantitative Finance

## RESEARCH COLLABORATORS

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- Dr. Nourddine Azaoui, Mathematics, University Blaise-Pascale, Clermont-Ferrand, France.
- Dr. Laurent Clavier, Telecom Lille, Lille, France.
- Prof. Arnaud Doucet, Institute of Statistical Mathematics, Tokyo, Japan.
- Dr. Yanan Fan, Statistics Department, University of NSW, Australia.
- Prof. Simon Godsill, Statistical Signal Processing Laboratory, Cambridge University, Cambridge, UK.
- Dr. Arnaud Guillin, Mathematics, University Blaise-Pascale, Clermont-Ferrand, France.
- A.Prof. Adam Johansen, Statistics Department, University of Warwick, UK.
- Prof. Robert Kohn, Australian Business School, University of New South Wales (UNSW), Australia.
- Dr. Ioannis Kosmidis, Statistics, University College London, London, UK.
- Prof. Tomoko Matsui, Institute of Statistical Mathematics, Tokyo, Japan.
- Prof. Pierre del Moral, INRIA, Bordeaux, France.
- Dr. Ido Nevat, Electrical Engineering Department, University of NSW, Australia.
- Dr. Francois Septier, Telecom Lille, Lille, France.
- Dr. Pavel Shevchenko, CSIRO CMIS, Sydney, Australia.
- Dr. Scott Sisson, Statistics Department, University of NSW, Australia.
- Dr. Mario Wüthrich, RiskLab, ETH, Zurich, Switzerland.
- Prof. Jinhong Yuan, Electrical Engineering Department, University of NSW, Australia.

## PRIVATE SECTOR

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- I have 4 years experience full-time work in the Financial Industry.
- I have set up and ran my own statistical consulting company Quantitative Risk Solutions - 4 years.
- I have worked both individually and as part of teams. Highlights include successfully leading a team of quantitative analysts and computer scientists for developing and testing a large commercial banking project in a risk setting - Operational Risk.
- I have worked as a junior Electrical Engineer at NEC Australia.

# 1 Professional Experience

**JP Morgan**, London, UK

*Statistical Advisory and Senior Scientist* 2019

Bond Portfolios and Market Making Quantitative Strategies.

**InRobin**, Edinburgh, UK

*Statistical Advisory* 2019

Real time insurance premiums for industrial machinery. Corporate and Technical Advisor to start-up firm.

**Blockchain**, London, UK

*Statistical Consultancy* 2019

Worlds largest blockchain company and wallet provider.

**Stratagem Fund**, London, UK

*Statistical Consultancy* February 2015 to 2018

Stratagem (client) - large hedge fund in London.

**Quantitative Risk Solutions**, London, UK

*Statistical Consultancy* February 2016 to 2020 (June)

I run this as a trading and hedge fund strategy consulting.

Stratagem (client) - large hedge fund in London.

**Quantitative Solutions**, Sydney, Australia

*Statistical Consultancy* March 2008 to 2012

I run my own statistical consultancy business.

Boronia Capital Pty Ltd (client) - large quantitative hedge fund in Australia. Work on filtering and model analysis in co-integrated vector auto regression models.

**Commonwealth Scientific and Industrial Research Organisation (CSIRO)**, Sydney, Australia

*CMIS Financial Mathematics and Risk Modelling group.* 2007 to 2017

Work on filtering, numerical sampling, model development and analysis in Risk (Operational Risk); in Insurance (Non-life claims reserving); in Commodities (Stochastic factor models).

**Commonwealth Bank of Australia**, Sydney, Australia

*Associate Quantitative Analyst - Market and Operational Risk* 2005 to 2007

Performed mathematical modelling, methodological design and development, model validation and testing.

Worked on Operational Risk modelling, Credit Risk modelling and Market Risk modelling.

Jointly setup and ran Quantitative Research reading group and seminar series.

**NEC Australia**, Melbourne, Australia

*Junior Engineer* 1999, 2000

Analyzed, designed and tested crystal oscillator systems in mobile phones for synchronization of symbol detection.

## TECHNICAL SKILLS

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Extensive modelling, simulations and methodological development of financial models, time series models, non-linear filtering and sampling theory.

**PYTHON (Basic)** toolboxes: Pandas, PyCharm, Scikit-Learn, NumPy, FastAI

**MATLAB (Advanced)** experience: Statistical Signal Processing, Fourier transforms, nonlinear numerical methods, statistics (Classical and Bayesian), Machine Learning (Support Vector Machines, Boosting, Classification), Game Theory, Time series. toolboxes: communications, control system, genetic algorithm and direct search, signal processing, statistics, time series, excel link, excel builder

Instrumentation and Control: **Simulink**, **LabVIEW** and other

**R (Advanced)** IDE: RStudio packages: RStudio Server, Shiny Server, RStudio Package Manager, ggplot2, dplyr, Tidyverse, tidyr, TensorFlow, tidymodels, Sparklyr, Plumber, Reticulate, Databases using R

**TRIFECTA-WRANGLER (Intermediate)** Data wrangling in Trifacta on cloud and AWS environments.

**SQL RELATIONAL DATABASES (Basic)** Basics of relational data and SQL queries

**MONGODB NOSQL DATABASES (Basic)** Basics of relational data in MongoDB, using MongoDB, Compass, MongoDB Atlas.

**WEBSCRAPING (Basic)** HTML, XML and JSON data analysis and webscraping (both HTML and Java-embedded webpages).

**SMART CONTRACTS AND BLOCKCHAIN ORACLES (Basic)** Basics of smart contract code on Ethereum and ChainLink.

**AMAZON WEB SERVICES (Intermediate)** Machine Learning in AWS environments, Blockchain development and smart contracts in AWS environments

**FROTRAN 95 (Intermediate)**

**BASH SCRIPT (Intermediate)**

**PINE SCRIPT (Advanced)**

Other Basics in Programming: minitab, Excel, VBA, C, Pascal.

Applications:  $\text{\TeX}$ ,  $\text{\LaTeX}$ ,  $\text{\BIBTeX}$ , Microsoft Office, and other common productivity packages for Windows, OS X, and Linux platforms

Operating Systems: Microsoft Windows XP/2000, Apple OS X, Unix

## 2 Mathematical Expertise

### Insurance:

General insurance and life insurance, claims reserving, claims processes and loss process modelling, risk measures, portfolio design and diversification, insurance contract design and risk transfer analysis, rate making/pricing in incomplete markets, machine learning applications and methodology in risk and insurance, wide variety of real data examples and product lines.

### Statistics:

Bayesian model development and fitting; Multivariate numerical sampling and simulation; Markov

chain theory; Markov chain Monte Carlo; Trans-dimensional MCMC; Sequential Monte Carlo (non-linear filtering); Likelihood Free inference.

**Financial Mathematics:**

Operational Risk; Non-life Insurance Claims Reserving Models; CoIntegration models in financial time series; sde commodities models and non-linear filtering; Game theory and mechanism design.

**Signal Processing and Communications Engineering:**

Communications Engineering and Signal Processing; Detection and Channel Estimation; Relay system design; Model selection in channel estimation. Machine Learning Support Vector Machines; Stochastic optimization.

**REFEREES**

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The following five referees have agreed to provide a reference on my behalf for this position application:

- Prof. Pavel Shevchenko  
Department of Applied Finance, Maquarie University, Sydney, Australia.
    - Director, Risk Analytics Lab
    - Co-Director, Centre for Financial Risk
    - Email [pavel.shevchenko@mq.edu.au](mailto:pavel.shevchenko@mq.edu.au)
  - Dr. Andrea Macrina  
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  - Prof. Guillaume Bagnarosa  
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    - Director for Agribusiness Area of Expertise.
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  - Dr. Jennifer Chan  
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