







Thomas Fung

Associate Professor in Statistics

Curriculum Vitae

May 2025

 School of Mathematical and Physical Sciences, Macquarie University
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Employment

- 01/2025–present **Associate Professor in Statistics**
School of Mathematical and Physical Sciences, Macquarie University
- 01/2022–12/2024 **Senior Lecturer in Statistics**
School of Mathematical and Physical Sciences, Macquarie University
- 08/2018–12/2021 **Senior Lecturer in Statistics**
Department of Mathematics and Statistics, Macquarie University
- 01/2018–08/2018 **Senior Lecturer in Statistics**
Department of Statistics, Macquarie University
- 02/2010–12/2017 **Lecturer in Statistics**
Department of Statistics, Macquarie University
- 01/2010–02/2010 **Research Assistant (Supervisor: Professor Neville Weber)**
School of Mathematics and Statistics, the University of Sydney
- 07/2005–02/2010 **Tutor**
School of Mathematics and Statistics, the University of Sydney

Professional Service

- 07/2024–present **Director of Education**
School of Mathematical and Physical Sciences, Macquarie University
- 10/2023–present **Summer School Officer**
The International Association for Statistical Computing (IASC)
- 11/2022–present **Deputy Course Director for BSc**
Faculty of Science & Engineering, Macquarie University
- 03/2022–03/2023 **Vice-President**
Statistical Society of Australia, NSW Branch
- 01/2022–12/2023 **Teaching Lead in Statistics**
School of Mathematical and Physical Sciences, Macquarie University
- 03/2020–03/2022 **President**
Statistical Society of Australia, NSW Branch
- 12/2019–12/2023 **Board of Directors Ordinary Members**
The Asian Regional Section of The International Association for Statistical Computing (IASC-ARS)
- 05/2019–12/2021 **Teaching Lead in Statistics**
Department of Mathematics and Statistics, Macquarie University
- 03/2019–03/2020 **Vice-President**
Statistical Society of Australia, NSW Branch
- 03/2019–present **Associate Editor**
Australian and New Zealand Journal of Statistics
- 01/2019–10/2019 **Statistics Seminar Organiser**
Department of Statistics, Macquarie University
- 02/2018–06/2018 **Higher Degree Research (HDR) Director**
Department of Statistics, Macquarie University
- 03/2016–03/2018 **Secretary**
Statistical Society of Australia, NSW Branch
- 10/2015–06/2018 **Master of Research (MRes) Advisor**
Department of Statistics, Macquarie University
- 03/2015–03/2016 **Assistant Secretary**
Statistical Society of Australia, NSW Branch

- 02/2014–08/2014 **Statistics Seminar Organiser**
Department of Statistics, Macquarie University
- 07/2013–08/2014 **Undergraduate Studies Coordinator**
Department of Statistics, Macquarie University
- 08/2010–10/2010 **Postgraduate and Honour Coordinator**
Department of Statistics, Macquarie University

Research Interest

- My research interests include
 - (Integer-valued) Time Series Analysis
 - Flexible Regression
 - Conway-Maxwell Poisson (CMP) and related distributions
 - Variance-Gamma and related distributions
 - Tail dependence
- My research is motivated by complex data that exhibit deviations from an assumed model, such as dispersion, zero-inflation, skewness and heavy-tailedness.

Publications

Journal Publications

I have 29 publications in international journals.

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|------|--|---------------------|
| 2025 | On Exponential-Family INGARCH Models
A Huang, T Fung, K Macaskill, R Aukes. <i>Journal of Time Series Analysis</i> , | No. of citation: 0 |
| 2025 | The t-Distribution in Financial Mathematics and Multivariate Testing Contexts
E Seneta, T Fung. <i>Journal of Risk and Financial Management</i> , 18 (5), 224 | No. of citation: 0 |
| 2025 | NUMERICAL ANALYSIS OF EXTREME PROBABILITIES AND THE LAW OF LARGE NUMBERS
T FUNG, E SENETA. <i>Communications in Optimization Theory</i> , | No. of citation: 0 |
| 2024 | A theorem on the asymptotics of skew-normal type integrals
T Fung, E Seneta. <i>Statistics and Probability Letters</i> , 110080 | No. of citation: 0 |
| 2023 | Industry differences in psychological distress and distress-related productivity loss: A cross-sectional study of Australian workers
K Burns, EA Schroeder, T Fung, LA Ellis, J Amin. <i>Journal of Occupational Health</i> , 65 (1), e12428 | No. of citation: 2 |
| 2023 | On Familywise Error Rate Cutoffs under Pairwise Exchangeability
T Fung, E Seneta. <i>Methodology and Computing in Applied Probability</i> , 25 (2), Article 59 | No. of citation: 2 |
| 2023 | Inconsistent coral bleaching risk indicators between temperature data sources
VHF Neo, J Zinke, T Fung, CJ Merchant, KJA Zawada, H Krawczyk, <i>Earth and Space Science</i> , 10 (7), e2022EA002688 | No. of citation: 5 |
| 2022 | Consistent second-order discrete kernel smoothing using dispersed Conway-Maxwell-Poisson kernels
No. of citation: 9
A Huang, L Sippel, T Fung. <i>Computational Statistics</i> , 37 (2), 551-563 | |
| 2022 | Takeaway alcohol sales and violent crime: the implications of extended trading hours.
JJ Wang, T Fung, S Poynton. <i>Crime and Justice Bulletin</i> , | No. of citation: 3 |
| 2021 | The impact of the COVID-19, social distancing, and movement restrictions on crime in NSW, Australia
No. of citation: 14
JJJ Wang, T Fung, D Weatherburn. <i>Crime Science</i> , 10, 1-14 | |
| 2021 | Tail asymptotics for the bivariate equi-skew generalized hyperbolic distribution and its Variance-Gamma special case
No. of citation: 3
T Fung, E Seneta. <i>Statistics and Probability Letters</i> , 178, 109182 | |
| 2020 | Statistics: Your ticket to anywhere
AAB Bilgin, D Bulger, T Fung. <i>Statistics Education Research Journal</i> , 19 (1), 11-20 | No. of citation: 13 |
| 2018 | Quantile function expansion using regularly varying functions
T Fung, E Seneta. <i>Methodology and Computing in Applied Probability</i> , 20, 1091-1103 | No. of citation: 17 |
| 2017 | Understanding PM10 pollution in the Upper Hunter valley of New South Wales
N Jiang, L Warren, T Fung, A Bilgin, D Salter, U Dutt, L De Torres, M Riley. CASANZ, Z2017 Conference: The Critical Atmosphere | No. of citation: 0 |

2016	Tail asymptotics for the bivariate skew normal T Fung, E Seneta. Journal of Multivariate Analysis, 144, 129-138	No. of citation: 16
2014	Convergence rate to a lower tail dependence coefficient of a skew-t distribution T Fung, E Seneta. Journal of Multivariate Analysis, 128, 62-72	No. of citation: 12
2014	The deviance information criterion in comparison of normal mixing models T Fung, JJJ Wang, E Seneta. International Statistical Review, 82 (3), 411-421	No. of citation: 1
2013	An alternative estimator for the shape parameter in the negative binomial distribution B Robertson, T Fung, N Weber. Mathematical Scientist, 38 (1)	No. of citation: 1
2013	Contaminated Variance-Mean mixing model T Fung, JJJ Wang, E Seneta. Computational Statistics and Data Analysis, 67, 258-267	No. of citation: 0
2012	Rate of decay of the tail dependence coefficient for the skew t distribution T Fung. Sri Lankan Journal of Applied Statistics, 12 (1), 27-40	No. of citation: 1
2011	Autocorrelation functions R Finlay, T Fung, E Seneta. International Statistical Review, 79 (2), 255-271	No. of citation: 12
2011	The bivariate normal copula function is regularly varying T Fung, E Seneta. Statistics and Probability Letters, 81 (11), 1670-1676	No. of citation: 16
2011	Tail dependence and skew distributions T Fung, E Seneta. Quantitative Finance, 11 (3), 327-333	No. of citation: 12
2010	Tail dependence for two skew t distributions T Fung, E Seneta. Statistics and probability letters, 80 (9-10), 784-791	No. of citation: 46
2010	Modelling and estimation for bivariate financial returns T Fung, E Seneta. International statistical review, 78 (1), 117-133	No. of citation: 30
2010	Extending the multivariate generalised t and generalised VG distributions T Fung, E Seneta. Journal of Multivariate Analysis, 101 (1), 154-164	No. of citation: 13
2008	A characterisation of scale mixtures of the uniform distribution T Fung, E Seneta. Statistics and Probability Letters, 78 (17), 2883-2888	No. of citation: 8
2007	Tailweight, quantiles and kurtosis: A study of competing distributions T Fung, E Seneta. Operations Research Letters, 35 (4), 448-454	No. of citation: 23
2006	Continuity corrections for integer-valued saddlepoint approximations T Fung, J Robinson. Statistics and probability letters, 76 (14), 1465-1469	No. of citation: 0

Software Development

2024	mq-letter-quarto: Quarto template for Macquarie University Style letter T Fung	
2023	moostr: Enhancing Exam Creation in Moodle with Customisable Rewards, Shuffling, and Tolerance Levels I Jiang, T Fung	
2023	mq-thesis-quarto: Macquarie University Thesis Quarto Template T Fung	
2023	mq-research-report-quarto: Quarto template for Macquarie University consulting report T Fung	
2023	mq-SoMAPS-research-report-latex: LaTeX class file for a research report with the SoMAPS @ Macquarie University Branding T Fung	
2022	quarto-mq-revealjs-theme: Macquarie University Quarto reveal.js Presentation Template T Fung, S Connor	
2020	survivalMPLdc: Penalised Likelihood for Survival Analysis with Dependent Censoring J. Xu, J. Ma, T. Fung	
2020	mpcmp: Mean-parametrized Conway-Maxwell Poisson Regression T Fung, A. Alwan, J. Wishart, A. Huang	
2019	qicpack: QIC package for GEE T. Fung	

2018 **thesisdownmq: An updated R Markdown thesis template using the bookdown package for Macquarie University HDR Thesis**
T. Fung, J. Wishart

Honours and Awards

2024 **FSE Excellent Awards for Teaching Innovation**
2024 **Vice-Chancellor's Excellence Awards for Excellence in Education. Learning and Teaching Innovation Award. Highly Commended (Team)**
2023 **FSE Excellent Award for Educational Leader**
2023 **FSE Excellence Award for Inter-School Collaboration**
2023 **60 Australian statisticians, showcasing the breadth of the Australian statistical community to celebrate the 60th anniversary of the Statistical Society of Australia**
2022 **Statistical Society of Australia President's Award for Leadership in Statistics**

Teaching experience

I have extensive convening and teaching experience ranging from first year to master level, theoretical to applied units.

Unit Convenor	Coding and Communication in Statistics (STAT1378)
Unit Convenor	Statistical Data Analysis (STAT1371, formerly as STAT171)
Unit Convenor	Applied Statistics (STAT2170/6180, formerly as STAT270/680)
Unit Convenor	Generalized Linear Models (STAT8111, formerly as STAT811)
Unit Convenor	Research Frontiers in Statistics (STAT7900, formerly as STAT700)
Unit Convenor	Stochastic Finance (STAT890, rested)
Unit Convenor	Computer Simulation (STAT2178, formerly as STAT278)
Unit Convenor	Statistical Design (STAT6114, formerly as STAT814)
Unit Convenor	Statistical Modelling in Finance and Insurance (ACST602)
Unit Convenor	Graphics, Multivariate Methods and Data Mining (STAT3102, formerly as STAT302)
Unit Convenor	Modern Computational Statistical Methods (STAT8178, formerly as STAT878)
Lecturer	Introductory Statistics (STAT1170, formerly as STAT170)
Lecturer	Statistical Inference (STAT306/806)
Lecturer	Research Data Analysis (MEDI7002)
Lecturer	Statistical Theory (STAT810)
Lecturer	Prelude to Bioinformatics (STAT8830, formerly as STAT830)
Lecturer	Computer Applications in Business (MIST800)
Lecturer	Gambling, Sport and Medicine (STAT175)

Named Lectures

2020 **H.O. Lancaster Lecture**
Statistical Society Australia

Other presentations since 2019

2024, August 27-30	COMPSTAT 2024 Giessen, Germany
2024, June 25-26	EAC-ISBA Conference 2024 Online
2024, June 20	BDSI Interactive Forum Series Biological Data Science Institute, ANU
2024, June 20	Statistic seminar Research School of Finance, Actuarial Studies and Statistics, ANU
2023, December 11-14	ASC 2023 Wollongong, Australia

2023, August 1-3	EcoSta Tokyo, Japan
2023, July 15-20	64th World Statistical Congress Ottawa, Canada
2022, December 12-13	IASC-ARS Interim Conference 2022 Online Conference
2022, February 21-24	IASC-ARS 2022 Online Conference
2021, July 5-9	ANZSC 2021 Online Conference
2019, August 18-23	62nd World Statistical Congress Kuala Lumpur, Malaysia
2019, June 25-27	EcoSta Taichung, Taiwan

Conference organisation

2023, December	Australian Statistical Conference, Wollongong, Australia Secretary of the Local Organising Committee
2023, December	IASC-ARS Conference at Macquarie University, Sydney, Australia Chair of the Organising Committee
2022, February	IASC-ARS 2022, Kyoto, Japan Scientific Program Committee
2019, December	IASC-ARS 2019, Hong Kong Organiser of the invited paper session: Recent Advances in Modelling Complex Data
2018, June	EcoSta, Hong Kong Organiser of the invited paper session: Recent advance in (semi)parametric modelling
2017, December	AustMS, Sydney Organiser of the invited paper session: Stochastic models and applications

Internal Research Funding

04/2024-04/2027	Cochlear Macquarie University Joint Fund. \$450,393 Rapid, cheap, and informative hearing screening for all, with B. Lique, G. Sofronov, S. Boothalingam & Z. Smith
07/2018-12/2018	Macquarie University OSP Travel Grant. \$ 6,850
08/2014-01/2015	Macquarie University OSP Travel Grant. \$ 6,850
01/2012-12/2012	Macquarie University New Staff Research Grants Scheme. \$ 19,194

Internal Learning and Teaching Funding

02/2024-present	FSE Teaching Development Grant. \$ 4,402 Empowering First-Year Students: A Three-Pillar Approach to Fostering Statistical Literacy, with J. Lin
02/2024-present	FSE Teaching Development Grant. \$ 2,000 You to the Power of Visualization – a data visualisation challenge to enhance sustainability, employability, and student experience, with I. Jiang
09/2022-12/2022	FSE Teaching Development Grant. \$ 5,000 DataFest@Macquarie, with I. Jiang
01/2017-12/2017	Macquarie University's Strategic Infrastructure Scheme (MQSIS) for Learning and Teaching. \$30,451 Cloud-based virtual laboratory for large statistics units, with J. Wishart

External Consulting

12/2020	Adams Hospitality Analysing Alcohol related Crime Statistics at Buronga & Gol Gol, NSW
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Selected academic visits

11/2018	NSW Bureau of Crime Statistics and Research, Department of Justice, Sydney, Australia	4 weeks
09/2018	Department of Statistics & Actuarial Science, University of Hong Kong, Hong Kong, China	9 weeks
08/2018	School of Physical & Mathematical Sciences, (NTU), Singapore	3 weeks
07/2018	Quality Systems and Reporting, Climate and Atmospheric Science Branch, Office of Environment and Heritage (NSW), Sydney, Australia	4 weeks
11/2014	School of Mathematics and Statistics, the University of Sydney, Australia	10 weeks
09/2014	Department of Finance, University of Maryland, USA	9 weeks
08/2014	Department of Statistics, University of Auckland, New Zealand	5 weeks

Research Supervision

Postdoctoral researcher

01/2020–12/2020 **Manjula Schou**

04/2012–9/2012 **Joanna Wang**

Ph.D Thesis

02/2014–02/2017 **Co-supervision of Jamil hasan Karami**
An Extension of Model Selection Curves Framework to Accelerated Failure Time Models

MRes Project

01/2022–02/2023 **Co-supervision of Christina Feng**
Climate and Assault Hospitalisation

02/2021–03/2022 **Co-supervision of Vanessa Neo**
Inconsistent coral bleaching risk indicators between temperature data sources

Master Coursework Research Project

06/2019 **Yaxin Yu**
Analysis of influences of 2014 Liquor Reforms Act on domestic violence in Sydney (NSW 2000) and NSW, Australia

06/2019 **Jess Chen**
The comparisons of data mining methods for the predictive accuracy of probability of default for LeadingClub's loan data

06/2019 **Katelyn Priester**
Predictors of Acute Pain after Thoracic Surgery

06/2017 **Sze Ho Wang**
Prediction of daily maximum ozone concentrations from ozone precursors and meteorological conditions using Multiple Linear Regression and Generalized Linear Model

06/2016 **Ahmad Alqabandi**
Analysing the Impact of Lockout Law on Alcohol-Related Assaults in NSW Using GLARMA Model

06/2016 **Haolun Deng**
Estimation of Skew Models in WinBUGS and Stan

06/2014 **Jian Zheng Xie**
Modelling and Predicting Stocks Price with ARMA-GARCH Model

06/2014 **Brook Naar**
Fixed Form Variational Bayes Posterior Estimation through Regression – Review and Discussion

11/2013 **Ling Chen**
A Study on Pricing Motor Compulsory Third party Liability Insurance in China using GLM techniques.

11/2013 **Gavin Marsh**
Skew Brownian Motion and Pricing European Options

11/2012 **Zhongkai Chan**
Modelling high frequency financial time series by the decomposition model

Education

2010 **Ph.D. in Statistics**
School of Mathematics and Statistics, the University of Sydney
 ➤ Supervisor: Emeritus Professor Eugene Seneta

2006 **B.Sc.(Advanced Mathematics) Honours Class I**
School of Mathematics and Statistics, the University of Sydney
 ➤ Supervisor: Emeritus Professor Eugene Seneta

Refereeing

Annals of the Institute of Statistical Mathematics, Australian and New Zealand Journal of Statistics, Biometric, Communication in Statistics - Theory and Methods, Computational Statistics, Econometrics and Statistics, Empirical Economics, Entropy, International Journal of Theoretical and Applied Finance, International Statistical Review, Journal of Applied Mathematics, Journal of Computational and Graphical Statistics, Journal of Multivariate Analysis, Journal of Statistical Computation and Simulation, Journal of Statistical Theory and Practice, Mathematics, PLOS ONE, Songklanakarin Journal of Science and Technology, Statistics and Probability Letters.