Thomas Fung
Senior Lecturer in Statistics

Curriculum Vitae
September 2024

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Employment

01/2022–present	**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 26 publications in international journals.

2024	**A theorem on the asymptotics of skew-normal type integrals**	No. of citation: 0
	T Fung, E Seneta. Statistics and Probability Letters, 110080	
2023	**Industry differences in psychological distress and distress-related productivity loss: A cross-sectional study of Australian workers**	No. of citation: 0
	K Burns, EA Schroeder, T Fung, LA Ellis, J Amin. Journal of Occupational Health, 65 (1), e12428	
2023	**On Familywise Error Rate Cutoffs under Pairwise Exchangeability**	No. of citation: 0
	T Fung, E Seneta. Methodology and Computing in Applied Probability, 25 (2), Article 59	
2023	**Inconsistent coral bleaching risk indicators between temperature data sources**	No. of citation: 3
	VHF Neo, J Zinke, T Fung, CJ Merchant, KJA Zawada, H Krawczyk, ... Earth and Space Science, 10 (7), e2022EA002688	
2022	**Consistent second-order discrete kernel smoothing using dispersed Conway–Maxwell–Poisson kernels**	
	No. of citation: 9	
	A Huang, L Sippel, T Fung. Computational Statistics, 37 (2), 551-563	
2022	**Takeaway alcohol sales and violent crime: the implications of extended trading hours.**	No. of citation: 3
	JJ Wang, T Fung, S Poynton. Crime and Justice Bulletin,	
2021	**The impact of the COVID-19, social distancing, and movement restrictions on crime in NSW, Australia**	
	No. of citation: 12	
	JJJ Wang, T Fung, D Weatherburn. Crime Science, 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. Statistics and Probability Letters, 178, 109182	
2020	**Statistics: Your ticket to anywhere**	No. of citation: 6
	AAB Bilgin, D Bulger, T Fung. Statistics Education Research Journal, 19 (1), 11-20	
2018	**Quantile function expansion using regularly varying functions**	No. of citation: 15
	T Fung, E Seneta. Methodology and Computing in Applied Probability, 20, 1091-1103	
2017	**Understanding PM10 pollution in the Upper Hunter valley of New South Wales**	No. of citation: 0
	N Jiang, L Warren, T Fung, A Bilgin, D Salter, U Dutt, L De Torres, M Riley. CASANZ, Z2017 Conference: The Critical Atmosphere	
2016	**Tail asymptotics for the bivariate skew normal**	No. of citation: 16
	T Fung, E Seneta. Journal of Multivariate Analysis, 144, 129-138	
2014	**Convergence rate to a lower tail dependence coefficient of a skew-t distribution**	No. of citation: 12
	T Fung, E Seneta. Journal of Multivariate Analysis, 128, 62-72	
2014	**The deviance information criterion in comparison of normal mixing models**	No. of citation: 1
	T Fung, JJJ Wang, E Seneta. International Statistical Review, 82 (3), 411-421	
2013	**An alternative estimator for the shape parameter in the negative binomial distribution**	No. of citation: 1
	B Robertson, T Fung, N Weber. Mathematical Scientist, 38 (1)	

2013	**Contaminated Variance–Mean mixing model**	No. of citation: 0
	T Fung, JJJ Wang, E Seneta. Computational Statistics and Data Analysis, 67, 258-267	
2012	**Rate of decay of the tail dependence coefficient for the skew t distribution**	No. of citation: 1
	T Fung. Sri Lankan Journal of Applied Statistics, 12 (1), 27-40	
2011	**Autocorrelation functions**	No. of citation: 12
	R Finlay, T Fung, E Seneta. International Statistical Review, 79 (2), 255-271	
2011	**The bivariate normal copula function is regularly varying**	No. of citation: 15
	T Fung, E Seneta. Statistics and Probability Letters, 81 (11), 1670-1676	
2011	**Tail dependence and skew distributions**	No. of citation: 12
	T Fung, E Seneta. Quantitative Finance, 11 (3), 327-333	
2010	**Tail dependence for two skew t distributions**	No. of citation: 46
	T Fung, E Seneta. Statistics and probability letters, 80 (9-10), 784-791	
2010	**Modelling and estimation for bivariate financial returns**	No. of citation: 29
	T Fung, E Seneta. International statistical review, 78 (1), 117-133	
2010	**Extending the multivariate generalised t and generalised VG distributions**	No. of citation: 13
	T Fung, E Seneta. Journal of Multivariate Analysis, 101 (1), 154-164	
2008	**A characterisation of scale mixtures of the uniform distribution**	No. of citation: 8
	T Fung, E Seneta. Statistics and Probability Letters, 78 (17), 2883-2888	
2007	**Tailweight, quantiles and kurtosis: A study of competing distributions**	No. of citation: 22
	T Fung, E Seneta. Operations Research Letters, 35 (4), 448-454	
2006	**Continuity corrections for integer-valued saddlepoint approximations**	No. of citation: 0
	T Fung, J Robinson. Statistics and probability letters, 76 (14), 1465-1469	

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

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 Convener	**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 Conference
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, Canda
2022, December 12-13	**IASC-ARS Interim Conference 2022** Online Conference
2022, Februry 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

2019, December   **Australian Statistical Conference, Wollogong, Australia**
                  Secretary of the Local Organising Committee
2023, December   **IASC-ARS Conference at Macquarie University, Sydney, Australia**
                  Chair of the Organising Committee
2022, Februry   **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. Liquet, 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 visualization 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

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.