Thomas Fung

Senior Lecturer in Statistics

Curriculum Vitae
September 2020

Department of Mathematics and Statistics, Macquarie University
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Education

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

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

Employment

08/2018–present **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, University of Sydney

07/2005–02/2010 **Tutor**
School of Mathematics and Statistics, University of Sydney

Professional Service

03/2020–present **President**
Statistical Society of Austrlia, NSW Branch

05/2019–present **Head of Discipline in Statistics**
Department of Mathematics and Statistics, Macquarie University

03/2019–03/2020 **Vice-President**
Statistical Society of Austrlia, NSW Branch

03/2019–present **Associate Editor**
Australian and New Zealand Journal of Statistics

01/2019–10/2019 **Statistics Seminar Organiser**
Department of Mathematics and 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 Austrlia, 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 Austrlia, 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

Article

2020 **Statistics: Your Ticket to Anywhere.**
BOMBACI BILGIN, D Bulger, T Fung. Statistics Education Research Journal, 19 (1)

2018 **Quantile function expansion using regularly varying functions**
T Fung, E Seneta. Methodology and Computing in Applied Probability, 20 (4), 1091-1103

2016 **Tail asymptotics for the bivariate skew normal**
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**
T Fung, E Seneta. Journal of Multivariate Analysis, 128, 62-72

2014 **The deviance information criterion in comparison of normal mixing models**
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**
B Robertson, T Fung, N Weber. Mathematical Scientist, 38 (1)

2013 **Contaminated Variance–Mean mixing model**
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**
T Fung. Sri Lankan Journal of Applied Statistics, 12 (1), 27-40

2011 **Autocorrelation functions**
R Finlay, T Fung, E Seneta. International Statistical Review, 79 (2), 255-271

2011 **The bivariate normal copula function is regularly varying**
T Fung, E Seneta. Statistics and Probability Letters, 81 (11), 1670-1676

2011 **Tail dependence and skew distributions**
T Fung, E Seneta. Quantitative Finance, 11 (3), 327-333

2010 **Tail dependence for two skew t distributions**
T Fung, E Seneta. Statistics and probability letters, 80 (9-10), 784-791

2010 **Modelling and estimation for bivariate financial returns**
T Fung, E Seneta. International statistical review, 78 (1), 117-133

2010 **Extending the multivariate generalised t and generalised VG distributions**
T Fung, E Seneta. Journal of Multivariate Analysis, 101 (1), 154-164

2008 **A characterisation of scale mixtures of the uniform distribution**
T Fung, E Seneta. Statistics and Probability Letters, 78 (17), 2883-2888

2007 **Tailweight, quantiles and kurtosis: A study of competing distributions**
T Fung, E Seneta. Operations Research Letters, 35 (4), 448-454

2006 **Continuity corrections for integer-valued saddlepoint approximations**
T Fung, J Robinson. Statistics and probability letters, 76 (14), 1465-1469

Software development

2020 **survivalMPLdc: Penalised Likelihood for Survival Analysis with Dependent Censoring**
J. Xu, J. Ma, T. Fung

2019 **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

Teaching experience

Unit Convenor **Statistical Data Analysis (STAT1371, formerly as STAT171)**
2020 (6 weeks)

Lecturer **Introductory Statistics (STAT1170, formerly as STAT170)**
2019 (4 weeks)

Unit Convener **Modern Computational Statistical Methods (STAT8178, formerly as STAT878)**
2019 (6 weeks)

Unit Convenor **Applied Statistics (STAT2170/6180, formerly as STAT270/680)**
2017 (6 weeks), 2019 (1 week), 2020 (4 weeks)

Lecturer **Statistical Inference (STAT306/806)**
2015–2017 (6 weeks)

Unit Convenor **Generalized Linear Models (STAT8111, formerly as STAT811)**
2015 (9 weeks), 2019–2020 (6 weeks)

Unit Convenor **Research Frontiers in Statistics (STAT7900, formerly as STAT700)**
2013–2016 and 2017–2019 (2 weeks)

Unit Convenor **Stochastic Finance (STAT890)**
2012–2013 and 2015–2017 (6 weeks)

Unit Convenor **Computer Simulation (STAT2178, formerly as STAT278)**
2012–2013 (6 weeks), 2014–2016 (12 weeks), 2017 (6 weeks), 2018 (12 weeks)

Lecturer **Statistical Theory (STAT810)**
2013–2014 (6 weeks)

Unit Convenor **Statistical Design (STAT814)**
2010–2013 and 2018 (Additional Lectures for 3 weeks)

Unit Convenor **Statistical Modelling in Finance and Insurance (ACST602)**
2011–2013 (6 weeks)

Lecturer **Prelude to Bioinformatics (STAT830)**
2012 (6 weeks)

Lectuerer **Computer Applications in Business (MIST800)**
2010–2011 (6 weeks)

Lecturer **Gambling, Sport and Medicine (STAT175)**
2010 (4 weeks)

Unit Convenor **Graphics, Multivariate Methods and Data Mining (STAT302)**
2010 (12 weeks)

Presentation since 2015

2019, August 18–23 **62nd World Statistical Congress**
Kuala Lumpur, Malaysia

2019, June 25–27 **EcoSta**
Taichung, Taiwan

2018, October 31 **Statistics Seminar**
Department of Statistics and Actuarial Science, University of Hong Kong, Hong Kong

2018, October 28 **Statistics Seminar**
International Centre for Mathematical Research, Peking University, China

2018, October 11 **Statistics Seminar**
Department of Statistics and Actuarial Science, University of Hong Kong, Hong Kong

2018, September 13 **Statistics Seminar**
Research School of Finance, Actuarial Studies and Statistics (RSFAS), Australian National University, Australia

2018, August 26–30 **ISCB/ASC 2018**
Melbourne, Australia

2018, August 26-30 **Statistics Seminar**
Duke-NUS, Singapore

2018, July 28–August 2 **Joint Statistical Meetings (JSM)**
Vancouver, Canada

2017, December 16–18 **CMStatistics**
London, UK

2017, September 20 **NIASRA Seminar Series**
University of Wollongong, Australia

2017, July 16–21 **61st World Statistics Congress**
Marrakech, Morocco

2017, June 15–17 **EcoSta**
Hong Kong, China

2016, December 5–9 **Australian Statistical Conference (ASC)**
Canberra, Australia

2016, July 30–August 4 **JSM**
Chicago, USA

Conference organisation

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

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

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

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, 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–present **Manjula Schou**

4/2012–9/2012 **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

Master 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

Refereeing

Annals of the Institute of Statistical Mathematics, Australian and New Zealand Journal of Statistics, 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 Multivariate Analysis, Journal of Applied Mathematics, Journal of Statistical Computation and Simulation, Mathematics, PLOS ONE, Songklanakarin Journal of Science and Technology, Statistics and Probability Letters.