

Ali Eshragh

Curriculum Vitae

CONTACT INFORMATION	Carey Business School, Johns Hopkins University Washington, DC, United States	Ali.Eshragh@jhu.edu
WEBSITE	Homepage Google Scholar LinkedIn	
CURRENT POSITION	Associate Professor of Practice in Business Analytics Carey Business School, Johns Hopkins University Washington, DC, United States	
RESEARCH AFFILIATION	Institute for Data Intensive Engineering & Science Johns Hopkins University, United States	<i>Faculty Member</i>
	International Computer Science Institute University of California, Berkeley, United States	<i>Affiliated Researcher</i>
RESEARCH INTERESTS	Statistical Machine Learning: Reinforcement Learning, Decision-Focused Learning, Off-Policy Evaluation Stochastic Processes and Optimization: Markov Decision Processes (MDPs), Stochastic Dynamic Programming, Sequential Decision-Making under Uncertainty Time Series Analysis: Scalable Algorithms for Large-Scale and High-Dimensional Time Series Computational Statistics: Optimization for Large-Scale Models, Monte Carlo Simulation Methods Application Areas: Supply Chains and Logistics, Demand Forecasting, Healthcare Analytics and Public Health	
EDUCATION	University of South Australia, Australia Ph.D. in Applied Mathematics (Stochastic Operations Research) <i>Specialization:</i> Markov Decision Processes and Computational Complexity <i>Thesis:</i> Hamiltonian Cycles and the Space of Discounted Occupational Measures <i>Advisor:</i> Prof. Jerzy A. Filar	<i>August 2011</i>
	Sharif University of Technology, Iran M.Sc. in Industrial Engineering (Stochastic Operations Research) <i>Specialization:</i> Statistical Modeling and Stochastic Optimization <i>GPA:</i> 89.0% <i>Thesis:</i> Application of Decision on Beliefs in Response Surface Methodology	<i>January 2004</i>
	Sharif University of Technology, Iran B.Sc. in Industrial Engineering (Stochastic Operations Research) <i>Specialization:</i> System Analysis <i>GPA:</i> 87.5% <i>Thesis:</i> A New Approach to Distribution Fitting: Decision on Beliefs	<i>September 2001</i>

TRAINING AND CERTIFICATES	Department of Computer Science, Stanford University Machine Learning (CS229) 8-week course (Summer Quarter) – Overall Grade: 100% (A ⁺)	<i>August 2025</i>
	Department of Computer Science, Stanford University Reinforcement Learning (CS234) 10-week course (Winter Quarter) – Overall Grade: 100% (A ⁺)	<i>March 2025</i>
	School of Computer Science, Carnegie Mellon University Machine Learning: Fundamentals and Algorithms 10-week online course – Overall Grade: 100%	<i>November 2021</i>
	DeepLearning.AI (Coursera) Deep Learning Specialization 5-month online program including: • Neural Networks and Deep Learning • Improving Deep Neural Networks • Structuring Machine Learning Projects • Convolutional Neural Networks • Sequence Models Overall Grade: 100%	<i>September 2020</i>
HONORS AND AWARDS	Staff Excellence Award – Values Award Category , University of Newcastle	<i>2020</i>
	Rising Star Award , Australian Society for Operations Research	<i>2017</i>
	Teaching Excellence and Contribution to Student Learning Team Award – Runner-up , University of Newcastle	<i>2016</i>
	PhD Research Excellence – Runner-up , South Australia Science Excellence Awards (Physical Sciences, Mathematics, and Engineering), Government of South Australia	<i>2011</i>
	B.H. Neumann Prize – Runner-up , Best Student Talk, 54 th Annual Australian Mathematical Society Conference	<i>2010</i>
	Endeavour International Postgraduate Research Scholarship , Australian Government	<i>2008–2011</i>
	Best Paper Award , 5 th International Industrial Engineering Conference	<i>2005</i>
	Best Bachelor Final Project Award , R&D Department, Schlumberger, France	<i>2002</i>
	Ranked First (out of approximately 5,000 entrants) in the National Masters Entrance Exam of Iranian Universities	<i>2001</i>
	Best Student Award , Sharif University of Technology	<i>2001</i>

RESEARCH
GRANTS: MAJOR
COMPETITIVE
GRANTS

Total Awarded Funds: AU\$2,742,088 (approximately US\$1.8 million)

Note: *In the Australian research funding system, the **Australian Research Council** (ARC) is equivalent in role and prestige to the U.S. **National Science Foundation** (NSF), with the position of “Lead Chief Investigator” (Lead CI) corresponding to a “Lead Principal Investigator” (Lead PI) and “CI” corresponding to a “Co-PI”.*

- **Lead CI**, Large Markov Decision Processes and Combinatorial Optimization, *ARC Discovery Project*, AU\$383,000 2022–2024
(fully awarded but withdrawn due to departure from Australia to Johns Hopkins University)
- **Lead CI**, Stochastic Analysis of the COVID-19 Population, *ARC Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS)*, AU\$6,890 2020–2022
- **CI**, Big Time Series Data and Randomized Numerical Linear Algebra, *ACEMS*, AU\$11,580 2020
- **CI**, Approximate Solutions to Large Markov Decision Processes, *ACEMS*, AU\$12,000 2019
- **CI**, Industrial Transformation Training Centre for Food and Beverage Supply Chain Optimization, *ARC Industrial Transformation Training Centre*, AU\$2,119,872 2016–2020
- **CI**, Higher Education Participation and Partnerships Grant, *Australian Government, Department of Education and Training*, AU\$161,151 2016

RESEARCH
GRANTS: OTHER
AWARDS AND
TRAVEL GRANTS

- **Lead CI**, Rapidly Mixing Markov Chains and the Hamiltonian Cycle Problem, *Priority Research Centre for Computer-Assisted Research Mathematics and its Applications (CARMA)*, AU\$30,000 2014–2016
- **Lead CI**, New Staff Grant, *University of Newcastle*, AU\$10,000 2014
- **CI**, Application of Simulation-Based Optimization Algorithms in Sustainable Logistics and Supply Chain Management, *School of Management, University of South Australia*, AU\$10,000 2011
- **CI**, Application of Non-Smooth Optimization Methods for the Hamiltonian Cycle Problem, *Barbara Hardy Institute, University of South Australia*, AU\$3,500 2010
- **Lead CI**, International Travel Grant, *University of South Australia*, AU\$4,095 2009

RESEARCH
GRANTS:
SELECTED GRANT
SUBMISSIONS

- **Lead PI**, Transforming Healthcare with Scalable and Reliable Decision-Focused Learning for Large-Scale Markov Decision Processes, *Submitted to NSF; not funded, with revision planned for resubmission in 2026*, US\$1,200,000 2025

RESEARCH
OUTCOMES:
SUBMITTED AND
UNDER REVIEW

Note: * denotes a graduate student or postdoctoral researcher under my supervision or mentorship.

1. **A. Eshragh**, S. Alizamir, K. Bandara, F. Iravani, and B. Fahimnia, Understanding Online Consumer Behavior in E-commerce Supply Chains: An Interpretable Machine Learning Approach, *Revise and Resubmit at OMEGA*, 2026.
2. G. Dunn*, E. Stojanovski, B. Lamichhane, H. Charkhgard, and **A. Eshragh**, Modified Dynamic Programming Algorithms for Order Picking in Single-Block and Two-Block Rectangular Warehouses, *Submitted to Computers & Operations Research*, 2026.
3. G. Dunn*, E. Stojanovski, B. Lamichhane, H. Charkhgard, and **A. Eshragh**, Strict Elimination of Double Traversals in Outer Subaisles and Two-Block Rectangular Warehouses, *Submitted to Operations Research Letters*, 2025.
4. G. Dunn*, H. Charkhgard, **A. Eshragh**, and E. Stojanovski, Deterministic Structure of Vertical Configurations in Minimal Picker Tours for Rectangular Warehouses, *Submitted to Operations Research Letters*, 2025.

RESEARCH
OUTCOMES:
PREPRINTS AND
WORKING PAPERS

6. A. Fattahi, **A. Eshragh**, B. Aslani, and M. Rabiee, Ranking Vectors Clustering: Theory and Applications, *arXiv preprint arXiv:2507.12583*.
7. E. Harris*, **A. Eshragh**, B.P. Lamichhane, J. Shaw-Carmody* and E. Stojanovski, Efficient Data-Driven Leverage Score Sampling Algorithm for the Minimum Volume Covering Ellipsoid Problem in Big Data, *arXiv preprint arXiv:2411.03617*.
8. G. Dunn*, H. Charkhgard, **A. Eshragh**, S. Mahmoudiazlou*, and E. Stojanovski, Deep Reinforcement Learning for Picker Routing Problem in Warehousing, *arXiv preprint arXiv:2402.03525*.
9. V. Dewanto*, G. Dunn*, **A. Eshragh**, M. Gallagher, and F. Roosta, Average-reward Model-free Reinforcement Learning: A Systematic Review and Literature Mapping, *arXiv preprint arXiv:2010.08920*.
10. **A. Eshragh**, G. Livingston, T.M. McCann*, and L. Yerbury*, Rollage: Efficient Rolling Average Algorithm to Estimate ARMA Models for Big Time Series Data, *arXiv preprint arXiv:2103.09175*.
11. **A. Eshragh**, O.D. Pietro*, and M. Saunders, Toeplitz Least Squares Problems, Fast Algorithms, and Big Data, *arXiv preprint arXiv:2112.12994*.
12. **A. Eshragh**, Y. Li, L. Yerbury*, F. Roosta, and M.W. Mahoney, Efficient Leverage Score Subsampling Methods with Applications in Large-Scale Energy Market Demand Forecasting, *Work in Progress*.
13. **A. Eshragh**, A. Fattahi, Y. Li, and K. Wang, Bridging Data-Driven Learning and Optimization for Scalable and Efficient Solutions in Large-Scale Markov Decision Processes, *Work in Progress*.
14. **A. Eshragh**, Y. Li, K. Wang, and B. Xiang*, Decision-Focused Offline Deep Reinforcement Learning for Healthcare Policy Optimization, *Work in Progress*.

13. G. Dunn^{*}, H. Charkhgard, **A. Eshragh**, and E. Stojanovski, Double Traversals in Optimal Picker Routes for Warehouses with Multiple Blocks, *Operations Research Letters*, 65:107397, 2026.
14. **A. Eshragh**, M.P. Skerritt^d, B. Salvye, and T. McCallum^{*}, Optimal Experimental Design for Partially Observable Pure Birth Processes, *PLoS One*, 20(8):e0328707, 2025.
15. S. Mahmoudinazlou^{*}, A. Sobhanan^{*}, H. Charkhgard, **A. Eshragh**, and G. Dunn^{*}, Deep Reinforcement Learning for Dynamic Order Picking in Warehouse Operations, *Computers and Operations Research*, 182:107112, 2025.
16. H. Charkhgard, H.R. Moghaddam^{*}, **A. Eshragh**, and S. Mahmoudinazlou^{*}, Solving Hard Bi-objective Knapsack Problems Using Deep Reinforcement Learning, *Discrete Optimization*, 55:100879, 2025.
17. A.S. Altamiranda^{*}, H. Charkhgard, I. Dayarianb, **A. Eshragh**, and S. Javadia^{*}, Learning to Project in Multi-objective Binary Linear Programming, *Optimization Letters*, 18(9):2051-2078, 2024.
18. **A. Eshragh**, F. Roosta, A. Nazari, and M. Mahoney, LSAR: Efficient Leverage Score Sampling Algorithm for the Analysis of Big Time Series Data, *Journal of Machine Learning Research*, 23:1-36, 2022.
19. **A. Eshragh**, B. Ganim^{*}, T. Perkins^{*}, and K. Bandara, The Importance of Environmental Factors in Forecasting Australian Power Demand, *Environmental Modeling & Assessment*, 27:1-11, 2021.
20. M. Abolghasemi^{*}, J. Hurley^{*}, **A. Eshragh**, and B. Fahimnia, Demand Forecasting in the Presence of Systematic Events: Cases in Capturing Sales Promotions, *International Journal of Production Economics*, 230:107892, 2020.
21. **A. Eshragh**, S. Alizamir, P. Howley, and E. Stojanovski, Modeling the Dynamics of the COVID-19 Population in Australia: A Probabilistic Analysis, *PLoS One*, 15(10):e0240153, 2020.
22. **A. Eshragh**, R. Esmailbeigi^{*}, and R. Middleton, An Analytical Bound on the Fleet Size in Vehicle Routing Problems: A Dynamic Programming Approach, *Operations Research Letters*, 48(3):350-355, 2020.
23. **A. Eshragh**, J. Filar, T. Kalinowski, and S. Mohammadian^{*}, Hamiltonian Cycles and Subsets of Discounted Occupational Measures, *Mathematics of Operations Research*, 45(2):403-795, 2020.
24. H. Charkhgard and **A. Eshragh**, A New Approach to Select the Best Subset of Predictors in Linear Regression Modeling: Bi-objective Mixed Integer Linear Programming, *ANZIAM Journal*, 62(1):64-75, 2019.
25. B. Fahimnia, H. Davarzani, and **A. Eshragh**, Performance Comparison of Three Meta-Heuristic Algorithms for Planning of a Complex Supply Chain, *Computers and Operations Research*, 89:241-252, 2018.
26. R. Esmailbeigi^{*}, **A. Eshragh**, R. Garcia-Flores, and M. Heydar^{*}, Whey Reverse Logistics Network Design: A Stochastic Hierarchical Facility Location Model, *Proceedings of the 22nd International Congress on Modeling and Simulation*, Hobart, Australia, 2017.
27. K. Avrachenkov, **A. Eshragh**, and J. Filar, On Transition Matrices of Markov Chains Corresponding to Hamiltonian Cycles, *Annals of Operations Research*, 243(1):19-35, 2016.

28. N.G. Bean, **A. Eshragh**, and J.V. Ross, Fisher Information for a Partially Observable Simple Birth Process, *Communications in Statistics: Theory and Methods*, 45(24):7161-7183, 2016.
29. N.G. Bean, R. Elliott, **A. Eshragh**, and J.V. Ross, On Binomial Observation of Continuous-time Markovian Population Models, *Journal of Applied Probability*, 52:457-472, 2015.
30. B. Fahimnia, J. Sarkis, A. Choudhary, and **A. Eshragh**, Tactical Supply Chain Planning Under a Carbon Tax Policy Scheme: A Case Study, *International Journal of Production Economics*, 164:206-215, 2015.
31. B. Fahimnia, J. Sarkis, and **A. Eshragh**, A Trade-off Model for Green Supply Chain Planning: A Leanness-Versus-Greenness Analysis, *OMEGA*, 54:173-190, 2015.
32. **A. Eshragh**, Fisher Information, Stochastic Processes, and Generating Functions, *Proceedings of the 21st International Congress on Modeling and Simulation*, Gold Coast, Australia, 2015.
33. **A. Eshragh** and J. Filar, Hamiltonian Cycles, Random Walks, and the Geometry of the Space of Discounted Occupational Measures, *Mathematics of Operations Research*, 36(2):258-270, 2011.
34. **A. Eshragh**, J. Filar, and M. Haythorpe, A Hybrid Simulation-optimization Algorithm for the Hamiltonian Cycle Problem, *Annals of Operations Research*, 189:103-125, 2011.
35. K. Avrachenkov, **A. Eshragh**, and J. Filar, Markov Chains and Hamiltonian Transition Matrices, *Proceedings of the 5th International ICST Conference on Performance Evaluation Methodologies and Tools*, Paris, France, 2011.
36. **A. Eshragh**, J. Filar, and A. Nazari, A Projection-Adapted Cross Entropy (PACE) Method for Transmission Network Planning, *Energy Systems*, 2(2):189-208, 2011.
37. **A. Eshragh** and M. Modarres, A New Approach to Distribution Fitting: Decision on Beliefs, *Journal of Industrial and Systems Engineering*, 3(1):56-71, 2009.
38. H. Mahlooji, **A. Eshragh**, H. Abouee Mehrizi, and N. Izady, Uniform Fractional Part: A Simple Fast Method for Generating Continuous Random Variates, *Scientia Iranica*, 15(5):613-622, 2008.

PRESENTATIONS:
INTERNATIONAL
CONFERENCES

1. Scalable Data-Driven Time Series Analytics with Applications in the Energy Sector, *The 2025 INFORMS Annual Meeting*, Atlanta, USA, 2025.
2. An Efficient Algorithm for Approximating ARMA Model Fitting in Large-scale Time Series Data, *The 43rd International Symposium on Forecasting (ISF)*, Virginia, USA, 2023.
3. Efficient Leverage Score Sampling Algorithm for the Analysis of Big Time Series Data, *The 2021 INFORMS Annual Meeting*, Anaheim/Online, USA, 2021.
4. A New Fast Algorithm to Approximate the Leverage Scores of Big Time Series Data: Theory and Application, *The 20th INFORMS Applied Probability Society Conference*, Brisbane, Australia, 2019.
5. Optimal Experimental Design for a Partially Observable Simple Birth Process, *The 2018 INFORMS Annual Meeting*, Phoenix, USA, 2018.

6. A New Approach to Select the Best Subset of Predictors in Linear Regression Modeling, *The 61st Australian Mathematical Society Conference*, Sydney, Australia, 2017.
7. Fisher Information, Stochastic Processes and Generating Functions, *The 18th INFORMS Applied Probability Conference*, Istanbul, Turkey, 2015.
8. Fisher Information, Stochastic Processes and Generating Functions, *The 21st International Congress on Modeling and Simulation*, Gold Coast, Australia, 2015.
9. Approximating the Fisher Information for a Partially-Observable Growing Population, *ICERM Workshop on Challenges in 21st Century Experimental Mathematical Computation*, Providence, USA, 2014.
10. Random Walks, Polyhedra and Hamiltonian Cycles, *CARMA Workshop on Optimization, Nonlinear Analysis, Randomness & Risk*, Newcastle, Australia, 2014.
11. On Binomial Observations of Continuous-Time Markov Chains, *The 57th Australian Mathematical Society Conference*, Sydney, Australia, 2013.
12. Fisher Information for a Partially-Observable Simple Birth Process, *Australia and New Zealand Applied Probability Workshop*, Brisbane, Australia, 2013.
13. Optimal Observation Times for a Partially-Observable Pure Birth Process, *The 26th European Conference on Operational Research*, Rome, Italy, 2013.
14. Hamiltonian Cycles, Extreme Points and Rapidly Mixing Markov Chains, *Hamiltonian Cycle, Traveling Salesman and Related Optimization Problems Workshop*, Adelaide, Australia, 2012.
15. Optimal Experimental Design for a Pure Birth Process with Incomplete Information, *The 25th European Conference on Operational Research*, Vilnius, Lithuania, 2012.
16. A Modified Cross Entropy Method for the Optimization of an Environmentally Sustainable Supply Chain, *The 25th European Conference on Operational Research*, Vilnius, Lithuania, 2012.
17. Optimal Observations of a Growing Population, *The 48th Australian and New Zealand Industrial and Applied Mathematics Conference*, Warrnambool, Australia, 2012.
18. Polynomial Limit Control Algorithm to Identify Nearly all Cubic, Non-Hamiltonian, Graphs, *The 19th Triennial Conference of the IFORS*, Melbourne, Australia, 2011.
19. On Random Graphs, Random Walks and the Hamiltonian Cycle Problem, *The 54th Annual Australian Mathematical Society Conference*, Brisbane, Australia, 2010.
20. A Random Pivoting Algorithm for the Hamiltonian Cycle Problem, *The 24th European Conference on Operational Research*, Lisbon, Portugal, 2010.
21. Investigating Hamiltonian Cycles through Random Walks, *The 46th Australian and New Zealand Industrial and Applied Mathematics Conference*, Queenstown, New Zealand, 2010.
22. A New Random Algorithm for the Hamiltonian Cycle Problem, *The 23rd European Conference on Operational Research*, Bonn, Germany, 2009.

23. A Hybrid Simulation-Optimization Algorithm for the Hamiltonian Cycle Problem, *The 45th Australian and New Zealand Industrial and Applied Mathematics Conference*, Caloundra, Australia, 2009.
24. A New Approach to Response Surface Methodology, *The 5th International Industrial Engineering Conference*, Tehran, Iran, 2005.
25. A New Approach to Distribution Fitting: Decision on Beliefs, *The 53rd Session of International Statistical Institute*, Seoul, South Korea, 2001.
26. Order Statistics and Their Applications, *The 1st Iranian Statistical Student Conference*, Tehran, Iran, 1999.

PRESENTATIONS:
INVITED SEMINARS

1. Efficient Models and Algorithms for the Analysis of Big Time Series Data, *International Computer Science Institute*, University of California at Berkeley, USA, April 13, 2022.
2. Randomized Numerical Linear Algebra and the Analysis of Big Time Series Data, *Simons Institute for the Theory of Computing*, University of California at Berkeley, USA, December 16, 2019.
3. Efficient Leverage Score Sampling for the Analysis of Big Time Series Data, *School of Mathematics and Statistics*, University of Melbourne, Australia, October 21, 2019.
4. Hamiltonian Cycles, Polytopes and Random Walks, *Colloquium – School of Mathematics and Physics*, University of Queensland, Australia, February 18, 2019.
5. Hamiltonian Cycles and Subsets of Discounted Occupational Measures, *Linear Algebra and Optimization Seminars – Institute for Computational & Mathematical Engineering*, Stanford University, USA, October 25, 2018.
6. Hamiltonian Cycles, Polytopes and Markov Chains, *Simons Institute for the Theory of Computing*, University of California at Berkeley, USA, February 19, 2016.
7. Fisher Information, Stochastic Processes and Generating Functions, *Colloquium – School of Mathematics and Statistics*, University of New South Wales, Australia, October 8, 2015.
8. Computational Complexity of the Fisher Information, *INRIA – Paris*, France, October 6, 2014.
9. Binomial Observations, Fisher Information and Optimal Sampling Times, *Colloquium – School of Mathematical and Physical Sciences*, University of Newcastle, Australia, November 14, 2013.
10. P or NP: That Is the Question, *Undergraduate Seminar – School of Mathematical Sciences*, University of Adelaide, Australia, May 22, 2012.
11. Can Hamiltonian Cycle Problem on a Random Graph be Solved with High Probability in Polynomial Time?, *Colloquium – Faculty of Information Technology*, Monash University, Australia, February 29, 2012.
12. Hamiltonian Cycles and Random Walks, *Colloquium – School of Computer Science*, University of Adelaide, Australia, December 7, 2011.

13. Hybrid Simulation-Optimization Algorithm for Combinatorial Optimization Problems, *Divisional Research Day – University of South Australia*, Australia, September 10, 2010.
14. Hamiltonian Cycles, Random Walks and Discounted Occupational Measures, *Department of Applied Mathematics*, University of Twente, The Netherlands, June 22, 2010.
15. Decision on Beliefs: Concepts and Applications, *Indian Statistical Institute – New Delhi*, India, March 2004.

TEACHING **Carey Business School, Johns Hopkins University** *2022–Present*
 EXPERIENCE: Statistical Analysis, Forecasting Models for Business Intelligence, Simulation for
 COURSES TAUGHT Business Applications, Business Analytics.

School of Information and Physical Sciences, University of Newcastle
(formerly School of Mathematical and Physical Sciences) *2014–2022*

Deterministic and Stochastic Optimization, Markov Chains and Their Applications, Forecasting with Linear Time Series Models, Engineering Statistics, Statistical Reasoning and Literacy, Data Analytics for Business Intelligence, Supply Chain Optimization, Business Decision Making.

School of Computer and Mathematical Sciences, University of Adelaide
(formerly School of Mathematical Sciences) *2013–2014*

Statistics in Engineering.

TEACHING **Carey Business School, Johns Hopkins University**
 EXPERIENCE:
 COURSE
 DEVELOPMENT

- Designed and developed all teaching and assessment materials for the newly established elective course **AI-Driven Sequential Decision Making**, offered as part of the Master of Business Analytics and Artificial Intelligence program.
- Designed and developed all teaching and assessment materials for the newly established elective course **Forecasting Models for Business Intelligence**, offered as part of the Master of Business Analytics and Artificial Intelligence program.
- Developed all teaching and assessment materials, including lecture slides and two new case studies, for the elective course **Simulation for Business Applications**, offered as part of the Master of Business Analytics and Artificial Intelligence program.
- Developed all teaching and assessment materials for the core course **Statistical Analysis**, offered as part of all Business programs.

School of Information and Physical Sciences, University of Newcastle

- Designed and developed all teaching and assessment materials for the newly established third-year core course **Deterministic and Stochastic Optimization**, offered as part of Mathematics and Statistics programs.
- Designed and developed all teaching and assessment materials for the newly established second-year core course **Engineering Statistics**, offered as part of Electronic and Electrical Engineering program.

- Developed the course syllabus, teaching materials, and assessments for the elective third-year/graduate course **Forecasting with Linear Time Series Models**, offered as part of Mathematics, Statistics, Engineering, and Business programs.
- Designed all teaching and assessment materials for the first-year core course **Business Decision Making**, offered in blended mode as part of Data Science program.

School of Computer and Mathematical Sciences, University of Adelaide

- Developed all teaching and assessment materials for the compulsory graduate course **Statistics in Engineering**, offered as part of Engineering programs.

SUPERVISING EXPERIENCE

- **Ph.D. Student: George Dunn** 2022–2026
Deep Reinforcement Learning for Combinatorial Optimization Problems
- **Ph.D. Student: Elizabeth Harris** 2020–2025
Leverage Score Sampling for the Minimum Volume Covering Ellipsoid Problem
- **Ph.D. Student: Vektor Dewanto** 2018–2021
Discounting-free Policy Gradient Reinforcement Learning from Transient States
- **Honours Student: Oliver Di Pietro** 2021
Toeplitz Least Squares Problems, Fast Algorithms and Big Data
- **Honours Student: Luke Yerbury** 2020
Sequential Approximate Leverage-Score Methods for Scalable Data Analytics
- **Honours Student: Tom McCarthy McCann** 2020
Efficient Rolling Average Algorithm to Estimate ARMA Models for Big Time Series Data
- **Honours Student: Riley Cooper** 2019
A New State Aggregation Framework to Solve Large Markov Decision Processes
- **Honours Student: Benjamin Moran** 2017–2018
Exploration of Flu-tracking Approaches Using Time Series Models
- **Honours Student: Thomas McCallum** 2016–2017
Optimal Observation Times, Fisher Information and Generating Functions

Note: The Honours program in Australia is a one-year advanced degree following a bachelor's, combining graduate-level coursework with a substantial research project and broadly comparable to the first year of a U.S. master's program.

POSITIONS AND PROFESSIONAL EXPERIENCE

- **Associate Professor of Practice in Business Analytics** 2022–Present
Carey Business School, Johns Hopkins University, United States
- **Senior Lecturer in Data Science** 2018–2022
School of Information and Physical Sciences, University of Newcastle, Australia
(Tenured appointment, Level C – equivalent to Associate Professor)
- **Lecturer in Statistics and Optimization** 2014–2017
School of Mathematical and Physical Sciences, University of Newcastle, Australia
(Level B – equivalent to Assistant Professor)

PROFESSIONAL
SERVICES

- **Lecturer in Stochastic Operations Research** *2013–2014*
 School of Mathematical Sciences, University of Adelaide, Australia
(Level B – equivalent to Assistant Professor)
- **Postdoctoral Research Associate** *2011–2013*
 School of Mathematical Sciences, University of Adelaide, Australia
(Developed efficient experimental design algorithms for partially observable Markovian population models, with applications in public health)
- **Consultant** *2011–Present*
 Worked with several industries and organizations, including Coca-Cola, Nestlé, and Sanitarium Health & Wellbeing, Australia
- **Associate Editor, *The ANZIAM Journal*** (Cambridge University Press) *2025–Present*
- **Chair and Co-Organizer**, Invited Session on “Recent Advances in Data-Driven Decision-Making and Analytics”, Artificial Intelligence Track, INFORMS Annual Meeting (scheduled), Atlanta, USA *26–29 October 2025*
- **Faculty Co-Leader**, Junior Faculty Mentoring Program, Carey Business School, Johns Hopkins University *2025–Present*
- **Chair and Organizer**, Business Analytics, Artificial Intelligence, and Cherry Blossom Conference, Washington D.C. *22–23 March 2025*
- **Chair and Organizer**, Carey AI Integration Gathering (CRAIG), Washington D.C. *2 October 2024, 28 May 2025, & 9 October 2025*
- **Organizer**, Machine Learning Reading Group, Carey Business School, Johns Hopkins University *2024–2025*
- **Member**, Grade Appeals Committee, Carey Business School, Johns Hopkins University *2024–Present*
- **Member**, Diversity and Inclusion Committee, Carey Business School, Johns Hopkins University *2023–Present*
- **Program Director**, Graduate Certificate in Data Analytics/Science, University of Newcastle *2021*
- **Associate Editor and Editorial Board Member**, *Environmental Modeling & Assessment* (Springer Journal) *2020–Present*
- **Chair and Organizer**, Data Science Down Under International Workshop, Newcastle *8–12 December 2019*
- **Deputy Head of School – Industry and Engagement Coordinator**, School of Information and Physical Sciences, University of Newcastle *2019–2021*
- **Academic Representative**, Organizing Committee of the Quarterly Central Coast and Hunter Area Supply Chain & Logistics Forum *2019–2021*
- **Member**, Faculty of Science Board, University of Newcastle *2019–2020*
- **Chair and Organizer**, Applied Probability, Combinatorics and Optimization Workshop, Newcastle *17 December 2016*
- **Member**, Faculty of Science Board, University of Newcastle *2016–2017*

- **Member**, Progress and Appeals Committee, Faculty of Science, University of Newcastle 2016–2021
- **Ph.D. Student Coordinator**, School of Mathematical and Physical Sciences, University of Newcastle 2014–2017
- **Organizer**, Hamiltonian Cycle and Traveling Salesman Problems: Theory and Computation Workshop, Adelaide 14–15 December 2012
- **Convener**, Stochastic Lunch: Fortnightly Research Presentation Series, School of Mathematical Sciences, University of Adelaide 2012
- **Returning Officer**, Australian and New Zealand Industrial and Applied Mathematics (ANZIAM) Division 2012–2014
- **Referee for Journals:**
Annals of Applied Statistics, Annals of Operations Research, ANZIAM Journal, Environmental Modeling & Assessment, International Journal of Production Economics, International Journal of Production Research, Journal of Applied Probability, Journal of the American Statistical Association, Management Science, Mathematics of Operations Research, Operations Research, Queueing Systems, Random Structures and Algorithms 2009–Present

PROFESSIONAL AFFILIATIONS

- Institute for Operations Research and the Management Sciences (INFORMS)
- International Institute of Forecasting (IIF)
- Australian Society for Operations Research (ASOR)

SPECIAL SKILLS: SOFTWARE AND PROGRAMMING

- **Mathematical Packages:** *Matlab, Mathematica*
- **Statistical Packages:** *R, SPSS*
- **Optimization Packages:** *CPLEX, Lingo*
- **Simulation Packages:** *@Risk, Arena, Enterprise Dynamics*
- **Programming Languages:** *C, Python*
- **Typesetting and Documentation:** *L^AT_EX, MS Office*