Ryan Cory-Wright

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Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, June 2022. GPA: 5.0
Advisor: Prof. Dimitris Bertsimas

University of Auckland, Auckland, New Zealand
BE (Hons) in Engineering Science, May 2017. GPA 8.84/9.00.
Thesis title: *Pricing wind under uncertainty*
Advisors: Profs. Andy Philpott and Golbon Zakeri.
Completed in three years via the accelerated pathway program; a highly intensive program which comprises direct entry to part II and three additional courses per year.

Publications

"A Unified Approach to Mixed-Integer Optimization: Nonlinear Reformulations and Scalable Algorithms" with Dimitris Bertsimas and Jean Pauphilet, In Preparation.

"On stochastic auctions in risk-averse electricity markets with uncertain supply", with Golbon Zakeri, In Preparation.

"A scalable algorithm for sparse and robust portfolios", with Dimitris Bertsimas, Operations Research, Under major revisions (submitted June 2018).

"Payment mechanisms for electricity markets with uncertain supply", with Andy Philpott and Golbon Zakeri, Operations Research Letters. **46**(1):116-121, 2018. https://doi.org/10.1016/j.orl.2017.11.017

Presentations

"A scalable algorithm for sparse and robust portfolios", with Dimitris Bertsimas, presented at INFORMS, November 2018; LIDS student conference, January 2019.

"Payment mechanisms and risk-aversion in electricity markets with uncertain supply", with Golbon Zakeri, presented at ISMP Bordeaux, July 2018.

"Stochastic Scheduling Pricing and Dispatch", with Golbon Zakeri and Andy Philpott, presented at the EPOC mini workshop, July 2017.

"Cost-Recovering, Revenue-Adequate Single-Settlement Schemes for Electricity Markets", with Andy Philpott and Golbon Zakeri, presented at ORSNZ, December 2016.

Honors and Awards

2017 Senior Scholar Award, University of Auckland
For the highest GPA within graduating students in Engineering Science.

2016 ORSNZ Student Paper Competition, 1st Place
"Cost-Recovering, Revenue-Adequate Single-Settlement Schemes for Electricity Markets", with Andy Philpott and Golbon Zakeri.
For the best conference paper by a presenter within 5 years of graduation.

2014-2016 Deans Honours List x3, Faculty of Engineering, University of Auckland
For earning a GPA within the top 5% of students in Engineering Science in a calendar year.

2014-2016 First in Course Award x5, University of Auckland
For earning the highest mark in a course at the University of Auckland.

2013 NZQA Outstanding Scholar Award
For placing in the top 50 students in the 2013 NZQA scholarship exams.

Work and Research Experience

2017-Present **Massachusetts Institute of Technology,** Cambridge, MA
Research Assistant
Advisor: Dimitris Bertsimas
Developing high-quality interpretable solutions to problems which arise at the intersection of optimization and machine learning; for instance, sparsity-constrained optimization problems.

2016-2017 **University of Auckland**, Auckland, New Zealand
Research Assistant
Advisor: Golbon Zakeri
Developed methods for incorporating intermittent renewable energy into wholesale electricity markets via stochastic optimization. This comprised back-testing a stochastic dispatch mechanism on the New Zealand Electricity Market, extending the stochastic dispatch mechanism to incorporate risk-aversion, and measuring the impact of the dispatch mechanism on the aggregate system.

2014-2016 **Derceto Ltd**, Auckland, New Zealand
Assistant Optimization Engineer
Assisted with installing a pump-scheduling optimization tool for two municipal water providers.
Created a VBA/SQL tool to automate a 9-step process for updating historical demand curves.
Refurbished 5+ existing VBA spreadsheet tools used in day-to-day operations.

Teaching Experience

IAP 2019 **15.S60 Computing in Operations Research and Statistics TA,** Instructor in Charge: Brad Sturt
Teaching assistant for an IAP course which aims to provide PhD students with an overview of state-of-the-art software tools used in optimization and statistcs.

Fall 2018 **15.093 Optimization Methods TA,** Instructor in Charge: Bart van Parys
Teaching assistant for a course which aims to provide masters students with a unified overview of the main algorithms and areas of application in optimization.
Duties: Assisting students, leading recitations, writing and marking assignments and exams.

Service

2018-2019 **Reviewer,** European Journal of Operational Research

Skills and Activities

Programming Languages: Julia, R, SQL, MATLAB, C++, HTML, CSS.
Optimization Software: JuMP, AMPL, GAMS, Gurobi, CPLEX, MOSEK.
Software: LaTeX, InDesign, Photoshop.
Languages: English (native), French (conversational), German (beginner).
Extracurriculars: Skiing, Running, Hiking, Water Polo.

Citizenship Citizen of New Zealand, Ireland.