Ryan Cory-Wright

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Education Massachusetts Institute of Technology, Cambridge, MA, USA

Candidate for PhD in Operations Research; expected completion, May 2022. GPA: 5.0/5.0

Advisor: Dimitris Bertsimas

University of Auckland, Auckland, New Zealand

BE (1st Class Honours) in Engineering Science, May 2017. GPA 8.84/9.00 (9.00/9.00 in Major). Advisors: Golbon Zakeri, Andy Philpott.

Research Interests

Methodological: Optimization (discrete/conic/stochastic/robust), machine learning, statistics

Applications: Finance, energy (market design/renewable integration)

Publications

On Polyhedral and Second-Order Cone Decompositions of Semidefinite Optimization Problems with Dimitris Bertsimas, Operations Research Letters, under review.

On Stochastic Auctions in Risk-Averse Electricity Markets With Uncertain Supply with Golbon Zakeri, Operations Research Letters, under review.

A Unified Approach to Mixed-Integer Optimization: Nonlinear Formulations and Scalable Algorithms with Dimitris Bertsimas and Jean Pauphilet, Operations Research, under review.

Awarded 1st place, INFORMS Computing Society Student Paper Competition (2019).

A Scalable Algorithm for Sparse Portfolio Selection

with Dimitris Bertsimas, Operations Research, under 2nd round of review (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.

Awarded 1st place, ORSNZ Young Practitioner's Prize (2016).

Talks

A Unified Approach to Mixed-Integer Optimization: Nonlinear Formulations and Scalable Algorithms Presented at: ICCOPT, August 2019; INFORMS Annual Meeting, October 2019.

A Scalable Algorithm for Sparse and Robust Portfolios

Presented at: INFORMS, November 2018; LIDS student conference, January 2019.

Payment Mechanisms and Risk-Aversion in Electricity Markets With Uncertain Supply

Presented at: EPOC mini workshop, July 2017; ISMP Bordeaux, July 2018.

Cost-Recovering, Revenue-Adequate Single-Settlement Schemes for Electricity Markets Presented at: ORSNZ, December 2016.

Honors and Awards

2019 First place, INFORMS Computing Society (ICS) Student Paper Award

For: A Unified Approach to Mixed-Integer Optimization: Nonlinear Formulations and Scalable Algorithms

2017 Senior Scholar Award, University of Auckland (top of graduating class).

2016 First place, Young Practitioner's Prize, Operations Research Society of New Zealand.

For: Payment Mechanisms for Electricity Markets With Uncertain Supply

2014-2016 Deans Honours List, Faculty of Engineering, University of Auckland (top 5% of class).

2014-2016 First in Course Award x5, University of Auckland.

2013 NZQA Outstanding Scholar Award (top 50 high school students in New Zealand).

Research Experience

2017-Present Massachusetts Institute of Technology, Cambridge, MA, USA

Research Assistant

Advisor: Dimitris Bertsimas

2016-2017 University of Auckland, Auckland, New Zealand

Research Assistant Advisor: Golbon Zakeri

Teaching Experience

Fall 2019 15.095 Machine Learning Under a Modern Optimization Lens TA (MBaN/MSc/PhD level).

Instructor in charge: Dimitris Bertsimas

Teaching assistant for a course which provides masters/PhD students with a modern treatment of

Machine Learning using the lenses of convex, robust and mixed-integer optimization.

Duties: Assisting students, leading recitations, writing and marking assignments and exams.

Summer 2019 15.089 Analytics Capstone Project: Student Mentor. Instructor in charge: Dimitris Bertsimas

Advised a project completed by two MBaN students, who applied prescriptive analytics to prescribe actions which optimize fund flows for a large investment management company.

IAP 2019 15.S60 Computing in Operations Research and Statistics Instructor (MSc/PhD level).

 $Taught\ a\ 3-hour\ session\ which\ aims\ to\ provide\ PhD\ students\ with\ an\ overview\ of\ state-of-the-art$

software tools used in optimization and statistics. Material available here.

Fall 2018 15.093 Optimization Methods TA (MBaN/MSc level). 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.

Summer 2018 15.089 Analytics Capstone Project: Student Mentor. Instructor in charge: Dimitris Bertsimas

Advised a project completed by two MBaN students, who applied machine learning techniques to predict fund flows at the financial advisor level for a large investment management company.

Mentees received an award for the best capstone presentation in their graduating class.

Work Experience

2014-2016 Derceto Ltd, Auckland, New Zealand

Assistant Optimization Engineer

Assisted with installing a pump-scheduling optimization tool for two municipal water providers.

Refurbished 5+ VBA spreadsheet tools used in day-to-day operations.

Professional Activities and Service

2019 Session Chair, INFORMS 2019 Annual Meeting

2019 Tester and Proctor, MIT Operations Research Center Qualifying Exam

2018-present Reviewer, European Journal of Operational Research; INFORMS Journal On Computing

2017-present Student member, INFORMS; Mathematical Optimization Society

Skills and Activities

Programming Languages: Julia (preferred), R, VBA, SQL, MATLAB, C++, HTML, CSS.

Optimization Software: JuMP (preferred), CPLEX (preferred), MOSEK (preferred), most other

languages/solvers.

Languages: English (native), French (conversational), German (beginner).

Extracurriculars: Skiing, Running, Hiking.

Citizenship Citizen of New Zealand, Ireland.