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
Advisors: Golbon Zakeri, Andy Philpott.

Research Interests

Methodological: Optimization (discrete/conic/stochastic/robust), machine learning, statistics
Applications: Finance, energy (market design/renewable integration)

Publications

A Unified Framework for Low Rank Optimization
with Dimitris Bertsimas, Jean Pauphilet, to be submitted to SIAM 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).

On Polyhedral and Second-Order Cone Decompositions of Semidefinite Optimization Problems
with Dimitris Bertsimas, Operations Research Letters, in press (accepted December 2019).

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; MIT ORC Student Seminar Series (invited), November 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-present	**Coordinator,** MIT ORC Student Seminar Series
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

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.