Ryan Cory-Wright

Operations Research Center
Massachusetts Institute of Technology
77 Massachusetts Avenue, E40-103
Cambridge, MA 02139

Email: ryancw@mit.edu
Cell: 617-955-5710

Education

Massachusetts Institute of Technology, Cambridge, MA
Candidate for PhD in Operations Research; expected completion, May 2022. GPA: 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: Andy Philpott, Golbon Zakeri.

Publications

"On Polyhedral and Second-Order Cone Decompositions of Semidefinite Optimization Problems", with Dimitris Bertsimas, in preparation, targeted for Operations Research Letters.

"On Stochastic Auctions in Risk-Averse Electricity Markets With Uncertain Supply", with Golbon Zakeri, in preparation, targeted for Operations Research Letters.

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

"A Scalable Algorithm for Sparse Portfolio Optimization", with Dimitris Bertsimas.
Operations Research (under major revisions, originally 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

- Young Practitioner's Prize, Operations Research Society of New Zealand.

Presentations

"A Unified Approach to Mixed-Integer Optimization: Nonlinear Formulations and Scalable Algorithms", with Dimitris Bertsimas and Jean Pauphilet, presented at ICCOPT, August 2019; INFORMS, October 2019.

"A Scalable Algorithm for Sparse and Robust Portfolios", with Dimitris Bertsimas, presented at INFORMS, November 2018; ORC 65th Anniversary (poster), November 2018; LIDS student conference, January 2019; MIP Workshop (poster), July 2019.

"Payment Mechanisms and Risk-Aversion in Electricity Markets With Uncertain Supply", with Golbon Zakeri, presented at EPOC mini workshop, July 2017; ISMP Bordeaux, July 2018.

"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 (top of graduating engineering class).
2016 Young Practitioner's Prize, Operations Research Society of New Zealand.
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).

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, extending the mechanism to incorporate risk-aversion, and measuring the impact of the mechanism on the market.

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.

Teaching Experience

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.

Service

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

Skills and Activities

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

Citizenship Citizen of New Zealand, Ireland.