

CHENG GUO

204-222 Elm St. Toronto, ON M5T 1K5 (647) 949-7083 cguo@mie.utoronto.ca

<https://chengg04.github.io/>

<https://github.com/chengg04>

RESEARCH INTERESTS

- Methodology: Stochastic programming, Integer programming
- Application: Operating room scheduling, Power system, Energy market. Electric car sharing

EDUCATION

UNIVERSITY OF TORONTO

Toronto, ON

Ph.D. in Industrial Engineering, GPA: 3.95/4.00

Sep 2017-Present

- Advisor: Merve Bodur
- Thesis topic: Decomposition in stochastic programming and its applications
- Courses: Nonlinear Optimization, Integer Programming, Algorithm, Duality Theory, Constraint Programming, OM Matching Market, Scheduling, Math in Power System

COLUMBIA UNIVERSITY

New York, NY

M. S. in Operations Research

Sep 2015-Feb 2017

- Courses: Optimization (Ph.D. level), Transportation & Logistics, Stochastic Models, Simulation, Python

WUHAN UNIVERSITY

Wuhan, China

B. S. in Mathematics, B. A. in Economics

Sep 2011-Jun 2015

- Courses: Algebra, Statistics, Mathematical Analysis, Game Theory, Econometrics, Topology, Microeconomics
- Hongyi Outstanding Graduates

HONORS AND AWARDS

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| ▪ MIP Workshop Student Travel Support | 2019 |
| ▪ Bert Wasmund Graduate Fellowships in Sustainable Energy Research | 2018 |
| ▪ MIE Graduate Student Travel Grants | 2018 |
| ▪ Economics and Management School Scholarship | 2013-2014 |

PUBLICATIONS

“Bi-Objective Optimization Models for Network Interdiction.”, Y. Chen, C. Guo, and S. Yu. *Rairo-Oper. Res.*, 2019, 53(2) p. 461-472.

PAPERS UNDER REVIEW

“Logic-based Benders Decomposition and Binary Decision Diagram Based Approaches for Stochastic Distributed Operating Room Scheduling”, C. Guo, M. Bodur, D. Aleman, and D. Urbach, submitted.

WORK IN PROGRESS

Profitability in Unit Commitment Problem

Sep 2017-Present

- Solving the unit commitment problem with investment decisions

TALKS

“Incentive Compatibility for Power System Planning”

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| ▪ INFORMS Annual Meeting (upcoming). | <i>Oct 2019</i> |
| ▪ Optimization Days | <i>May 2019</i> |

“Logic-Based Benders Decomposition and Binary Decision Diagram Based Approaches for Stochastic Distributed Operating Room Scheduling”

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|--|-----------------|
| ▪ INFORMS Annual Meeting (upcoming) | <i>Oct 2019</i> |
| ▪ MIP Workshop (poster) | <i>Jul 2019</i> |
| ▪ INFORMS Computing Society Conference | <i>Jan 2019</i> |
| ▪ MIE Graduate Research Symposium (poster) | <i>Jun 2018</i> |

TEACHING EXPERIENCE

UNIVERSITY OF TORONTO

Tutorial Teaching Assistant in MIE335: Algorithms and Numerical Methods

Toronto, ON

Jan 2019-May 2019

WUHAN UNIVERSITY

Teaching Assistant in Probability Theory

Wuhan, China

Sep 2014-Jan 2015

WORKING EXPERIENCE

OMNIVEST CONSULTING

Data Analyst

New York

Jan 2017-April 2017

- Predicted the outcome of NFL with Naïve Bayes and SVM
- Scraped and cleaned large dataset with Python pandas, BeautifulSoup, Regex, etc.

PROJECT HIGHLIGHTS

Suggesting Number of Docks for Citi-bike Stations in NYC

Dec 2016

- Predicted bike demands using Random Forests
- Used M/M/1/K queue to optimize the number of docks in each cluster

Life Quality of Living Places in NYC

Dec 2015

- Built a website with Django, which evaluates the living quality of any neighborhood in New York City
- Analyzed criminal data from NYPD, using MySQL and Python numpy package

SKILLS

Programming Language: C++, Python, Julia, LaTeX, MATLAB, Excel VBA

Software: CPLEX, Gurobi, CP Optimizer, MiniZinc, GitHub, MySQL

Hobbies: Soccer, Watercolor

COMMUNITY INVOLVEMENT AND ACTIVITIES

U. of Toronto Operations Research Group: *Communications*

May 2018-Present

Columbia IEOR Mentorship Program: *Mentor*, mentoring Master's students

Jan 2018-Present

Columbia U. Financial Engineering Club: *Vice President*, organized trading competitions

Sep 2015-Dec 2017

Wuhan U. Women Soccer Team: *Captain*, came third in College Championship twice

May 2012-June 2015