CHENG GUO

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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

- 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"

- INFORMS Annual Meeting (upcoming). *Oct 2019*
- DIMACS Workshop on Mixed-Integer Nonlinear Programming (poster) *Oct 2019*
- Optimization Days *May 2019*

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

- INFORMS Annual Meeting (upcoming) *Oct 2019*
- MIP Workshop (poster) *Jul 2019*
- INFORMS Computing Society Conference *Jan 2019*
- MIE Graduate Research Symposium (poster) *Jun 2018*

TEACHING EXPERIENCE

UNIVERSITY OF TORONTO *Toronto, ON*
Tutorial Teaching Assistant in MIE562: Scheduling *Sep 2019-present*
Tutorial Teaching Assistant in MIE335: Algorithms and Numerical Methods *Jan 2019-May 2019*
WUHAN UNIVERSITY *Wuhan, China*
Teaching Assistant in Probability Theory *Sep 2014-Jan 2015*

WORKING EXPERIENCE

OMNIVEST CONSULTING *New York*
Data Analyst *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*