

# Cheng Guo

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RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Methodologies: Copositive Programming, Stochastic programming, Integer programming, Mixed-integer nonlinear programming, Decomposition methods</li><li>• Application areas: Energy markets, Power systems, Computational mechanism design, Healthcare</li></ul>	
EDUCATION	<b>University of Toronto</b> , Toronto, ON <i>Department of Mechanical and Industrial Engineering</i> Ph.D. candidate in Industrial Engineering (Operations Research), GPA: 3.96/4.00 <ul style="list-style-type: none"><li>• Advisor: Merve Bodur</li></ul>	2017 - Present
	<b>Columbia University</b> , New York, NY <i>Department of Industrial Engineering and Operations Research</i> M.S. in Operations Research	2015 - 2017
	<b>Wuhan University</b> , Wuhan, China <i>School of Economics and Management</i> B.A. in Economics B.S. in Mathematics <ul style="list-style-type: none"><li>• Hongyi Outstanding Graduates Award</li></ul>	2011 - 2015
PUBLICATIONS	<i>Journal Articles</i> <b>C. Guo</b> , M. Bodur, D. M. Aleman, and D. R. Urbach, <i>Logic-based Benders Decomposition and Binary Decision Diagram Based Approaches for Stochastic Distributed Operating Room Scheduling</i> , accepted for publication in <b>INFORMS Journal on Computing</b> , (2020). <a href="#">[pdf]</a> <ul style="list-style-type: none"><li>• Selected as a finalist in 2019 MIP Workshop Poster Competition.</li></ul> <i>Submitted</i> <b>C. Guo</b> , M. Bodur, J. A. Taylor, <i>Copositive Duality for Discrete Markets and Games</i> , submitted to <b>Operations Research</b> , (2021). <a href="#">[pdf]</a> <b>C. Guo</b> , M. Bodur, D. J. Papageorgiou, <i>Generation Expansion Planning with Revenue Adequacy Constraints</i> , major revision in <b>Computers &amp; Operations Research</b> , (2021). <a href="#">[pdf]</a>	
PAPERS IN PREPARATION	A. Deza, <b>C. Guo</b> , M. Bodur, <i>A Multistage Stochastic Integer Programming Approach to Distributed Operating Room Scheduling</i> , in preparation for <b>INFORMS Journal on Computing</b> . <ul style="list-style-type: none"><li>• Selected as a finalist in 2020 INFORMS Undergraduate OR Prize Competition.</li></ul>	

	<p><b>C. Guo</b>, M. Bodur, H. Nagarajan, <i>Cycle-based Polynomial Constraints for Tightening the Quadratic Convex Relaxations of the Alternating Current Optimal Power Flow Problem</i>. Working Paper.</p> <p><b>C. Guo</b>, M. Bodur, M. Cevik, <i>Learning for Cutting-plane Selection in Two-stage Stochastic Integer Programming</i>. Working Paper.</p>	
HONORS AND AWARDS	<p>MIP Workshop Student Travel Support, 2019</p> <p>Bert Wasmund Graduate Fellowships in Sustainable Energy Research, 2018</p> <p>MIE Graduate Student Travel Grant, 2018</p> <p>Economics and Management School Scholarship, 2013 - 2014</p>	
TEACHING EXPERIENCE	<p><b>University of Toronto</b>, Toronto, ON</p> <ul style="list-style-type: none"> <li>• MIE 562 - Scheduling (undergraduate elective / graduate) Tutorial teaching assistant Fall 2019, Fall 2020</li> <li>• MIE 335 - Algorithms and Numerical Methods (undergraduate core course) Tutorial teaching assistant Winter 2019</li> </ul> <p><b>Wuhan University</b>, Wuhan, China</p> <ul style="list-style-type: none"> <li>• Probability Theory (undergraduate core course) Teaching assistant Fall 2014</li> </ul>	
STUDENT SUPERVISION	<p>Anna Deza (co-supervised, B.A.Sc. 2020 → University of California, Berkeley Ph.D.)</p> <p>Ryan Do (co-supervised, B.A.Sc. 2019 → University of Toronto M.Eng.)</p>	
CONFERENCES AND TALKS	<p><i>Copositive Duality for Discrete Markets and Games</i></p> <ul style="list-style-type: none"> <li>• Grid Science Winter School (poster), Virtual January 2021</li> <li>• Discrete Optimization Talks, Virtual December 2020</li> <li>• INFORMS Annual Meeting, Virtual November 2020</li> </ul> <p><i>Logic-based Benders Decomposition and Binary Decision Diagram Based Approaches for Stochastic Distributed Operating Room Scheduling</i></p> <ul style="list-style-type: none"> <li>• INFORMS Annual Meeting, Seattle, WA October 2019</li> <li>• DIMACS Workshop on MINLP (poster), Montreal, QC October 2019</li> <li>• Optimization Days, Montreal, QC May 2019</li> </ul> <p><i>Generation Expansion Planning with Revenue Adequacy Constraints</i></p> <ul style="list-style-type: none"> <li>• INFORMS Annual Meeting, Seattle, WA October 2019</li> <li>• MIP Workshop (poster), Boston, MA July 2019</li> <li>• INFORMS Computing Society Conference, Knoxville, TN January 2019</li> </ul>	
INDUSTRIAL EXPERIENCE	<p><b>Omnivest Consulting, Data Analyst Intern</b>, New York, NY January - April, 2017</p> <p>Implemented machine learning models for sports analytics and stock market prediction.</p>	
ACADEMIC SERVICE	<ul style="list-style-type: none"> <li>• Reviewer for <i>INFORMS Journal on Computing</i></li> </ul>	

- Session Chair for INFORMS Annual Meeting 2019

#### LEADERSHIP

- INFORMS UofT Chapter (INFORMS Honorable Mention, 2020), Vice President (2019-present)
- Columbia IEOR Mentorship Program, Mentor (2018-2020)
- Wuhan U. Women Soccer Team, Captain (2012-2015)

#### SKILLS

**Programming Languages:** Python, Julia, C++, Matlab

**Software Tools:** CPLEX, Gurobi, Mosek, Ipopt, CP Optimizer

**Language:** English, Chinese (fluent)

#### REFERENCES

##### **Merve Bodur**

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##### **Joshua A. Taylor**

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##### **Dimitri J. Papageorgiou**

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