

# Cheng Guo

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## CONTACT INFORMATION

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

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## RESEARCH INTERESTS

- Application areas: Energy markets, Nonconvex market pricing, Power systems, Computational mechanism design, Healthcare
- Methodologies: Copositive Programming, Stochastic programming, Integer programming, Mixed-integer nonlinear programming, Decomposition methods

## EXPERIENCE

**Clemson University**, Clemson, SC 2021 - present  
*School of Mathematical and Statistical Sciences*  
Assistant Professor, area: Operations Research

**Columbia University**, New York, NY 2021 - 2022  
*Department of Industrial Engineering and Operations Research*  
Visiting Researcher

## EDUCATION

**University of Toronto**, Toronto, ON 2017 - 2021  
*Department of Mechanical and Industrial Engineering*  
Ph.D. in Industrial Engineering, GPA: 3.96/4.00

- Advisor: Merve Bodur

**Columbia University**, New York, NY 2015 - 2017  
*Department of Industrial Engineering and Operations Research*  
M.S. in Operations Research

**Wuhan University**, Wuhan, China 2011 - 2015  
*School of Economics and Management*  
B.A. in Economics  
B.S. in Mathematics

- Hongyi Outstanding Graduates Award

## PUBLICATIONS

**C. Guo**, M. Bodur, D. J. Papageorgiou, *Generation Expansion Planning with Revenue Adequacy Constraints*, **Computers & Operations Research** 142 (2022): 105736. [\[pdf\]](#)

**C. Guo**, M. Bodur, D. M. Aleman, and D. R. Urbach, *Logic-based Benders Decomposition and Binary Decision Diagram Based Approaches for Stochastic Distributed Operating Room Scheduling*, **INFORMS Journal on Computing** 33.4 (2021): 1551-1569. [\[pdf\]](#)

## SUBMITTED PAPERS

**C. Guo**, H. Nagarajan, M. Bodur, *Tightening Quadratic Convex Relaxations for the AC Optimal Transmission Switching Problem*, submitted, 2022. [\[pdf\]](#)

**C. Guo**, M. Bodur, J. A. Taylor, *Copositive Duality for Discrete Markets and Games*, rejected with invitation to resubmit at **Management Science**, 2021. [\[pdf\]](#)

PAPERS IN PREPARATION	<p><b>C. Guo</b>, C. Kroer, D. Bienstock, Y. Dvorkin, <i>Modeling, equilibrium and market power for electricity capacity markets</i>, in preparation.</p> <p><i>Risk-aware security-constrained unit commitment</i>, in preparation.</p> <p>A. Deza, <b>C. Guo</b>, M. Bodur, <i>A Multistage Stochastic Integer Programming Approach to Distributed Operating Room Scheduling</i>, in preparation.</p> <ul style="list-style-type: none"> <li>Selected as a finalist in 2020 INFORMS Undergraduate OR Prize Competition.</li> </ul>
HONORS AND AWARDS	<p>Finalist for student Anna Deza, INFORMS Undergraduate OR Prize Competition, 2020</p> <p>MIP Workshop Student Travel Support, 2019</p> <p>Bert Wasmund Graduate Fellowships in Sustainable Energy Research, 2018</p> <p>Hongyi Outstanding Graduates Award, 2015</p> <p>Economics and Management School Scholarship, 2013 - 2014</p>
TEACHING	<p><b>Clemson University</b></p> <p><i>Instructor</i></p> <ul style="list-style-type: none"> <li>MATH 8100 - Mathematical Programming (graduate): Fall 2022, Spring 2023</li> <li>STAT 3090 - Introductory Business Statistics (undergraduate): Spring 2022</li> </ul> <p><b>University of Toronto</b></p> <p><i>Tutorial Teaching Assistant</i></p> <ul style="list-style-type: none"> <li>MIE 562 - Scheduling (undergraduate/graduate): Fall 2019, Fall 2020</li> <li>MIE 335 - Algorithms and Numerical Methods (undergraduate): Winter 2019</li> </ul> <p><b>Wuhan University</b></p> <p><i>Teaching Assistant</i></p> <ul style="list-style-type: none"> <li>Probability Theory (undergraduate): Fall 2014</li> </ul>
ADVISING	<p><b>Ph.D. Students</b></p> <p>Benjamin Hamlin (co-advised with Margaret Wiecek)</p> <p><b>M.S. Thesis Committee Member</b></p> <p>Yunheng Jiang(2022)</p> <p><b>Undergraduate Students</b></p> <p>Renzo Muzzarelli, Jiayi Wang (co-advised, Columbia B.S. 2022 → Stanford Ph.D.), Anna Deza (co-advised, U. Toronto B.A.Sc. 2020 → UC Berkeley Ph.D.), Ryan Do (co-advised, U. Toronto B.A.Sc. 2019 → U. Toronto M.Eng.)</p>
INVITED TALKS	<ul style="list-style-type: none"> <li>MIP Workshop, Los Angeles, CA May, 2023</li> <li>Polytechnique Montreal, GERAD Seminar, Virtual May, 2022</li> <li>Discrete Optimization Talks, Virtual December, 2020</li> </ul>
CONFERENCE PRESENTATIONS	<ul style="list-style-type: none"> <li>International Conference on Continuous Optimization, Bethlehem, PA July, 2022</li> </ul>

	<ul style="list-style-type: none"> <li>• INFORMS Optimization Society Conference, Greenville, SC</li> </ul>	March, 2022
	<ul style="list-style-type: none"> <li>• INFORMS Annual Meeting, Anaheim, CA</li> </ul>	October 2021
	<ul style="list-style-type: none"> <li>• International Conference on Game Theory (poster), Virtual</li> </ul>	July 2021
	<ul style="list-style-type: none"> <li>• IPCO Conference (poster), Virtual</li> </ul>	June 2021
	<ul style="list-style-type: none"> <li>• CORS Annual Conference, Virtual</li> </ul>	June 2021
	<ul style="list-style-type: none"> <li>• MIP Workshop (poster), Virtual</li> </ul>	May 2021
	<ul style="list-style-type: none"> <li>• Grid Science Winter School (poster), Virtual</li> </ul>	January 2021
	<ul style="list-style-type: none"> <li>• INFORMS Annual Meeting, Virtual</li> </ul>	November 2020
	<ul style="list-style-type: none"> <li>• INFORMS Annual Meeting, Seattle, WA</li> </ul>	October 2019
	<ul style="list-style-type: none"> <li>• DIMACS Workshop on MINLP (poster), Montreal, QC</li> </ul>	October 2019
	<ul style="list-style-type: none"> <li>• MIP Workshop (poster), Boston, MA</li> </ul>	July 2019
	<ul style="list-style-type: none"> <li>• Optimization Days, Montreal, QC</li> </ul>	May 2019
	<ul style="list-style-type: none"> <li>• INFORMS Computing Society Conference, Knoxville, TN</li> </ul>	January 2019
ACADEMIC SERVICE	<ul style="list-style-type: none"> <li>• Reviewer for <i>Production and Operations Management</i>, <i>Transportation Science</i>, <i>INFORMS Journal on Computing</i>, <i>SIAM Journal on Optimization</i></li> <li>• Session Chair for INFORMS Optimization Society Conference 2022; INFORMS Annual Meeting 2019, 2021; CORS Annual Meeting 2021</li> <li>• Member of INFORMS</li> </ul>	
OTHER ACTIVITIES	<ul style="list-style-type: none"> <li>• INFORMS UofT Student Chapter (Honorable Mention, 2020), Vice President (2019-2021)</li> <li>• Columbia IEOR Mentorship Program, Mentor (2018-2020)</li> <li>• Wuhan U. Women Soccer Team, Captain (2013-2015)</li> </ul>	