

Xiaoyi Gu

Curriculum Vitae

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Education

- 2017 – **Ph.D. Candidate**, *Operations Research*, Georgia Institute of Technology.
Present Advisors: Santanu S. Dey and (late) Shabbir Ahmed
Research Interests: mixed-integer optimization, non-convex optimization, machine learning and statistical learning
- 2013 – 2017 **B.S.**, *Applied Mathematics*, Peking University, China.
- 2014 – 2017 **B.S. (double degree)**, *Physics*, Peking University, China.

Ongoing Research

- Feb. 2020 Lifting Convex Inequalities for Bipartite Bilinear Programs.
– Present Collaborators: Santanu S. Dey and Jean-Philippe P. Richard
- May. 2019 Learning to Branch in Security-Constrained Unit Commitment.
– Present Collaborators: Álinson Santos Xavier, Qiu Feng and Santanu S. Dey
Develop schemes of machine learning utilizing branch-and-bound results of solved mixed integer problems;
Guide branching using learned models and accelerate solving new problems;
Journal Submission Expected Soon.

Publications

- Xiaoyi Gu, Santanu S. Dey, Jean-Philippe P. Richard, *Lifting Convex Inequalities for Bipartite Bilinear Programs*, IPCO, 2021.
- Xiaoyi Gu, Shabbir Ahmed, Santanu S. Dey, *Exact Augmented Lagrangian Duality for Mixed Integer Quadratic Programming*, SIAM Journal on Optimization, 2020.
- Honglin Yuan, Xiaoyi Gu, Rongjie Lai, Zaiwen Wen, *Global Optimization with Orthogonality Constraints via Stochastic Diffusion on Manifold*, Journal of Scientific Computing, 2019.

Reviewed Journals

- 2020, 2021 Mathematical Programming.

Talks and Posters

- Nov. 2020 INFORMS Annual Meeting 2020, Session on Frontier of Power System Optimization/Computing, Virtual.
- Jul. 2019 MIP 2019, MIT, Boston MA.

Awards and Honors

- 2017 – 2019 **Kerry Clayton Fellowship**, Georgia Tech.
- 2015 **Silver medal, 6th Chinese Mathematics Competition**.
- 2013 **Silver medal, 28th Chinese Mathematical Olympiad**.

Work Experience

- Summer 2021 **Data Science Intern**, Uber Freight, Uber.
- Summer 2019 **Research Intern**, Power Systems Branch, Argonne National Lab.

Teaching Experience

- 2020 **Head Teaching Assistant**, Machine Learning, CSE/ISYE 6740, Georgia Tech.
- 2019 **Teaching Assistant**, Financial Optimization, ISYE 6673, Georgia Tech.
- 2017 – 2018 **Teaching Assistant**, Stochastic Manufacturing & Service Systems, ISYE 3232, Georgia Tech.

Skills and Languages

Proficient in: Julia, Python, C, MATLAB, SQL, CPLEX, Gurobi, Scikit-learn, L^AT_EX.