SHAONING HAN

340 Olin Hall
3650 McClintock Avenue
Los Angeles, CA 90089-0105

Email: shaoning@usc.edu
Phone: (412) 628-5788
Homepage: shaoninghan.github.io

RESEARCH INTERESTS

Mixed-integer programming, Nonlinear optimization, Conic programming, Machine learning, Large-scale optimization

EDUCATION

Ph.D in Industrial and Systems Engineering, University of Southern California, 2022 (expected)
- Advisor: Andrés Gómez

M.S. in Industrial Engineering and Operations Research, University of Pittsburgh, 2019

B.S. in Mathematics, University of Science and Technology of China, 2017

PUBLICATIONS

1. Pang, J.-S. and Han, S. (2021). Some strongly polynomially solvable convex quadratic programs with bounded variables. *Submitted to SIAM Journal on Optimization*

2. Han, S. and Gómez, A. (2021a). Compact extended formulations for low-rank functions with indicator variables. *Submitted to Mathematics of Operations Research*

3. He, Z., Han, S., Gómez, A., Cui, Y., and Pang, J.-S. (2021). Comparing solution paths of sparse quadratic minimization with a Stieltjes matrix. *Submitted to Mathematical Programming*

4. Han, S., Gómez, A., and Atamtürk, A. (2021). The equivalence of optimal perspective formulation and Shor's SDP for quadratic programs with indicator variables. *Operations Research Letters, under minor revision*

5. Han, S. and Gómez, A. (2021b). Single-neuron convexifications for binarized neural networks. *In preparation*

6. Han, S., Gómez, A., and Atamtürk, A. (2020). 2×2 convexifications for convex quadratic optimization with indicator variables. *Mathematical Programming, under major revision*

7. Han, S., Gómez, A., and Prokopyev, O. A. (2019). Fractional 0-1 programming and submodularity. *Journal of Global Optimization, conditionally accepted*

8. Atamtürk, A., Gómez, A., and Han, S. (2021). Sparse and smooth signal estimation: Convexification of ℓ_0-formulations. *Journal of Machine Learning Research*, 22(52):1–43

TEACHING EXPERIENCE	**ISE 599 (PhD) Mixed-Integer Programming** Teaching assistant, University of Southern California, 2021 Spring **ISE 530 (MS) Optimization Methods for Analytics** Teaching assistant, University of Southern California, 2019 Fall **ENGR 0020 (BS) Probability and Statistics for Engineers** Teaching assistant, University of Southern California, 2019 Spring **ENGR 0020 (BS) Probability and Statistics for Engineers** Teaching assistant, University of Pittsburgh, 2018 Fall **ENGR 0020 (BS) Probability and Statistics for Engineers** Teaching assistant, University of Pittsburgh, 2018 Spring **IE 2086 (MS) Decision Models** Teaching assistant, University of Pittsburgh, 2017 Fall

TEACHING EXPERIENCE

- **ISE 599 (PhD) Mixed-Integer Programming**
  Teaching assistant, University of Southern California, 2021 Spring
- **ISE 530 (MS) Optimization Methods for Analytics**
  Teaching assistant, University of Southern California, 2019 Fall
- **ENGR 0020 (BS) Probability and Statistics for Engineers**
  Teaching assistant, University of Southern California, 2019 Spring
- **ENGR 0020 (BS) Probability and Statistics for Engineers**
  Teaching assistant, University of Pittsburgh, 2018 Fall
- **ENGR 0020 (BS) Probability and Statistics for Engineers**
  Teaching assistant, University of Pittsburgh, 2018 Spring
- **IE 2086 (MS) Decision Models**
  Teaching assistant, University of Pittsburgh, 2017 Fall

TALKS

- *Fractional 0-1 programming and submodularity.* INFORMS Annual Meeting, Anaheim, CA, October 2021
- *On SDP formulations for quadratic optimization with indicator variables.* INFORMS Annual Meeting, virtual, November 2020

PROFESSIONAL ACTIVITIES

Member

• INFORMS	2018 - Present
• INFORMS Optimization Society	2018 - Present

Journal Reviewer
- Optimization Letters

Invited Session Chair
- Informs Optimization Society Conference 2022, TBD for discrete optimization

VOLUNTEER EXPERIENCE

Virtual volunteer at INFORMS Annual Meeting, Anaheim, CA, October 2021. Responsible for five rooms during one shift day to ensure the smooth progress of meetings.