CV - Salar Fattahi

General

Address: 2753 IOE, 205 Beal Ave, Ann Arbor, MI, 48109
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Academic Experience

Assistant Professor August 2020 - present
University of Michigan, Ann Arbor, MI, USA,
Department of Industrial and Operations Engineering,

Other Affiliations:
Michigan Institute for Data Science,
Michigan Institute for Computational Discovery and Engineering,
Michigan Center for Applied and Interdisciplinary Mathematics,
Controls Group

Visiting Assistant Professor June 2020 - August 2020
University of Michigan, Ann Arbor, MI, USA,
Department of Industrial and Operations Engineering

Education

Ph.D., University of California, Berkeley, Berkeley, CA, USA May 2016 – July 2020
Industrial Engineering and Operations Research
Minor in Statistics
Advisors: Prof. Javad Lavaei and Prof. Somayeh Sojoudi

M.Sc., University of California, Berkeley, Berkeley, CA, USA August 2015 – May 2016
Industrial Engineering and Operations Research

M.Sc., Columbia University, New York City, NY, USA September 2014 – August 2015
Electrical Engineering

B.Sc, Sharif University of Technology, Tehran, Iran August 2009 – July 2014
Electrical Engineering
Minor in Computer Science

Honors and Awards

1. **Nominated for North Campus Deans' MLK Spirit Award** 2024
   Awarded to faculty who exemplify the leadership and vision of Reverend Dr. Martin Luther King, Jr. through their commitment to social justice, diversity, equity, and inclusion

2. **National Science Foundation CAREER Award** 2023
   For the proposal "Blessing of Nonconvexity in Machine Learning: Landscape Analysis and Efficient Algorithms"

3. **INFORMS Junior Faculty Interest Group Best Paper - Second Place** 2023
   For the paper "On the Optimization Landscape of Nonconvex Matrix Recovery: When Are True Solutions Identifiable?"

4. **INFORMS Data Mining Society Best Student Paper - Finalist** 2023
   For the paper "Heterogeneous Matrix Factorization: When Features Differ by Datasets"

5. **INFORMS Computing Society Best Student Paper - Runner Up** 2022
   For the paper "A Graph-based Decomposition Method for Convex Quadratic

Optimization with Indicators"

6. **NeurIPS Outstanding Reviewer Award** 2021
   given to the top 8% of reviewers who were judged to be instrumental to the review process based on Area Chair and author feedback

7. **INFORMS Energy, Natural Resources, and the Environment Best Student Paper Award** 2020
   For the paper "Smoothing Property of Load Variation Promotes Finding Global Solutions of Time-Varying Optimal Power Flow"

8. **Outstanding Student Paper Award of the IEEE Conference on Control Technology and Applications** 2020
   For the paper "Absence of Spurious Local Trajectories in Time-Varying Optimization: A Control-Theoretic Perspective"

9. **Best-of-the-Best Paper Award of the 2020 Power Energy Society General Meeting** 2020
   For the paper "Load Variation Enables Escaping Poor Solutions of Time-Varying Optimal Power Flow"

10. **IEOR Faculty Fellowship Award** 2019
    The highest graduate student award (single award) in the IEOR Department, UC Berkeley

11. **INFORMS Data Mining Best Paper Award** 2018
    For the paper "Graphical Lasso and Thresholding: Equivalence and Closed-Form Solutions"

12. **Finalist for American Control Conference Best Student Paper Award** 2018
    For the paper "Closed-Form Solution and Sparsity Path for Inverse Covariance Estimation Problem"

13. **Winner of Katta G. Murty Best Paper Award** 2018
    For the paper "Graphical Lasso and Thresholding: Equivalence and Closed-Form Solutions",

14. **Travel Grant** 2018
    Conference on Decision and Control

15. **Travel Grant** 2018
    American Control Conference

16. **Outstanding Graduate Student Instructor Award** 2017
    In recognition of my achievements as a teaching assistant, UC Berkeley

17. **Marshall-Oliver-Rosenberger Fellowship Award** 2017
    Given annually to at most 2 PhD students with demonstrated research in decision science, IEOR Department, UC Berkeley

18. **Best Reviewer Award** 2016
    IEEE Transactions on Smart Grid

19. **Armstrong Fellowship Award** 2014
    Columbia University

GRANTS *Total amount awarded: $1.742M (my share: $1.321M)*

External Grants:

1. *Blessing of Nonconvexity in Machine Learning: Landscape Analysis and Efficient Algorithms*
   Sponsor: National Science Foundation (CAREER) - Division of Computing and Communication Foundations
   PIs: **Salar Fattahi (sole PI)**
   Total award amount: $635,476
   Duration: 5/2024-4/2029

2. *Scalable Inference of Spatio-temporal Markov Random Fields*
   Sponsor: National Science Foundation - Division of Mathematical Sciences
   PIs: **Salar Fattahi (PI)**, Andres Gomez (co-PI), Arvind Rao (co-PI)
   Total award amount: $399,998 (my share: $147,949)
   Duration: 8/2022-7/2025

3. *Global Guarantees for Robust Matrix Factorization: Promises of Nonconvex Formulations*
   Sponsor: Office of Naval Research - Computational Methods for Decision Making Program
   PIs: **Salar Fattahi (sole PI)**
   Total award amount: $430,556
   Duration: 3/2022-2/2025

Internal Grants:

1. *Collaborative and Decentralized Data Analytics Beyond Predictive Modeling*
   Sponsor: IOE Research Incentive Awards PIs: Raed Al Kontar (PI), **Salar Fattahi (co-PI)**, Judy Jin (co-PI)
   Total award amount: $81,000 (my shre: $27,000)
   Duration: 5/2023-8/2024

2. *Collaborative Partnership with Low-income Detroit Schools to Promote Interest in STEM*
   Sponsor: DEI Faculty Grant, University of Michigan
   PIs: **Salar Fattahi (PI)**, Tiffany Wu (co-PI)
   Total award amount: $10,000
   Duration: 8/2022-8/2024

3. *Next Generation Data Science: From High Dimensional Statistics to Nonconvex Optimization*
   Sponsor: Seeding To Accelerate Research Themes, University of Michigan
   PIs: Qing Qu (PI), Laura Balzano (co-PI), Albert Berahas (co-PI), Eunshin Byon (co-PI), **Salar Fattahi (co-PI)**
   Total award amount: $75,000 (my share: $15,000)
   Duration: 5/2022-5/2023

4. *Scalable Inference of Spatially-Varying Graphical Models with Applications in Genomics*
   Sponsor: Catalyst Grant, Michigan Institute for Computational Discovery and Engineering (MICDE)
   PIs: **Salar Fattahi (PI)**, Arvind Rao (co-PI)
   Total award amount: $100,000 (my share: $50,000)
   Duration: 8/2021-8/2023

5. *IPODS: Innovative and Powerful Optimization Methods for Data Science with Statistical Guarantees*
   Sponsor: Propelling Original Data Science, Michigan Institute for Data Science (MIDAS)
   PIs: Albert Berahas (PI), **Salar Fattahi (PI)**
   Total award amount: $10,000 (my share: $5,000)
   Duration: 6/2021-12/2022

Publications

* indicates that the student is advised by me.

Preprints:

1. S. Fattahi, A. Gómez, "Solution Path of Time-varying Markov Random Fields with Discrete Regularization", submitted, 2023. [Link] [Code]

2. J. Ma*, R. R. Chen, Y. He, S. Fattahi, W. Hu, "Robust Sparse Mean Estimation via Incremental Learning", submitted, 2023. [Link] [Code]

3. N. Shi, R. Al Kontar, S. Fattahi, "Heterogeneous Matrix Factorization: When Features Differ by Datasets", submitted, 2023. [Link] [Code]
   - **INFORMS Data Mining Best Student Paper Award (Finalist), 2023**

4. J. Ma*, S. Fattahi, "Can Learning Be Explained By Local Optimality In Low-rank Matrix Recovery?", submitted, 2023. [Link]
   - **INFORMS JFIG Best Paper Award (Second Place), 2023**

5. G. Liang*, G. Zhang, S. Fattahi, R. Y. Zhang, "Alternating Minimization Provably Solves Complete Dictionary Learning" , submitted, 2022. [Link]

2023:

5. G. Liang*, N. Shi, R. Al Kontar, S. Fattahi, "Personalized Dictionary Learning for Heterogeneous Datasets", **Neural Information Processing Systems**, 2023. [Link] [Code]

6. G. Zhang, S. Fattahi, R. Y. Zhang "Preconditioned Gradient Descent for Overparameterized Nonconvex Burer–Monteiro Factorization with Global Optimality Certification" , **Journal of Machine Learning Research**, 2023. [Link]

7. V. Ravikumarv, T. Xu*, S. Fattahi, A. Rao "Efficient Inference of Spatially-varying Gaussian Markov Random Fields with Applications in Gene Regulatory Networks", **IEEE/ACM Transactions on Computational Biology and Bioinformatics**, 2023. [Link]

8. J. Ma*, S. Fattahi, "Global Convergence of Sub-gradient Method for Robust Matrix Recovery: Small Initialization, Noisy Measurements, and Over-parameterization" , **Journal of Machine Learning Research**, 2023. [Link]

9. J. Ma*, L. Guo*, S. Fattahi, "Behind the Scenes of Gradient Descent: A Trajectory Analysis via Basis Function Decomposition", **International Conference on Learning Representation**, 2023. [Link] [Code]

2022:

10. J. Ma*, S. Fattahi, "Blessing of Nonconvexity in Deep Linear Models: Depth Flattens the Optimization Landscape Around the True Solution", **Neural Information Processing Systems**, 2022. [Link]
    - **Spotlight paper (top 3%)**

11. P. Liu, S. Fattahi, A. Gómez, S. Küçükyavuz, "A Graph-based Decomposition Method for Convex Quadratic Optimization with Indicators", **Mathematical Programming**, 2022. [Link]
    - **INFORMS Computing Society Best Student Paper (runner up), 2022**

2021:

12. G. Zhang, S. Fattahi, R. Y. Zhang, "Preconditioned Gradient Descent for Over-parameterized Matrix Factorization", **Neural Information Processing Systems**, 2021. [Link]

13. S. Fattahi, A. Gómez, "Scalable Inference of Sparsely-changing Markov Random Fields with Strong Statistical Guarantees", **Neural Information Processing Systems**, 2021. [Link]

14. J. Ma*, S. Fattahi, "Sign-RIP: A Robust Restricted Isometry Property for Low-rank Matrix Recovery", **Neural Information Processing Systems**, Workshop on Optimization for Machine Learning, 2021. [Link]

15. S. Fattahi, C. Josz, R. Mohammadi, J. Lavaei, S. Sojoudi, "Absence of Spurious Local Trajectories in Time-varying Optimization", **IEEE Transactions on Automatic Control**, 2021. [Link]

16. S. Fattahi, "Learning Partially Observed Linear Dynamical Systems from Logarithmic Number of Samples", **Learning for Dynamics & Control Conference**, 2021. [Link]

17. J. Mulvaney-Kemp, S. Fattahi, J. Lavaei, "Smoothing Property of Load Variation Promotes Finding Global Solutions of Time-Varying Optimal Power Flow", **IEEE Transactions on Control of Network Systems**, 2021. [Link]
    - **INFORMS ENRE Best Student Paper Award (winner), 2020**

18. S. Fattahi, S. Sojoudi, "Sample Complexity of Sparse System Identification Problem for Linear Time-Invariant Systems", **IEEE Transactions on Control of Network Systems**, 2021. [Link]

2020:

19. S. Fattahi, S. Sojoudi, "Exact Guarantees on the Absence of Spurious Local Minima for Rank-1 Non-negative Robust Principal Component Analysis", **Journal of Machine Learning Research**, 2020. [Link]

20. S. Fattahi, N. Matni, S. Sojoudi, "Efficient Learning of Distributed Linear-Quadratic Regulators", **SIAM Journal on Control and Optimization**, 2020. [Link]

21. S. Fattahi, C. Josz, R. Mohammadi, J. Lavaei, S. Sojoudi, "Absence of Spurious Local Trajectories in Time-Varying Optimization: A Control-Theoretic Perspective", **IEEE Conference on Control Technology and Applications** , 2020.

22. J. Mulvaney-Kemp, S. Fattahi, J. Lavaei, "Load Variation Enables Escaping Poor Solutions of Time-Varying Optimal Power Flow", **IEEE Power & Energy Society General Meeting**, 2020. [Link]
    - **Best-of-the-Best Conference Paper Award (winner)**

2019:

23. S. Fattahi, S. Sojoudi, "Graphical Lasso and Thresholding: Equivalence and Closed-Form Solutions", **Journal of Machine Learning Research**, 2019. [Link]
    - **INFORMS Data Mining Best Paper Award (winner), 2018**
    - **Katta G. Murty Best Paper Award (winner), 2018.**

24. S. Sojoudi, S. Fattahi, J. Lavaei, "Convexification of Generalized Network Flow Problem", **Mathematical Programming**, 2019. [Link]

25. S. Fattahi, J. Lavaei, A. Atamtürk, "A Bound Strengthening Method for Optimal Transmission Switching in Power Systems with Fixed Connected Subgraph", **IEEE Transactions on Power Systems**, 2019. [Link]

26. S. Fattahi, G. Fazelnia, J. Lavaei, M. Arcak, "Transformation of Optimal Centralized Controllers Into Near-Global Static Distributed Controllers", **IEEE Transactions on Automatic Control**, 2019. [Link]

27. S. Fattahi, R. Y. Zhang, S. Sojoudi, "Linear-Time Algorithm for Learning Large-Scale Sparse Graphical Models", **IEEE Access**, 2019. [Link]

28. S. Fattahi, N. Matni, S. Sojoudi, "Learning Sparse Dynamical Systems from a Single Sample Trajectory", **IEEE Conference on Decision and Control**, 2019. [Link]

2018:

29. R. Y. Zhang, S. Fattahi, S. Sojoudi, "Large-Scale Sparse Inverse Covariance Estimation via Thresholding and Max-Det Matrix Completion", **International Conference on Machine Learning**, 2018. [Link]

30. S. Fattahi, S. Sojoudi, "Data-Driven Sparse System Identification", **Annual Allerton Conference on Communication, Control, and Computing**, 2018. [Link]

31. S. Fattahi, S. Sojoudi, "Non-Asymptotic Analysis of Block-Regularized Regression Problem", **IEEE Conference on Decision and Control**, 2018. [Link]

32. S. Fattahi, S. Sojoudi "Closed-Form Solution and Sparsity Path for Inverse Covariance Estimation Problem", **American Control Conference** , 2018. [Link]
    - **Best Student Paper Award (finalist)**

33. G. Darivianakis, S. Fattahi, J. Lavaei, J. Lygeros,"High-Performance Cooperative Distributed Model Predictive Control for Linear Systems", **American Control Conference**, 2018. [Link]

34. S. Fattahi, R.Y. Zhang, S. Sojoudi, "Sparse Inverse Covariance Estimation for Chordal Structures", **European Control Conference**, 2018.

2017:

35. S. Fattahi, M. Ashraphijou, J. Lavaei, A. Atamtürk,"Conic Relaxation of the Unit Commitment Problem", **Energy**, 2017. [Link]

36. S. Fattahi, J. Lavaei, A. Atamtürk "Promises of Conic Relaxations in Optimal Transmission Switching of Power Systems", **IEEE Conference on Decision and Control**, 2017. [Link]

37. S. Fattahi, J. Lavaei, M. Arcak "A Scalable Method for Designing Distributed Controllers for Systems with Unknown Initial State", **IEEE Conference on Decision and Control**, 2017. [Link]

38. S. Fattahi, J. Lavaei, "On the Convexity of Optimal Decentralized Control Problem and Sparsity Path", **American Control Conference**, 2017. [Link]

2016:

39. S. Fattahi, J. Lavaei, "Theoretical Guarantees for the Design of Near Globally Optimal Static", **Annual Allerton Conference on Communication, Control, and Computing**, 2016. [Link]

40. M. Ashraphijou, S. Fattahi, J. Lavaei, A. Atamtürk, "A Strong Semidefinite Programming Relaxation of the Unit Commitment Problem", **IEEE Conference on Decision and Control**, 2016. [Link]

2015:

41. S. Fattahi, J. Lavaei, "Convex Analysis of Generalized Flow Networks", **IEEE Conference on Decision and Control (CDC)**, pp. 1569-1576, 2015. [Link]

42. S. Fattahi, G. Fazelnia, J. Lavaei, "Transformation of Optimal Centralized Controllers Into Near-Global Static Distributed Controllers", **IEEE Conference on Decision and Control**, 2015. [Link]

2014:

43. S. Fattahi, M. Azghani, F. Marvasti, "An Algorithm for Detecting Exact Regions of Moving Objects in Video Frames", **IEEE International Symposium on Telecommunications**, 2014. [Link]

Dissertation:

- S. Fattahi, "Structure-Aware Methods in Large-Scale Computational Problems: Machine Learning, Optimization, and Control", University of California, Berkeley, USA, 2020. [Link]

Invited Talks

1. **INFORMS Annual Meeting**, Phoenix, AZ, October 2023
   "On the Optimization Landscape of Nonconvex Matrix Recovery:
   When Are True Solutions Identifiable?"

2. **Allerton Conference**, Monticello, IL, October 2023
   "Blessing of Nonconvexity in Factorized Models"

3. **SIAM Conference on Optimization** , Seattle, WA, June 2023
   "Blessing of Nonconvexity in Deep Linear Models: Depth Flattens the Optimization Landscape Around the True Solution"

4. **SIAM Conference on Computational Science and Engineering** , Amsterdam, Netherlands, February 2023
   "Blessing of Nonconvexity in Factorized Models"

5. **Michigan Medicine**, Tools and Technology Seminar, Department of Computational Medicine and Bioinformatics, Ann Arbor, MI, January 2023
   "Scalable Learning of Dynamic Graphical Models with Combinatorial Structures: Beyond Maximum Likelihood Estimation"

6. **INFORMS Annual Meeting** , Indianapolis, IN, October 2022
   "Global Convergence of Sub-gradient Method for Low-rank Matrix Factorization"

7. **University of Michigan** , ECE Communications and Signal Processing Seminar Series, Ann Arbor, MI, September 2022
   "Global Convergence of Sub-gradient Method on Factorized Models"

8. **International Conference on Continuous Optimization**, Bethlehem, PA, July 2022
   "Global Convergence of Sub-Gradient Method for Robust Matrix Recovery: Small Initialization, Noisy Measurements, and Over-Parameterization"

9. **Johns Hopkins University**, Mathematical Institute for Data Science, Baltimore, PA, April 2022
   "Global Convergence of Sub-gradient Method on Factorized Models"

10. **INFORMS Annual Meeting,** virtual, October 2021,
"Scalable Inference of Sparsely-changing Markov Random Fields"

11. **Federal Energy Regulatory Commission,** virtual, June 2021,
"Absence of Spurious Local Trajectories in Time-varying Optimal Power Flow"

12. **Modeling and Optimization: Theory and Applications (MOPTA),** virtual, August 2021,
"Implicit Regularization of Sub-gradient Method in Robust Matrix Recovery"

13. **University of Michigan,** Controls Group, October, 2020,
"Learning and Control of Linear Dynamical Systems in High Dimensions"

14. **Arizona State University**, Department of Industrial Engineering, Tempe, AZ, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

15. **University of Illinois Urbana-Champaign**, Department of Industrial and Enterprise Systems Engineering, Champaign, IL, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

16. **University of Michigan**, Department of Industrial and Operations Engineering, Ann Arbor, MI, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

17. **MIT Sloan**, School of Management, Operations Research and Statistics Group, Cambridge, MA, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

18. **Purdue University**, Department of Industrial Engineering, West Lafayette, IN, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

19. **University of Pittsburgh**, Department of Industrial Engineering, Pittsburgh, PA, January, 2020,
"Scalable and Guaranteed Computation for Structured Systems"

20. **INFORMS Annual Meeting**, Seattle, WA, October, 2019,
"Exact Guarantees On the Absence of Spurious Local Minima For Non-negative Robust Principal Component Analysis"

21. **INFORMS Annual Meeting**, Seattle, WA, October, 2019,
"Learning Large-scale Sparse Graphical Models: Theory and Algorithm"

22. **SIAM Conference on Computational Science and Engineering (CSE19)**, Spokane, WA, February, 2019,
"Learning Large-Scale Sparse Graphical Models: Theory, Algorithm"

23. **13th Data Mining & Decision Analytics Workshop**, Phoenix, AZ, November, 2018,
"Graphical Lasso and Thresholding: Equivalence and Closed-form Solutions"

24. **INFORMS Annual Meeting**, Phoenix, AZ, November, 2018,
"A Bound Strengthening Method for Optimal Transmission Switching in Power Systems"

25. **INFORMS Annual Meeting**, Phoenix, AZ, November, 2018,
"Data Driven Sparse System Identification"

26. **Federal Energy Regulatory Commission (FERC)**, conference on *Increasing Market and Planning Efficiency through Improved Software*, Washington, DC, July, 2017,
"Convex Formulation of the Optimal Transmission Switching Problem"

27. **Tsinghua-Berkeley Shenzhen Institute**, Berkeley, CA, November, 2017,
"Structural Optimization: From Power Systems to Machine Learning"
- **Best Poster Presentation Award - Second Place**

28. **INFORMS Annual Meeting**, Houston, TX, October, 2017,
"Promises of Conic Relaxations in Optimal Transmission Switching of Power Systems"

29. **INFORMS Annual Meeting**, Houston, TX, October, 2017,
"Power System State Estimation Problem: Optimal Sensor Placement"

30. **INFORMS Annual Meeting**, Houston, TX, October, 2017,
"Data-driven Methods for Learning Graphical Models"

31. **Defense Advanced Research Projects Agency (DARPA)**, Young Faculty Award Meeting, Arlington, VA, October, 2016,
"Near-Global Solutions of Non-convex Problems"

32. **Modeling and Optimization: Theory and Applications (MOPTA)**, Lehigh, PA, August 2016,
"On the Convexity of Optimal Decentralized Control Problem and Sparsity Path"

33. **INFORMS Annual Meeting**, Nashville, TN, November, 2016,
"On the Convexity of Optimal Decentralized Control Problem and Sparsity Path"

34. **INFORMS Annual Meeting**, Nashville, TN, November, 2016,
"Optimal Distributed Control of Power Systems with a High Level of Renewable Energy"

Teaching

- **IOE611: Nonlinear Programming** **F23, F22, F21**
This course covers theoretical underpinnings of convex optimization, as well as efficient algorithms for solving them and their convergence analysis (e.g. gradient-based methods, stochastic gradient-based methods, Newton's method, and interior-point methods).
- **IOE202: Operations Engineering and Analytics** **F23**
This course covers process of engineering and mathematically modeling decisions including the role of uncertainty in decision making. Basic tools for solving these models, particularly optimization, statistical models and queueing processes, are covered. Students apply the learned models and tools to different applications from healthcare, manufacturing, transportation, public policy, etc.
- **IOE473 & IOE491: Advanced Data Analytics** **W24, W23, W22, W21**
This course introduces fundamental computational tools and methods in data analytics with concrete case studies from real-world applications. Students learn a wide variety of data analytics tools and methods, and showcase the applicability of these methods through a diverse set of real-world problems.

Teaching Evaluations

Students evaluate their instructors effectiveness by scoring their level of agreement with the various statements (1 = disagree strongly, 2 = disagree somewhat, 3 = neutral, 4 = agree somewhat, and 5 = agree strongly). Below are my median scores (SF) as compared to college (C), and university (U) median scores, if available.

- **Q1.** Overall, this was an excellent course.
- **Q2.** Overall, the instructor was an excellent teacher.
- **Q4.** I had a strong desire to take this course.

- **C1.** Is the average of Q1631, Q1632, and Q1633,
  - **Q1631.** This course advanced my understanding of the subject matter.
  - **Q1632.** My interest in the subject has increased because of this course.
  - **Q1633.** I knew what was expected of me in this course.
- **C2.** Is the average of Q199, Q217, and Q230.
  - **Q199.** The instructor explained material clearly.
  - **Q217.** The instructor treated students with respect.
  - **Q230.** The instructor seemed well prepared for class meetings.

Course (Semester)	Surveyed (Enrolled)	Q1			Q2			Q4			C1			C2		
		SF	C	U	SF	C	U	SF	C	U	SF	C	U	SF	C	U
IOE491 (W21)	18 (19)	4.5	4.3	4.4	4.7	4.6	4.7	4.6	4.1	4.1	4.6	4.4	4.5	4.9	4.7	4.8
IOE611 (F21)	39 (42)	4.6	-	-	4.8	-	-	4.6	4.5	4.0	4.7	4.5	4.4	4.9	4.7	4.8
IOE491 (W22)	26 (31)	4.8	-	-	4.9	-	-	4.6	4.1	4.1	4.7	4.4	4.5	4.8	4.7	4.8
IOE611 (F22)	45 (51)	4.9	-	-	4.9	-	-	4.8	4.5	4.0	4.8	4.6	4.4	4.9	4.8	4.8
IOE473 (W22)	48 (51)	4.6	-	-	4.8	-	-	4.5	4.1	4.0	4.7	4.3	4.4	4.9	4.7	4.8

Advising Experience

PhD Students:

- Jianhao Ma, University of Michigan (IOE) — Winter 2021 - Present
- Geyu Liang, University of Michigan (IOE) — Fall 2021 - Present
- Aaresh Bhathena, University of Michigan (IOE) — Winter 2023 - Present
- Guixian Chen, University of Michigan (IOE) — Fall 2023 - Present

Alumni:

- Lingjun Guo, Masters student, University of Michigan (IOE) — Winter 2022 - Winter 2023
  Current position: PhD student at Lehigh University
- Gongyu Chen, Masters student, University of Michigan (IOE) — Winter 2022 - Winter 2023
  Current position: PhD student at UC Berkeley
- Tong Xu, Masters student, University of Michigan (LSA) — Winter 2020 - Summer 2022
  Current position: PhD student at Northwestern University
- Weykun Lyu, Undergraduate student, University of Michigan (CSE and Math) — Summer 2021

Other Students:

- Rachel Tham, Undergraduate student, UC Berkeley (EECS) — Summer 2018

Doctoral Committee Membership:

- Aditya Shukla, University of Michigan (EECS) — Fall 2023 - Present
- Jiahao Shi, University of Michigan (IOE) — Winter 2023 - Present
- Kyle Gilman, University of Michigan (EECS) — Fall 2022 - Fall 2023
- Zhe Du, University of Michigan (EECS) — Fall 2021 - Present
- Yi Dai, University of Michigan (ChemE) — Fall 2021 - Present
- Hessa Al-Thani, University of Michigan (IOE) — Summer 2021 - Present

Outreach

- **Organizer of Human-AI Interaction Workshop for Early College Alliance**[*] — Winter 2023
- **Mentor in Blavin Scholar Program**[†], University of Michigan — Fall 2022 - present
- **Panelist for Washtenaw College Outreach** — Fall 2022

[*]A total of 26 high school students from the Early College Alliance (ECA), a public high school in Michigan, were invited to UM's campus for a full day of activities.

[†]The Blavin Scholar Program provides students who have experienced time in foster care with comprehensive support in navigating and maximizing their college experience.

- **Panelist for Oakland Community College Outreach** Fall 2022

- **Panelist for Schoolcraft College Outreach** Fall 2022

- **Member of DEI Task Force**, IOE, University of Michigan Fall 2022

- **Member of DEI Task Force**, IOE, University of Michigan Winter 2022

Services

Industrial and Operations Engineering:

- **Presenter**, IOE Graduate School Workshop Fall 2023

- **Organizer**, Wilbert Steffy Distinguished Lecture Fall 2022

- **Presenter**, IOE Graduate School Workshop Fall 2022

- **Seminar Organizer**, IOE Department Seminar Series Fall 2022

- **Prize Committee Member**, Wilson Best Paper Prize Winter 2022

- **Seminar Organizer**, IOE Department Seminar Series Winter 2022

- **Prize Committee Member**, Wilson Best Paper Prize Winter 2021

- **Presenter**, IOE Graduate School Workshop Fall 2021

- **Member**, Graduate Recruitment Task Force Fall 2021

- **Member**, Facilities and Computing Committee Fall 2021

College of Engineering:

- **Member of the Management and Education Committee**, Winter 2024-present
  Michigan Institute for Computational Discovery and Engineering (MICDE)

- **Proposal Reviewer**, Propelling Original Data Science (PODS) Grants Summer 2022

- **Proposal Reviewer**, MICDE Catalyst Grants Summer 2022

- **College Representative**, Robotics, University of Michigan Winter 2022
  Faculty Hiring (one candidate)

- **College Representative**, ECE, University of Michigan Winter 2022
  Faculty Hiring *(three candidates)*

- **College Representative**, CSE, University of Michigan Winter 2022
  Faculty Hiring *(one candidate)*

- **Faculty Mentor** Summer 2021
  Summer Undergraduate Research in Engineering (SURE), University of Michigan

Other Services:

- **Signatory Committee Member**, IEOR Graduate Student Organization, UC Berkeley Fall 2019

- **Graduate Mentor**, Winter 2018
  Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB)

- **Mentor**, Engineers for a Sustainable World (ESW), UC Berkeley Winter 2018

Professional Activities

- **Area Chair for AISTATS 2024** 2023

- **Area Chair for ICLR 2024** 2023

- **Area Chair for NeurIPS 2023** 2023

- **Session Organizer**, INFORMS Annual Meeting, Phoenix, IL 2023
  Session title: "Global Guarantees in Nonconvex Optimization"

- **Session Organizer**, Allerton Conference, Monticello, IL 2023
  Session title: "Recent Advances in Optimization I & II"

- **Session Organizer**, SIAM Optimization Conference, Seattle, WA 2023
  Session title: "Recent Advances in Nonconvex Optimization"

- **NSF Panelist**, Communications and Information Foundations (CIF) program 2022

- **Area Chair for AISTATS 2023** 2022

- **Session Organizer**, INFORMS Annual Meeting, Indianapolis, IN 2022
  Session title: "Recent Advances in Non-convex Optimization I & II"

- **Poster Committee**, Learning for Dynamics & Control Conference 2021

- **Session Organizer**, INFORMS Annual Meeting, Anaheim, CA 2021
  Session title: "Recent Advances in Data-driven Non-convex Optimization"

- **Session Organizer**, INFORMS Annual Meeting, National Harbor, MD 2020
  Session title: "Optimization, Learning, and Control"

- **Session Organizer**, INFORMS Annual Meeting, Seattle, WA 2019
  Session title: "Recent Advances in Large-Scale Optimization"

- **Journal Reviewing**
  - Journal of Machine Learning Research
  - Journal of Optimization Theory and Applications
  - SIAM Journal on Optimization
  - SIAM Journal on Control and Optimization
  - European Journal of Operations Research
  - IEEE Transactions on Information Theory
  - Annals of Operations Research
  - Optimization and Engineering
  - IEEE Transactions on Automatic Control

- IEEE Transactions on Signal Processing
- Automatica
- IEEE Transactions on Smart Grid
- IEEE Transactions on Power Systems
- IEEE Transactions on Control of Network Systems
- IEEE Control System Letters
- IEEE Access
- Systems & Control Letters

- **Conference Reviewing**
  - Conference on Neural Information Processing Systems (NeurIPS)
  - International Conference on Machine Learning (ICML)
  - International Conference on Learning Representations (ICLR)
  - International Conference on Artificial Intelligence and Statistics (AISTATS)
  - Conference on Decision and Control (CDC)
  - American Control Conference (ACC)
  - European Control Conference (ECC)
  - International Conference on Machine Learning and Applications (ICMLA)