Vishal Gupta

http://faculty.marshall.usc.edu/Vishal-Gupta/

CONTACT INFORMATION

Marshall School of Business
3670 Trousdale Parkway, BR 401 G
Los Angeles, CA 90089

guptavis@usc.edu
Google Scholar
Twitter: @vishalguptaphd

RESEARCH INTERESTS

Data-driven optimization in settings with scarce or low-precision data. Decision-Aware Learning. Applications in prescriptive analytics, causal inference, and artificial intelligence.

EMPLOYMENT

Marshall School of Business, Los Angeles, CA — **2014 – Present**
Dean's Associate Professorship in Business Administration — 2024 - Present
Associate Professor of Industrial & Systems Engineering — 2022 – Present
- Courtesy Appointment

Affiliate Faculty, Center for Artificial Intelligence and Society — 2019 – Present
Associate Professor (w. tenure) of Data Sciences and Operations — 2021 – 2024
Assistant Professor of Data Sciences and Operations — 2014 - 2021

The Wharton School at the University of Pennsylvania — **Spring 2023**
Visiting Scholar

National University of Singapore, Singapore — **Fall 2022**
Visiting Professor Institute for Operations Research and Analytics
Visiting Professor, NUS Business School, Analytics and Operations

Analytics Operations Engineering, Inc., Boston, MA — **Summer 2011**
Summer Associate

Barclays Capital, New York, NY — **2005 - 2009**
New York Head of Commodities Tactical Modeling — 2008 - 2009
Manager, Quantitative Analytics Commodities Modeling Group — 2007 - 2008
Analyst, Quantitative Analytics Commodities Modeling Group — 2005 - 2007

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA — **2009 - 2014**
Ph.D. in Operations Research
- Thesis: Data-Driven Models for Uncertainty and Behavior
- Advisor: Prof. Dimitris Bertsimas

University of Cambridge, Cambridge, England — **2004 - 2005**
Part III Mathematics Tripos
- Graduated with "Distinction"
- Essay: Hedging Financial Derivatives as a Differential Game

Yale University, New Haven, CT — **2000 - 2004**
B.A. in Mathematics and Philosophy
- Graduated with Honors, Magna Cum Laude
- Phi Beta Kappa

HONORS / AWARDS

Global Supply Chain Excellence Summit: Faculty Excellence Award **2024**
Awarded to one faculty by the Kendrick Supply Chain Institute for achievements across teaching and research of supply-chain analytics.

Evan C. Thompson Award for Faculty Mentoring and Leadership **2024**
Awarded for excellence in mentoring of junior faculty, graduate students, and undergraduate students and serving as a role model of excellence for students and junior colleagues.

Marshall Leadership Program **2024**
Selected for professional development program focused on preparing promising faculty and staff for leadership roles. Fellows network and learn about strategic opportunities and challenges of school.

Dean's Award for Community **2022**
Awarded to one faculty each year at USC Marshall who has "risen above the call of duty to make Marshall a better place."

Daniel H. Wagner Prize for Excellence in the Practice of Advanced Analytics and Operations Research **2021**
Awarded for paper "Interpretable OR for High-Stakes Decision-Making: Designing the Greek COVID-19 Testing System," *(with H. Bastani, and K. Drakopoulos).* The Wagner Prize recognizes strong mathematics applied to practical problems and is awarded to a paper demonstrating strong analytical content, good writing, and verifiable success in practice.

Pierskalla Best Paper Competition **2021**
Awarded by the Health Applications Society of INFORMS for the paper "Deploying an Artificial Intelligence System for COVID-19 Testing at the Greek Border," (*with H. Bastani, K. Drakopoulos, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis, S. Tsiodras).* INFORMS selects 3-5 finalists each year to recognize research excellence in the field of health care management science.

Public Sector Operations Research Best Paper Award, 2nd Place **2021**
Awarded by the Public Sector Operations Research Society of INFORMS for the paper "Deploying an Artificial Intelligence System for COVID-19 Testing at the Greek Border," (*with H. Bastani, K. Drakopoulos, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis, S. Tsiodras).* INFORMS selects 4 papers judged to the best quality across all disciplines and application areas represented within public sector operations research.

Post-Pandemic Supply-Chain and Healthcare Management Best Paper Competition Finalist **2021**
Awarded for the paper "Deploying an Artificial Intelligence System for COVID-19 Testing at the Greek Border" by the Post-Pandemic Supply-Chain and Healthcare conference. One of 6 finalists.

Dr. Jagdish Sheth Impact of Research on Practice Award **2021**
Awarded to a USC Marshall faculty each year whose research has meaningfully changed the practice of business, regulators, or society at large. Award criteria

include documented evidence of substantive real-world impact, the breadth of that impact, and the degree of adoption by key stakeholders. Awarded in 2021 for our on-going collaboration with the Greek Government in their management of the COVID-19 pandemic.

Dean's Award for Research Excellence **2020**
Awarded to a faculty member at USC Marshall whose research meets the highest aspirations of the Marshall School and USC. Criteria for award include an exceptional publishing record, recognized scholarship outside the university, and significant research impact across their respective fields.

Management Science Meritorious Service Award **2018, 2019, 2020**
Awarded to a select group of reviewers for consistently writing "timely, unbiased, and thoughtful" referee reports.

Pierskalla Best Paper Competition Finalist **2018**
Awarded by the Health Applications Society of INFORMS for the paper "Maximizing Intervention Effectiveness" (*with B.R. Han, S.H. Kim and H. Paek).* INFORMS selects 3-5 finalists each year to recognize research excellence in the field of healthcare management science.

Service Science Best Paper Competition Finalist **2018**
Awarded by the INFORMS Service Science Section for the paper "Value of Personalized Pricing" (*with A. Elmachtoub and M. Hamilton).* 8 finalists are chosen each year to recognize outstanding papers in theory, methodologies, and applications of service science.

POMS CHOM Best Paper Competition Finalist **2018**
Awarded by the College of Healthcare Operations Management (CHOM) for the paper "Maximizing Intervention Effectiveness" (*with B.R. Han, S.H. Kim and H. Paek).* CHOM selects 3-5 finalists each year to honor outstanding papers in the field of healthcare operations management.

Evan C. Thompson Teaching and Learning Innovation Award **2016**
Awarded for curriculum redesign of *BUAD 425: Data-Analysis for Decision-Making*. Awarded to one Marshall faculty member per year for developing innovative course materials, implementing new learning pedagogies and demonstrating commitment to students' learning and success.

George Nicholson Student Paper Competition Finalist **2013**
Awarded for the paper "Data-Driven Robust Optimization," *(with D. Bertsimas and N. Kallus).* The George Nicholson Prize Committee selects approximately 8 papers each year to identify and honor outstanding papers in the field of operations research written by students.

Best Student Paper Prize, MIT Operations Research Center **2013**
Awarded for the paper "Robust SAA," *(with D. Bertsimas and N. Kallus).* Awarded to one student-authored paper each year in the MIT ORC PhD Program, recognizing outstanding achievement in operations research.

MIT Teaching Certificate **2013**
Issued at the completion of a semester-long, intensive course on best-practices

for teaching in higher education.

Honorable Mention, Hubway Data Visualization Challenge **2013**
Open challenge to create a visualization for data comprising a half-million rides on Boston's Bike-Share network *(with H. Barrigan and A. Calmon).*

Best Student Presentation, INFORMS Financial Services Section **2012**
Awarded for "Fitting Investor Risk Preferences to Data."

Nominated for Excellence in Teaching Award **2012**
Awarded for teaching assistant role in the MBA Core Course "Data, Models and Decisions" at MIT Sloan. Selected by MBA students.

Charles M. Vest Presidential Fellowship for Doctoral Studies **2009 - 2010**
Awarded to three first-year graduate students at MIT across all fields to support their doctoral work.

Paul Mellon Fellowship for Graduate Research **2005**
Awarded to one graduating Yale senior to fully support two years of study at the University of Cambridge, UK, in the discipline of their choice.

Timothy Dwight Masters Cup **2004**
Awarded each year to a graduating senior who exemplifies high academic rank, scholarly achievement, and the values of Timothy Dwight College at Yale University.

GRANTS

NRT-AI: Integrating Artificial Intelligence and Operations Research Technologies **2024-2029**
Role: Co-PI Amount: $2,940,542
NSF Grant FAIN: 2346058

Optimization in the Small Data Regime **2017 - 2021**
Role: Sole Principal Investigator Amount: $221,592
NSF Grant CMMI-1661732

Small Data Linear Optimization **2017 - Present**
Role: Principal Investigator Amount: $25,000
Outlier Research Grant
Institute for Outlier Research in Business (iORB), USC

PUBLICATIONS

Asterisk (*) indicates a student co-author.
All authorship is alphabetical unless otherwise indicated.

1. "Decision-Focused Learning with Directional Gradients," with M. Huang. **NeurIPS 2024** (to appear). Extended journal version in preparation.

2. "Beyond Discretization: Learning the Optimal Solution Path," with Q. Dong* and P. Grigas. **Under Review** at AIStats 2025.

3. "Decision-Aware Denoising," with M. Huang and P. Rusmevichientong. **Under Review** at Management Science (submitted May 2024)

4. "Balanced Off-Policy Evaluation for Personalized Pricing" with A. Elmachtoub and Y. Zhao*.
   Artificial Intelligence and Statistics (AISTATS) 2023.

5. "Debiasing In-Sample Policy Performance for Small-Data, Large-Scale Optimization," with M. Huang* and P. Rusmevichientong.
   Operations Research**,** Vol 72, No. 2, 2022.

6. "Interpretable Operations Research for High Stakes Decision-Making: Designing the Greek COVID-19 Testing System," with H. Bastani, K. Drakopoulos, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis, S. Tsiodras.
   INFORMS Journal on Applied Analytics, Vol. 52, Pages 395-470, 2022.
   - Winner of the 2021 Wagner Prize for Excellence in the Practice of Advanced Analytics and Operations Research.

   Notes: Authors H. Bastani, K. Drakopoulos and V. Gupta contributed equally to the work.

7. "Efficient and Targeted COVID-19 Border Testing via Reinforcement Learning," with H. Bastani, K. Drakopoulos, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis, S. Tsiodras.
   Nature, Vol. 599, pp. 108–113, 2021.
   - Winner of the 2021 Pierskalla Best Paper Competition.
   - 2nd Place in the 2021 Public Sector Operations Research Best Paper Competition.
   - Finalist in the 2021 Post-Pandemic Supply-Chain and Healthcare Management Best Paper Competition.
   - Selected for Spotlight Presentation at the Reinforcement Learning for Real-Life Workshop (ICML 2021).

   Notes: Authors H. Bastani, K. Drakopoulos and V. Gupta contributed equally to the work. A previous version of this work was titled: "Deploying an Artificial Intelligence System for COVID-19 Testing at the Greek Border."

8. "Data-Pooling in Stochastic Optimization," with N. Kallus.
   Management Science, Vol. 68, No. 3, pp. 1595-1615, 2021.

9. "Value of Personalized Pricing," with A. Elmachtoub and M. Hamilton*.
   Management Science, Vol. 67, Issue 10, pp. 6055-6070, 2021.
   - Finalist in the 2018 INFORMS Service Science Best Paper Competition.
   - Accepted to 15th Conference on Web and Internet Economics (WINE), 2019.

10. "Small-Data, Large-Scale Linear Optimization with Uncertain Objectives," with P. Rusmevichientong.
    Management Science, Vol. 67, No. 1, pp. 220-241, 2021.

11. "Maximizing Intervention Effectiveness," with B.R. Han*, S.H. Kim, and H. Paek.
    Management Science, Vol. 66, No. 12, pp. 5576-5598, 2020.
    - Finalist in the 2018 Pierskalla Best Paper Competition.
    - Finalist in the 2018 POMS College of Healthcare Operations (CHOM) Best Paper Competition.

12. "Near-Optimal Bayesian Ambiguity Sets for Distributionally Robust

Optimization." (Single Author Work).
Management Science, Vol. 65, No. 9, pp. 4242-4260, 2019.

13. "Robust Sample Average Approximation," with D. Bertsimas and N. Kallus.
Mathematical Programming, Vol. 171, pp. 217-282, 2018.
    - Awarded 2013 Best Student Paper MIT Operations Research Center.

14. "Data-Driven Robust Optimization**,"** with D. Bertsimas and N. Kallus.
Mathematical Programming, Vol. 167, pp. 235-292, 2018.
    - Finalist in the 2013 George Nicholson Student Paper Competition.

15. "A Comparison of Monte Carlo Tree Search and Mathematical Optimization for Large Scale Dynamic Resource Allocation," with D. Bertsimas, D. Griffith, M. Kochenderfer, and V. Mišić.
European Journal of Operations Research, Vol. 263, No. 2*,* pp. 664-678, 2017.

16. "A Course on Advanced Software Tools for Operations Research and Analytics," with I. Dunning, A. King, J. Kung, M. Lubin and J. Silberholz.
INFORMS Transaction on Education, Vol. 15, No. 2, pp. 169-179, 2015.

17. "Data-Driven Estimation in Equilibrium using Inverse Optimization," with D. Bertsimas and I. Ch. Paschalidis.
Mathematical Programming, Vol. 153, pp. 595-633, 2015.

18. "Inverse Optimization: A New Perspective on the Black-Litterman Model," with D. Bertsimas and I. Ch. Paschalidis.
Operations Research, Vol. 60, No. 6, pp. 1398-1403, 2012.

IN-PROGRESS/WORKING

19. "3D-Printing for Flexible Supply-Chain Resilience," with Z. He* and N. Vyas.
Targeting Journal Publication at MSOM.

20. "A Unified Perspective of Surrogates for Decision-Aware Learning via Directional Gradients," with. M. Huang. Targeting journal submission to **Operations Research.**

INVITED BOOK CHAPTERS

21. "Optimization in the Small-Data, Large-Scale Regime." (Single Author Work).
Joint Learning and Optimization in Operations Management.
Editors: Xi Chen, Stefanus Jasin, and Cong Shi.

22. "Reinforcement Learning for Public Health: Targeted COVID-19 Screening," with H. Bastani and K. Drakopoulos.
Artificial Intelligence for Social Impact.
Editors: Fei Fang, Bryan Wilder and Milind Tambe.

INVITED TALKS

"Surrogates for Decision-Aware Learning"
- Departmental Seminar, **UNC Kenan-Flager Business School** (12/2024)

"Decision-Aware Denoising"
- 2024 INFORMS Annual Meeting, Seattle, WA (10/2024)

Panelist: "*AI in Higher Education"*
USC Marshall 12th Annual Global Supply Chain Summit

"Learning Best-in-Class Policies in the Predict-Then-Optimize Framework"
- 25th International Symposium on Mathematical Programming (**ISMP**), Vancouver CA (5/2024)

"AI: Pitfalls, Perils and Promise"
- **The New Analytics MBA**, Columbia Business School, New York (2023)

Invited Discussant/Lead Researcher for **CCC-INFORMS-ACM SIGAI Workshop** *Artificial Intelligence and Operations Research* for session on "Deploying ML Models in Low-Data Regimes" (3/2024)
"Decision-Aware Data Aggregation"
- 2023 INFORMS Annual Meeting, Phoenix, AZ (10/2023)
- Departmental Seminar, **Goizuetta Business School** (9/2023)
- **SIAM Conference on Optimization**, Seattle, WA (2023)

"Debiasing In-Sample Policy Performance"
- Departmental Seminar, **UT Austin McCombs School of Business** (10/23)
- Departmental Seminar, **UBC Sauder School of Business** (9/2023)
- Departmental Seminar, **The Wharton, University of Pennsylvania**, (4/23)
- Departmental Seminar, **Duke Fuqua**, (4/23)

"Contextual Stochastic Optimization with Panel Data"
- Departmental Seminar, **Singapore Management University**, (10/22)
- Departmental Seminar, **Singapore University of Technology and Design** (10/22)

Keynote: *"The Small-Data, Large-Scale Optimization Regime: The Future of Analytics"*
- **Analytics for X Conference,** Institute for Operations Research and Analytics, National University of Singapore (Oct 2022)

"Interpretable Operations Research for High Stakes Decision-Making: Designing the Greek COVID-19 Testing System"
- Indian Institute of Management Ahmedabad (IIM), Research and Publication Webinar Series (4/2022)
- 2022 INFORMS Business Analytics Conference, **Wagner Reprise Session,** Houston Texas (4/2022)
- 2021 INFORMS Annual Meeting, **Wagner Prize Session,** Anaheim CA (10/2021)

"Real-Time, Targeted Covid-19 Screening at the Greek Border"

- INFORMS Health Application Society, **Online Seminar**, Virtual, (6/2022)
- Guest Lecture, "Analytics for Social Impact," **USC Viterbi School of Engineering,** Los Angeles, CA (4/2022) (Class targets Masters and PhD Students)
- Operations Management Seminar**, India School of Business***,* Virtual, (10/2020)
- **INFORMS Annual Meeting**, Anaheim CA*, (10/2021)*
- **INFORMS Annual Meeting**, Virtual, (11/2020)
- **Dean's Dialogue Webinar Series, USC Marshall,** (11/2020)
- Guest Lecture, "IEOR 4650: Business Analytics," **Columbia University,** New York, NY (Nov. 2020). (Class targets Masters and PhD students)

"Decision-Making under Data Scarcity"

- Assistant Professor Research Day, **USC Marshall,** Los Angeles CA (12/2020)
- Operations Management Seminar, **USC Marshall,** Los Angeles CA (10/2020)

"Data-Pooling in Stochastic Optimization"

- Guest Lecture, "OIDD 941: Recent Advances in Data-Driven Decision-Making," **The Wharton School**, Philadelphia, PA (4/23) (Class targets PhD Students)
- Technology and Operations Departmental Seminar, **University of Michigan Ross School of Business**, Ann Arbor, MI (12/2019)
- Guest Lecture, "IEOR 8100 Prescriptive Analytics," **Columbia University,** New York, NY (11/2019) (Class targets PhD Students)
- Decisions, Operations and Technology Management Seminar, **UCLA Anderson School of Management,** Los Angeles, CA (11/2019)
- Desautels Faculty of Management Departmental Seminar, **McGill University,** Montreal, CA (10/2019)
- **INFORMS Annual Meeting, Seattle**, WA (10/2019)
- Industrial and Systems Engineering Departmental Seminar, **University of Southern California,** Los Angeles, CA (9/2019)
- DSO Graduate Research Forum, **USC Marshall**, Los Angeles, CA (9/2019)
- Operations Management Departmental Seminar, **Booth School of Business at University of Chicago,** Chicago, IL (9/2019)
- 6th International Conference on Continuous Optimization (**ICCOPT**), Berlin, Germany (8/2019)
- Operations and Information Technology Departmental Seminar, **Stanford Graduate School of Business,** Palo Alto, CA (5/2019)
- Southern California OR/OM Day, **UC Irvine,** Irvine, CA, (5/2019)
- Models and Algorithms for Sequential Decision-Making Problems Under Uncertainty Workshop, **Banff International Research Station**, Banff, Canada (1/2019)
- Joint Industrial Engineering and Operations Research and Decision, Risk and Operations Departmental Seminar, **Columbia University**, NY, New York (12/2018)
- **INFORMS Annual Meeting**, Phoenix, AZ (11/2018)

"*Probability Guarantees in Data-Driven Robust Optimization"*
- Guest Lecture, ISyE Reading Group, **USC Viterbi**, Los Angeles, CA (10/2019)

"Operations Research and Analytics Education" (panel speaker)
- 65th Operations Research Center Reunion, **Massachusetts Institute of Technology (MIT)**, Cambridge, MA (11/2018)

"*Optimization in the Small-Data, Large-Scale Regime"*
- Management Sciences and Operations Department Seminar, **Imperial College School of Business,** London, UK (7/2018)
- 29th European Conference on Operations Research **(EURO)**, Valencia Spain (7/2018)
- 23rd International Symposium on Mathematical Programming **(ISMP)**, Bordeaux, France (7/2018)
- Decision Sciences Group, **Duke Fuqua School of Business**, Durham, NC (5/2018)
- Technology and Operations Management Group Seminar, **INSEAD**, Paris, France (4/2018)
- Operations and Logistics Division Seminar, **UBC Sauder School of Business**, Vancouver, Canada (1/2018)
- DSO Graduate Research Forum, **USC Marshall**, Los Angeles, CA (12/2017)
- **INFORMS Annual Meeting**, Houston, TX (10/2017)
- **INFORMS Annual Meeting**, Nashville, TN (11/2016)
- 5th International Conference on Continuous Optimization (**ICCOPT**), Tokyo, Japan (8/2016). *Invited Session Chair for "Recent Advances in Data-Driven Optimization."*

"*Calibrating Uncertainty Sets in the Small-Data, Large-Scale Regime"*
- Distributionally Robust Optimization Workshop, **Banff International Research Station**, Banff, Canada (3/2018)

"*Maximizing Intervention Effectiveness"*
- International Conference on Stochastic Optimization **(ICSP),** Trondheim, Norway (7/2019). *Co-Chair of Mini-symposium: Doing Good with Good RO.*

"*Data-Driven Distributionally Robust Optimization"*
- Electrical Engineering Group, **USC Viterbi**, Los Angeles, CA (1/2016)

"*Near-Optimal Bayesian Ambiguity Sets in Distributionally Robust Optimization"*
- **INFORMS Annual Meeting**, Philadelphia, PA (11/2015)
- 22nd International Symposium on Mathematical Programming (**ISMP**), Pittsburgh, PA (7/2015)
- British-French-German **(BFG)** Conference on Optimization, London, UK (6/2015)
- Southern California OM/OR Conference, **UCLA** (5/2015)
- **INFORMS Annual Meeting**, San Francisco, CA (11/2014)

"Modeling Uncertainty in Optimization"
- DSO Graduate Research Forum, **USC Marshall**, Los Angeles, CA (2/2015)

"*Data-Driven Robust Optimization"*
- **Carnegie Mellon University**, Pittsburgh, PA (2/2014)
- Industrial and Operations Engineering at **University of Michigan**, Ann Arbor, MI (2/2014)
- **McCombs Business School** at University of Texas at Austin, Austin, TX (2/2014)
- **USC Marshall School of Business**, Los Angeles, CA (2/2014)
- **NYU Stern School of Business**, New York, NY (1/2014)
- **London Business School (LBS)**, London, UK (1/2014)
- Operations Management Seminar, **MIT Sloan School of Management**, Cambridge, MA (11/2013)
- **INFORMS Annual Meeting**, Minneapolis, MN (10/2013)
- **MSOM Conference**, Paris, France (7/2013)
- Conference on **Computational Management Science (CMS)**, Montreal, Canada (5/2013). *Invited Session Chair for "Robust Optimization II"*

"*Inverse Optimization Approaches to Estimation"*
- **INFORMS Annual Meeting**, Phoenix, AZ (10/2012). *Invited Session Chair for "Optimization under Uncertainty."*
- **21st International Symposium on Mathematical Programming (ISMP)**, Berlin, Germany (6/2012)

"*Constructing Investor Risk Preferences from Data"*
- **INFORMS Annual Meeting**, Minneapolis, MN (10/2013)
- **INFORMS Annual Meeting**, Phoenix, AZ (10/2012)

"*Inverse Optimization: A New Perspective on the Black-Litterman Model"*
- **INFORMS Annual Meeting**, Charlotte, NC (11/2011)

TEACHING

DSO 699: Stochastic Modeling for Optimization and Learning **2021, 2024**
PhD and Graduate Students
USC Marshall School of Business
Instructor, Course Development
New, core class in the Operations Management PhD Program. Covers fundamental results in probability theory, concentration of measure, convergence theorems with applications in data-driven operations management and prescriptive analytics.

BUAD 498: AI: Seed for Change or Existential Threat? **2022, 2024**
Undergraduate Elective
USC Marshall School of Business
Instructor, Course Development
This flagship course is part of Marshall's new "Innovative Courses for Undergraduates" program. It exposes students to both the promise and perils of AI. The course centers on guest speakers from industry, non-profit, and government discussing the interplay of algorithmic decision-making, business, and society.

PhD Mini-Course: Foundations of Decision-Aware Learning **2022**
PhD and Graduate Students
National University of Singapore / Institute for Operations Research and Analytics
Instructor, Course Development
This minicourse is designed to introduce graduate students to the principal theoretical tools used when designing and analyzing decision-aware algorithms for data-driven optimization. Focus is on empowering students to use these tools in their own research. Covers some recent developments within the field.

BUAD 493/494: Marshall Honors Research Seminar Analytics and Operations Management **2021**
Undergraduate
USC Marshall School of Business
Instructor, Course Development
Two semester seminar to advise business honors students on conducting independent research in data science and operations that will ultimately culminate in their undergraduate thesis.

DSO 699: Workshop on Expositional Writing in Mathematics **2021**
PhD and Graduate Students
USC Marshall School of Business
Instructor, Course Development
New, core class in the Operations Management PhD Program. Course helps students focus on best-practices when writing mathematics, particularly for peer-reviewed journals. Special emphasis on how to structure proofs, clearly explain methods and justify assumptions. Additional emphasis on explaining contributions, literature reviews, and visualizations and graphs in written documents.

DSO 670: Data-Driven Optimization: Theory, Methods and Current Themes **2020**
PhD and Graduate Students
USC Marshall School of Business
Instructor
This is a Ph.D. seminar course covering recent papers.

BUAD 311 Introduction to Operations Management **2015, 2019 - 2021**
Undergraduate Core
USC Marshall School of Business
Instructor

BUAD 425 Data-Analysis for Decision Making **2016, 2017**
Undergraduate Core
USC Marshall School of Business
Instructor, Course Coordinator
Redesigned course with new emphasis on critical thinking and decision-making. Authored cases, created online videos, and developed new curriculum content.

15.S60 Software Tools for Operations Research **2013, 2014**
Ph.D., MBA and Executive MBA Elective
MIT Sloan School of Management
Instructor

Designed new course with primary role in curriculum development. Oversaw course logistics and lectured on select topics in convex optimization.

PHD MENTORSHIP

- Advisor
  - Luyang Zhang, USC Marshall (2022 – 2024)
  - Michael Huang, USC Marshall (2017 - 2024)
    First Placement: Tenure-Track Assistant Professor at City University of New York (CUNY), Baruch College, Zicklin Business School
  - Julia Balukonis, USC Marshall (2020 - 2021)

- Co-Author
  - Qiran Dong, Berkeley IEOR (2022 – Present)
  - Yunfan Zhao, Columbia IEOR (2020 - 2023)
    First Placement: Post-Doctoral Researcher at Harvard Computer Science
  - Brian Rongqing Han, USC Marshall, (2016 - 2019)
    First Placement: Tenure-Track Assistant Professor at University of Illinois at Urbana-Champaign (UIUC), Gies School of Business
  - Michael Hamilton, Columbia IEOR (2016 - 2019)
    First Placement: Tenure-Track Assistant Professor at the University of Pittsburgh, Katz Graduate School of Business

- Qualifying Examination Committee
  - Xinyao Zhang,USC Viterbi Industrial and Systems Engineering (2024)
  - Qing Jin, USC Viterbi Industrial and Systems Engineering (2023)
  - Di Zhang, USC Viterbi Industrial and Systems Engineering (2023)
  - Aikaterini Giannoutsou, USC Marshall Operations Management (2022)
  - Sina Baharlouei, USC Viterbi Industrial and Systems Engineering (2022)
  - Haochen Jia, USC Viterbi Industrial and Systems Engineering (2022)
  - Ying Peng, USC Viterbi Industrial and Systems Engineering (2022)
  - Bo Jones, USC Viterbi Industrial and Systems Engineering (2021)
  - Bradley Rava, USC Marshall Statistics (2019)
  - Shobhit Jain, USC Marshall Operations Management (2018)

- Dissertation Committee
  - Di Zhang, USC Viterbi Industrial and Systems Engineering (2024)
  - Ziyu He, USC Viterbi Industrial and Systems Engineering (2023)
  - Ian Yihang Zhu, University of Toronto (2023)
  - Yunfan Zhao, Columbia IEOR (2023)
  - Ying Peng, USC Viterbi Industrial and Systems Engineering (2023)
  - Haochen Jia, USC Viterbi Industrial and Systems Engineering (2022)
  - Bo Jones, USC Viterbi Industrial and Systems Engineering (2022)
  - Brian Rongqing Han, USC Marshall (2020)
  - Michael Hamilton, Columbia IEOR (2019)
  - Junyi Liu, USC ISyE (2019)

POSTDOCTORAL MENTORSHIP

- Advisor
  - Ziyu He, Randall R. Kendrick Global Supply Chain Institute (Fall 2023-Present)

OTHER MENTORSHIP

- Yongjia Wang **Summer 2024**
  - USC Summer Scholars in Data Sciences and Operations
  - Project: "The Fragility of Gerrymandering Metrics"

- Mengchu Yue **Summer 2024**
  - USC Summer Scholars in Data Sciences and Operations
  - Project: "The Fragility of Gerrymandering Metrics"

- Joshua Zhong **Summer 2024**
  - USC Summer Scholars in Data Sciences and Operations
  - Project: "The Fragility of Gerrymandering Metrics"

- Manan Mehta **Summer/Fall 2023**
  - USC Masters in Computer Science
  - Project: "Enhancing Student Reflections with the Socratic Method using LLMs"

- Kshitij Ahuja **Summer/Fall 2023**
  - USC Masters in Data Science
  - Project: "Assessing Racial Disparities in Logistics Systems"
- Arvin Duh **Fall 2023**
  - USC Undergraduate (BUAI)
  - Project: Recommending US Colleges

- Jake Palmieri **Summer 2023**
  - USC Summer Scholars in Data Sciences and Operations
  - Project: "Using GPUs to Speed-up Discrete Event Simulation"
  - Winner of an INFORMS Undergraduate Scholarship to attend the annual meeting

- Hoang Chu **Summer 2023**
  - USC Undergraduate Summer Scholars in OM and Data Science
  - Project: "Assessing Racial Disparities in Logistics Systems"
  - Currently Applying to Ph.D. Programs in OM/Operatins Research

- Sara Bangerth **2022**
  - Former USC Marshall MsBA student interested in pursuing a PhD
  - Weekly meetings to expose to research and prepare for graduate school

- Spencer Xie **2021**
  - Undergraduate mentee completing a senior thesis, "Measuring Digital Upskilling Success"
  - Earned a Discovery Scholars distinction for his thesis
  - Finalist in the Discovery Scholars Prize
  - First Placement: Stanford Law School

- Tiffany Chou **2021**

- Undergraduate mentee completing a senior thesis, "Strategic Use of Patent Portfolios in Cloud Computing Enterprises"
- Earned a Discovery Scholars distinction for her thesis
- Earned 2nd Place USC Libraries Research Prize for her thesis
- First Placement: KPMG

- Sanika Sahasrabudhe **2021**
  - Undergraduate mentee completing a senior thesis, "Drivers of Customer Loyalty for Communication Service Providers"
  - Earned a Discovery Scholars distinction for her thesis
  - First Placement: McKinsey and Co.

- Xueqi Wang **2016 - 2017**
  - UC Berkeley Undergraduate collaborating with me for 1 year
  - First Placement: Duke Biostatistics PhD Program

- Qin "Henry" He **2019 – 2020**
  - Rising senior in Applied Mathematics/Economics at USC
  - First Placement: Duke Statistical Science Master's Program

UNIVERSITY SERVICE

Data Sciences and Operations (DSO) PhD Coordinator **2021 - Present**
Oversees the Operations Management & Statistics PhD program. Serves on Marshall PhD committee which determines strategic directions of PhD Programs at school level.

Data Sciences and Operations (DS) Peer Evaluation Group **2023 – Present**
- 4th Year Review 2023, 2024, 2025

Operations Management (OM) Group PhD Coordinator **2020 - 2021**
Manages the OM PhD program including admissions, screening and qualifying exams, on-going mentoring of students. Also heads OM PhD Committee and periodically assesses curriculum changes to PhD.

BUAD 311 Core Course Coordinator **2020, 2021**
Coordinated all BUAD 311 instructors to ensure curriculum consistency across sessions. Special focus on unifying course logistics in the face of the COVID-19 Pandemic and unexpected shift to online learning.

Operations Management Group Tenure-Track Hiring Committee **2019 - 2020**
Co-Chair
Led hiring committee, pre-interviewed candidates, and coordinated logistics with faculty and candidates for fly-outs and on-campus interviews.

Data Sciences and Operations - Marketing Seminar Coordinator **2018 - 2019**
Coordinated a bi-semester, brown-bag seminar with DSO and Marketing faculty to promote cross-group research collaboration.

Operations Management Group PhD Committee **2017 - 2020**
Helped design curriculum requirements for PhD program. Wrote the optimization screening exam each year. Served on PhD admissions committee, including reviewing applications and interviewing candidates.

Data Sciences and Operations Seminar Series Coordinator **2014 - 2019**
Invited visiting faculty to present research in departmental seminar. Coordinated all logistical aspects of visits and curated yearly speaker series.

BUAD 425 Core Course Coordinator **2017**
Liaised with Undergraduate Vice-Dean's Office and other core course coordinators to ensure Marshall meets IACSB accreditation standards and develop interdisciplinary approaches to achieving Marshall's Learning Objectives.

Co-Organizer of 2017 So-Cal OR/OM Day **2017**
Organized a one-day, single-track conference with approximately 40 attendees from USC, UCLA Anderson, UC Riverside, and UC Irvine showcasing junior faculty and PhD research in operations research and operations management.

ACADEMIC SERVICE

Associate Editor – *Management Science* **2019 - Present**
Data Science Section

Associate Editor – *Manufacturing & Services Operations Management (MSOM)* **2021-Present**

Associate Editor – Operations Research **2024-Present**
Optimization Section

ICCOPT 2025 Local Organizing Committee **Fall 2023-Present**
Coordinated with the program committee to handle "on-the-ground" planning for the upcoming 2025 ICCOPT Conference (Est. 600-1000 Attendees)

INFORMS George Nicholson Student Paper Competition **2022, 2023**
Reviewed submissions and assisted in selecting winner. Competition is held each year to identify and honor outstanding papers in the field of operations research and the management sciences written by a student.

INFORMS Junior Faculty Forum Best Paper Award **2022**
Reviewed submissions and assisted in selecting winner. Competition is held each year to increase the visibility of research conducted by junior faculty within the fields of operations research and management science.

INFORMS Minority Issues Forum Student Poster Competition **2022, 2021**
Reviewed submissions and provided detailed feedback to participants. Assisted in selecting winner. The MIF Student Poster competition aims to foster under-represented minority participation in operations research and management science.

INFORMS 2021 Annual Conference Organizing Committee **2020 - 2021**
Contributed Sessions Planning Committee: Data-Driven Methods in Optimization. Solicit, organize and schedule research presentations to be presented at the 2021

conference in Anaheim, CA (October 2021).

INFORMS Best Case Competition Judge **2020 - 2021**
Assists in reviewing submissions and selecting winner. Competition seeks instructional cases focusing on real-world applications of operations research and operations management.

Journal Reviewer/Referee
Operations Research, Management Science, Management Science and Operations Management, Production and Operations Management, OR Letters, SIAM Journal on Control and Optimization, SIAM Review, INFORMS Journal on Computing, INFORMS Journal on Optimization, IISE Transactions, Optimization Letters

Conference Program Committee/Reviewer
- NIPS (2016)
- AAAI (2020)
- AISTATS (2020, 2023, 2024)

National Science Foundation (NSF) Panel Reviewer
- CMMI / OE Program (2017)

LANGUAGES	English (native), Spanish (conversational), Hindi (beginner)
CITIZENSHIP	USA
REFERENCES	Available upon request