

Karthik Natarajan

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Date of Birth: 15th June 1978

- EMPLOYMENT
- ◇ **Engineering Systems and Design, Singapore University of Technology and Design (SUTD)**
 - Professor (April 2019 onwards)
 - Associate Head of ESD Pillar (Undergraduate Programme) (April 2019 onwards)
 - Tenured Associate Professor (July 2014-March 2019)
 - Associate Head of ESD Pillar (July 2014-March 2019)
 - ◇ **Engineering Systems and Design, SUTD**
 - Associate Professor (Jan 2012-June 2014)
 - ◇ **Department of Management Sciences, College of Business, City University of Hong Kong (CityU)**
 - Associate Professor (2009-December 2011)
 - ◇ **Department of Mathematics, National University of Singapore (NUS)**
 - Assistant Professor (2004-09)
 - ◇ **Affiliated Positions**
 - Visiting Scientist, Sloan School of Management, Massachusetts Institute of Technology (MIT) (2009-10)
 - Affiliated Researcher, NUS Risk Management Institute (2006-present)
 - Fellow, Computational Engineering, Singapore-MIT Alliance (2005-09)
 - ◇ **Department of Decision Sciences, NUS**
 - Research Fellow (April-June 2004)
- EDUCATION
- ◇ **Singapore-MIT Alliance (SMA), Singapore**
 - PhD in High Performance Computation for Engineered Systems, NUS (1999-2004)
 - Thesis: Probabilistic Combinatorial Optimization: A Convex Programming Approach
 - Advisors: Dimitris Bertsimas (MIT) and Teo Chung-Piaw (NUS)
 - ◇ **Nanyang Technological University (NTU), Singapore**
 - Bachelors in Electronics and Electrical Engineering with Honors (1995-99)
- AWARDS
- ◇ University Annual Teaching Excellence Award, NUS (2005-06)
 - ◇ Faculty Teaching Excellence Award, Faculty of Science, NUS (2005-06)
 - ◇ Excellent Young Teacher Award, Faculty of Science, NUS (2004-05, 2006-07)
 - ◇ Honorable Mention, George Nicholson Student Paper Competition, INFORMS (2003)
 - ◇ President's Graduate Fellowship, Board of Graduate Studies, NUS (2002-03)
 - ◇ E³ Bronze Medal, School of Electrical and Electronic Engineering, NTU (1999)
- STUDENT AWARDS
- ◇ Second place, Best Student Research Paper Award, Financial Services Section, INFORMS awarded to Li Xiaobo for the paper 'Robustness to Dependency in Portfolio Optimization' co-authored with X V Doan and K Natarajan (2013)
 - ◇ Semi-finalist, INFORMS Interactive Prize Competition awarded to Li Xiaobo for the paper 'A Convex Optimization Approach for Computing Correlated Choice Probabilities with Many Alternatives' co-authored with S D Ahipasaoglu and K Natarajan (2013)

- ◇ Outstanding Undergraduate Research Thesis Prize, NUS awarded to Zheng Zhichao for his thesis work supervised by K Natarajan and C P Teo (2008-09)

COURSES
TAUGHT

- ◇ **Undergraduate:** Single Variable Calculus (SUTD); Modeling the Systems World (SUTD); Statistics (SUTD); Advanced Topics in Optimization (SUTD); Capstone (SUTD); The Analytics Edge (SUTD); Linear and Network Optimization (NUS); Stochastic Operations Research (NUS); Model Building in Operations Research (NUS); Inventory and Queuing Models (NUS); Network Optimization (NUS)
- ◇ **Masters:** Operations Management (CityU); Optimization Methods (SMA); Computing Technology and Tools (SMA)
- ◇ **PhD:** Distributionally Robust Optimization (SUTD); Linear and Discrete Optimization (CityU); Special Topics in Operations Research (CityU)
- ◇ **Doctor of Business Administration:** Methodology for Applied Business Research (CityU)

BOOKS

- ◇ Title: Optimization with Marginals and Moments. Author: K Natarajan. Publisher: Dynamic Ideas LLC, Belmont, Massachusetts. The book is a graduate level research monograph and will be published in 2022.

PUBLICATIONS

- ◇ L Chen, W Ma, K Natarajan, D Simchi-Levi, Z Yan. Distributionally Robust Linear and Discrete Optimization with Marginals. To appear in Operations Research (2021)
- ◇ Z Yan, K Natarajan, C P Teo, C Cheng. A Representative Consumer Model in Data-Driven Multi-Product Pricing Optimization. To appear in Management Science (2021)
- ◇ B Das, A Dhara, K Natarajan. On the Heavy Tail Behavior of the Distributionally Robust Newsvendor. Operations Research, 69, no. 4 (2021): 1077-1099
- ◇ D Padmanabhan, K Natarajan, K Murthy. Exploiting Partial Correlations in Distributionally Robust Optimization. Mathematical Programming, 186 (2021): 209-255
- ◇ A Dhara, B Das, K Natarajan. Worst-Case Expected Shortfall with Univariate and Bivariate Marginals. INFORMS Journal on Computing (2021), 33, no. 1 (2021): 370-389
- ◇ D Padmanabhan and K Natarajan. Tree Bounds for Sums of Bernoulli Random Variables: A Linear Optimization Approach. INFORMS Journal on Optimization, 3, no. 1 (2021): 23-45
- ◇ L Chen, D Padmanabhan, C C Lim, K Natarajan. Correlation Robust Influence Maximization. Proceedings of the Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS 2020), Virtual-only Conference, Dec 6-12, 2020
- ◇ S D Ahipasaoglu, U Arikan, K Natarajan. Distributionally Robust Markovian Traffic Equilibrium. Transportation Science, 53, no. 6 (2019): 1546-1562
- ◇ S D Ahipasaoglu, K Natarajan, D Shi. Distributionally Robust Project Crashing with Partial or No Correlation Information. Networks, 74, no. 1 (2019): 79-106
- ◇ S D Ahipasaoglu, X Li, K Natarajan. A Convex Optimization Approach for Computing Correlated Choice Probabilities with Many Alternatives. IEEE Transactions on Automatic Control, 64, no. 1 (2019): 190-205
- ◇ K Natarajan, T L Magnanti. Allocating Students to Multidisciplinary Capstone Projects Using Discrete Optimization. Interfaces (now INFORMS Journal on Applied Analytics), 48, no. 3 (2018): 181-289
- ◇ K Natarajan, M Sim, J Uichanco. Asymmetry and Ambiguity in Newsvendor Models. Management Science, 64, no. 7 (2018): 2973-3468
- ◇ K Natarajan, D Shi, K C Toh. Bounds on Random Binary Quadratic Programs. SIAM Journal on Optimization, 28, no. 1 (2018): 671-692
- ◇ A Dhara, K Natarajan. On the Polynomial Solvability of Distributionally Robust k-Sum Optimization. Optimization Methods and Software, 32, no. 4 (2017): 738-753
- ◇ K Natarajan, C P Teo. On Reduced Semidefinite Programs for Second Order Moment Bounds with Applications. Mathematical Programming, 161, no. 1 (2017): 487-518

- ◇ Z Zheng, K Natarajan, C P Teo. Least Squares Approximation to the Distribution of Project Completion Times with Gaussian Uncertainty. Operations Research, 64, no. 6 (2016): 1406-1421.
- ◇ S D Ahipasaoglu, U Arikan, K Natarajan. On the Flexibility of using Marginal Distribution Choice Models in Traffic Equilibrium. Transportation Research Part B, 91 (2016): 130-158
- ◇ X V Doan, X Li, K Natarajan. Robustness to Dependency in Portfolio Optimization using Overlapping Marginals. Operations Research, 63, no. 6 (2015): 1468-1488
- ◇ S D Ahipasaoglu, R Meskarian, T L Magnanti, K Natarajan. Beyond Normality: A Cross Moment-Stochastic User Equilibrium Model. Transportation Research Part B, Special Issue on Optimization of Urban Transportation Service Networks, 81, no. 2 (2015): 333-354
- ◇ V K Mishra, K Natarajan, D Padmanabhan, C P Teo, X Li. On Theoretical and Empirical Aspects of Marginal Distribution Choice Models. Management Science, Special Issue on Business Analytics, 60, no. 6 (2014): 1511-1531
- ◇ K Natarajan, D Shi, K C Toh. A Probabilistic Model for Minmax Regret in Combinatorial Optimization. Operations Research, 62, no. 1 (2014): 160-181
- ◇ X Li, K Natarajan, C P Teo, Z Zheng. Distributionally Robust Mixed Integer Linear Programs: Persistency Models with Applications. Invited Review. European Journal of Operational Research, 233, no. 3 (2014): 459-473
- ◇ C H Chiu, N Z Leung, K Natarajan. New Analytical Bounds on the Average Undershoot in an Infinite Horizon (s,S) Inventory System. Operations Research Letters, 41, no. 11 (2013): 67-73
- ◇ V K Mishra, K Natarajan, H Tao, C P Teo. Choice Prediction with Semidefinite Optimization when the Utilities are Correlated. IEEE Transactions on Automatic Control, 57, no. 10 (2012): 2450-2463
- ◇ X V Doan, K Natarajan. On the Complexity of Non-Overlapping Multivariate Marginal Bounds for Probabilistic Combinatorial Optimization. Operations Research, 60, no. 1 (2012): 138-149
- ◇ K Natarajan, C P Teo, Z Zhichao. Mixed Zero-One Linear Programs under Objective Uncertainty: A Completely Positive Representation. Operations Research, 59, no. 3 (2011): 713-728
- ◇ K Natarajan, M Sim, J Uichanco. Tractable Robust Expected Utility and Risk Models for Portfolio Optimization. Mathematical Finance, 20, no. 4 (2010): 695-731
- ◇ D Bertsimas, X V Doan, K Natarajan, C P Teo. Models for Minimax Stochastic Linear Optimization Problems with Risk Aversion. Mathematics of Operations Research, 35, no. 3 (2010): 580-602
- ◇ K Natarajan, D Pachamanova, M Sim. Constructing Risk Measures from Uncertainty Sets. Operations Research, 57, no. 5 (2009): 1129-1141
- ◇ K Natarajan, M Song, C P Teo. Persistency Model and Its Applications in Choice Modeling. Management Science, 55, no. 3 (2009): 453-469
- ◇ K Natarajan, D Pachamanova, M Sim. Incorporating Asymmetric Distributional Information in Robust Value-at-Risk Optimization. Management Science, 54, no. 3 (2008): 573-585
- ◇ D Bertsimas, K Natarajan. A Semidefinite Approach to the Steady-State Analysis of Queueing Systems. Queueing Systems, 56, no. 1 (2007): 27-39
- ◇ K Natarajan, Z Linyi. A Mean-Variance Bound For A Three-Piece Linear Function. Probability in Engineering and Informational Sciences, 21, no. 4 (2007): 611-621
- ◇ D Bertsimas, K Natarajan, C P Teo. Persistence in Discrete Optimization under Data Uncertainty. Mathematical Programming Series B, 108, no. 2-3 (2006): 251-274
- ◇ D Bertsimas, K Natarajan, C P Teo. Tight Bound on Expected Order Statistics. Probability in Engineering and Informational Sciences, 20, no. 4 (2006): 667-686
- ◇ D Bertsimas, K Natarajan, C P Teo. Probabilistic Combinatorial Optimization: Moments, Semidefinite Programming & Asymptotic Bounds. SIAM Journal of Optimization, 15, no. 1 (2004): 185-209

- CONFERENCE PUBLICATION ◇ F Tsai, K Natarajan, S D Ahipasaoglu, C Yuen, H Lee, N-M Cheung, J Ruths, S Huang and T L Magnanti. From Boxes to Bees: Active Learning in Freshmen Calculus. IEEE Annual Global Engineering Education Conference (EDUCON), (2013)
- BOOK CHAPTERS ◇ K Natarajan. The Random QUBO. To appear in The Quadratic Unconstrained Binary Optimization Problem: Theory, Algorithms, and Applications, edited by A. Punnen, Springer (2022)
- ◇ K Natarajan, M Sim and C P Teo. Beyond Risk: Ambiguity in Supply Chains. Handbook of Integrated Risk Management in Global Supply Chains, edited by P. Kouvelis, O. Boyabatli, L. Dong, and R. Li, John Wiley & Sons Inc. (2011): 103-124
- ◇ K Natarajan. Use of Games and Projects in Teaching Applied Mathematics Courses. Experiments in Pedagogy: Selected Papers from Professional Development Programme (Teaching), Volume Two, Centre for Development of Teaching and Learning, (2007)
- ◇ Y L Cheng, H C Sen, K Natarajan, C P Teo, K C Tan. Dispatching Automated Guided Vehicles in a Container Terminal. Supply Chain Optimization (Applied Optimization), 98 (2005): 355-390
- PAPERS UNDER REVIEW ◇ L Chen, D Padmanabhan, C C Lim, K Natarajan. Robustness to Dependency in Influence Maximization. A conference version of this paper appeared in NeurIPS 2020
- ◇ D Padmanabhan, S D Ahipasaoglu, A Ramachandra, K Natarajan. Extremal Probability Bounds in Combinatorial Optimization
- ◇ A Ramachandra, K Natarajan. Tight Bounds with Pairwise Independence
- RESEARCH GRANTS ◇ **On Enhancing Robustness of Networks to Dependence via Optimization.** MOE Academic Research Fund Tier 2. Principal Investigator (2020-2023). Joint project with D Padmanabhan. Total Value SGD \$333,240.
- ◇ **On the Interplay of Choice, Robustness and Optimization in Transportation.** MOE Academic Research Fund Tier 2. Principal Investigator (2017-2020). Joint project with S D Ahipasaoglu and Ugur Arikan. Total Value SGD \$747,526.
- ◇ **Design of the Last Mile Transportation System: What Does the Customer Really Want?** SUTD-MIT International Design Centre (IDC) Grant. Principal Investigator (2017-2020). Joint project with S D Ahipasaoglu, Ugur Arikan and Anulekha Dhara. Total Value SGD \$225,000.
- ◇ **Distributional Robust Optimization for Consumer Choice in Transportation Systems.** MOE Academic Research Fund Tier 2. Principal Investigator (2014-2017). Joint project with S D Ahipasaoglu. Total Value SGD \$349,250.
- ◇ **Optimization for Complex Discrete Choice.** SUTD-MIT International Design Centre (IDC) Grant. Principal Investigator (2013-2016). Joint project with S D Ahipasaoglu. Total Value SGD \$548,000.
- ◇ **Distributional Robust Optimization: Theory, Algorithms and Applications.** Startup Research Grant. Singapore University of Technology and Design. Principal Investigator (2012-2015). Total Value SGD \$100,000.
- ◇ **Best-Worst Discrete Choice Methods with Convex Optimization.** Hong Kong Research Grant Council, General Research Fund, Principal Investigator (2011-2013). Total Value HKD \$440,809.
- ◇ **Models for Ambiguity in Decision-Making under Uncertainty.** Startup-grant, Department of Management Sciences, City University of Hong Kong. Principal Investigator (2009-2011). Total Value HKD \$500,000.
- ◇ **Modeling Risk and Ambiguity in Decision-Making under Uncertainty.** Academic Research Fund Grant, NUS. Principal Investigator (2008-11). Total Value SGD \$27,000.
- ◇ **Stochastic Analysis of Optimization Problems, Systems and Algorithms.** Startup Grant, NUS. Principal Investigator (2005-08). Total Value SGD \$22,000.

- ◇ **Robust Optimization: A Tractable Approach to Address Optimization and Equilibrium Problems under Uncertainty.**
Singapore-MIT Alliance 2, IUP (Joint between MIT and NUS faculty). Co-Principal Investigator (2005-12). Total Value SGD \$422,400.
- ◇ **Decision Making under Risk and Uncertainty with Applications to Financial Engineering and Risk Management.**
NUS Risk Management Institute (Joint between Berkeley and NUS faculty). Co-Principal Investigator (2007-08). Total Value SGD\$31,000.

UNIVERSITY
SERVICE

- ◇ Associate Head of ESD Pillar (Undergraduate Programme), SUTD (April 2019-present)
- ◇ Associate Head of ESD Pillar, SUTD (July 2014-March 2019)
- ◇ Chair - ESD undergraduate program committee, SUTD (2012-2016), Member - ESD undergraduate program committee, SUTD (2016-present)
- ◇ Chair - SUTD Kickstarter Initiative evaluation panel, Grant review member - SUTD-ZJU Collaboration Research (2014-2016, 2018-present), SUTD-IDC Grant Proposals (2014-2016)
- ◇ Member - University Curriculum Committee, SUTD (2012-15)
- ◇ Application review member - SUTD-MIT Postdoctoral program (2015)
- ◇ Member - Senior Academic Leadership, SUTD (July 2014-2016)
- ◇ Member - University Search Committee, SUTD (July 2014-2016)
- ◇ Member - Promotion and Tenure Committee, SUTD (2015-2016)
- ◇ Member - Tenured Faculty and Advisory Committee, SUTD (2015-2016, 2018-present)
- ◇ Member - Selection panel for SUTD Student Achievement awards (2014-2016)
- ◇ Member - Advisory Committee on Library and Information Services, SUTD, (July 2015-present)
- ◇ Member - SUTD-ZJU Internal Research Review Panel (2018-23)

PROFESSIONAL
ACTIVITIES

- ◇ Associate Editor - Mathematical Programming published by Mathematical Optimization Society, (2022-present)
- ◇ Associate Editor - Operations Research published by INFORMS, Area: Operations and Supply Chains (2012-2017, 2018-present)
- ◇ Associate Editor - Management Science published by INFORMS, Area: Optimization, Big Data Analytics (2018-present)
- ◇ Associate Editor - Manufacturing and Service Operations Management published by INFORMS, Area: Analytics in Operations (2021-present)
- ◇ Associate Editor - Sadhana published by the Indian Academy of Science (2013-16)
- ◇ Member - Ngee Ann Polytechnic Mathematics Education Advisory Committee (2016-18)
- ◇ Organizing Committee Member -
Workshop on Distributionally Robust Optimization, Banff International Research Station (2018),
The Tenth POMS-HK International Conference 2019,
The Ninth POMS-HK International Conference 2018,
The Eighth POMS-HK International Conference 2017
- ◇ Cluster Chair for Robust Optimization - INFORMS International 2016
- ◇ Program Committee Member -
2019 MSOM International Conference (2019),
3rd Asia-Pacific Conference on Complex Systems Design & Management (2018)
Transportation applications of equilibrium, incentives and game theory, AAMAS Workshop (2016)
- ◇ Editorial Advisory Board for Algorithmic Operations Research (2005-12)

- ◇ Part of judging panel, Best Student Paper Competition, The College of Supply Chain Management, Production and Operations Management Society (2018)
- ◇ Reviewer - Grant for Swiss National Science Foundation (2014), Canada Research Chairs (2018)
- ◇ Reviewer - Operations Research, Management Science, Mathematics of Operations Research, Mathematical Programming, SIAM Journal on Optimization, SIAM Journal on Discrete Mathematics, Mathematical Finance, Quantitative Finance, European Journal of Operational Research, Computational Optimization and Applications, Integer Programming and Combinatorial Optimization Conference, IEEE journals, Naval Research Logistics, International Journal for Numerical Methods in Engineering, ACM Transactions on Database Systems
- ◇ Professional society membership - INFORMS (Optimization Society, Analytics Section, Financial Services Section), SIAM (SIAG on Optimization) (2013-present)
- ◇ Program Committee Member - Eight International Conference on Algorithmic Aspects of Information and Management (AAIM) held at Peking University, Beijing, China (2012)
- ◇ Advisory Group Member - APEC Project DARE (Data Analytics Raising Employment) (2017)
- ◇ Member - Evaluation Panel, CAAS (Civil Aviation Authority of Singapore) Aviation Challenge 2 (2015)
- ◇ Consultant for Singapore Pools in analyzing lottery games (2005-present)
- ◇ Chairman of the Academic Committee for the inaugural Singapore International Mathematics Challenge held at the NUS High School of Mathematics and Science (2008)
- ◇ General talks:
 - ‘Predictive and Prescriptive Analytics’, Workshop for Keppel engineers (2017)
 - ESD Pillar Talk, SUTD Open House (March 2015, 2016)
 - SUTD Admissions and Career Talk (Dec 2014, Jan 2015, Dec 2015, Jan 2016)
 - ‘Optimization under Uncertainty’, Industry talk, 24[7], Bengaluru, India (2012)
 - ‘Operations Research and its Impact’, Science Faculty Open House, NUS (2009)
 - ‘Forum Topic: SMA - Educating Future Leaders’, Panelist member, Singapore-MIT Alliance 10th Anniversary Symposium (2009)
 - ‘Mathematics of Lottery and Gambling’, Gifted Education Program Mathematics Enrichment Workshop for secondary school students (2009)
 - Conducted a Micro-Teaching session for teaching assistants from the Science Faculty, CDTL Teaching Assistant Programme, NUS (2009)
 - ‘Modeling Sudoku with Integer Programs’, Science Focus Enrichment Program for junior college students (2008), NUS-Peking University Program (2006-07)
 - ‘Introduction to Operations Research’, Singapore Mathematical Society-Royal Institution Masterclasses (2007), Gifted Education Program Mathematics Enrichment Workshop for secondary school students (2008)
- ◇ Conducted IEEE-NUS MATLAB course, NUS (2005)
- ◇ Semi-finalist in the 5th Start-Up@Singapore Business Plan Competition (2004)

PRESENTATIONS
AND
SESSIONS
ORGANIZED

- ◇ Invited Speaker in The 2nd Greater Bay Area Workshop on Computational Optimization, Hong Kong/hybrid mode (2021)
Title: ‘Robustness to Dependency in Influence Maximization’.
- ◇ Invited Keynote Speaker in Robust Optimization stream, OR Society 63rd Annual Conference, United Kingdom (2021)
Title: ‘Correlation Robust Influence Maximization’.
- ◇ Invited Speaker in Recent advances in Optimization under Uncertainty symposium, SIAM Conference on Optimization (2021)

- Title: ‘Correlation Robust Influence Maximization’. Workshop on Models and Algorithms for Sequential Decision Problems under Uncertainty, Banff International Research Station Workshop, Canada (2019)
- Title: “Exploiting Partial Correlations in Distributionally Robust Optimization’.
- ◇ Invited Speaker in Workshop on Models and Algorithms for Sequential Decision Problems under Uncertainty, Banff International Research Station Workshop, Canada (2019)
Title: “Exploiting Partial Correlations in Distributionally Robust Optimization’.
 - ◇ Invited Speaker in Supply Chain Performance session, POMS-HK, Hong Kong, (2019)
Title: ‘Distributionally Robust Linear and Discrete Optimization with Marginals’.
 - ◇ Mathematics Colloquium Talk, 9th Singapore Mathematical Society Symposium, National University of Singapore (2018)
Title: ‘On the Interplay of Optimization and Probability in Decision-Making’.
 - ◇ Session organizer and speaker at the 23rd International Symposium on Mathematical Programming, Bordeaux, France (2018)
Title: ‘Distributionally Robust Markovian Traffic Equilibrium’.
 - ◇ Co-organizer and Speaker, Banff International Research Station Workshop on Distributionally Robust Optimization, Canada (2018)
Title: ‘On the Heavy-Tail Behavior of the Distributionally Robust Newsvendor Model with Moments’.
 - ◇ Speaker, POMS-HK, Hong Kong, (2018)
Title: ‘On the Heavy-Tail Behavior of the Distributionally Robust Newsvendor Model with Moments’.
 - ◇ Session organizer on Distributional Robust Optimization with Marginals and invited speaker in Multi-Item and Multi-Location Revenue Management Models session, INFORMS Houston USA (2017)
 - ◇ Invited Speaker in 21st Conference of the International Federation of Operational Research Societies, Quebec, Canada (2017)
Title: ‘On Reduced Semidefinite Programs for Second Order Moment Bounds with Applications’.
 - ◇ Invited Speaker in Supply Chain Performance session, POMS-HK, Hong Kong, (2017)
Title: ‘Asymmetry and Ambiguity in Newsvendor Models’.
 - ◇ Invited Speaker in Distributionally Robust Optimization session, INFORMS Nashville USA (2016)
Title: ‘Bounds on Random Binary Quadratic Programs’.
 - ◇ Session organizer in On the Interplay of Choice, Robustness and Optimization session, ICCOPT, Tokyo Japan (2016)
 - ◇ Speaker, ICCOPT, Tokyo Japan (2016)
Title: ‘On Reduced Semidefinite Programs for Second Order Moment Bounds with Applications’.
 - ◇ Tutorial speaker in session on Big Data and Data Analytics, 2nd Asia-Pacific Conference on Complex Systems Design & Management, Singapore (2016)
Title: ‘Robustness in Decision-Making in Uncertainty’.
 - ◇ Session organizer and speaker in Distributionally Robust Optimization session, INFORMS Philadelphia USA (2015)
Title: ‘SDP Reformulation of CP Programs: Best-worst Choice and Range Estimation Applications’.
 - ◇ Invited Speaker in Semidefinite and Copositive Approaches for Robustness session, ISMP, Pittsburgh USA (2015)
Title: ‘Distributionally Robust Project Crashing with Moments’.

- ◇ Invited semi-plenary, 17th British-French-German Conference on Optimization, London, United Kingdom (2015)
Title: ‘Choice Models under Distributional Uncertainty with Applications in Transportation’.
- ◇ Invited Speaker in the Optimization in Choice and Pricing Models in Revenue Management session, INFORMS, San Francisco USA (2014)
Title: ‘The Cross-Moment Choice Model’.
- ◇ Co-chair of the one-day Workshop on Emerging Topics in Conic and Discrete Optimization, SUTD (2014)
Jointly organized by ESD (SUTD) and Department of Decision Sciences (NUS)
- ◇ Speaker in POMS International, Singapore (2014)
Title: ‘Beyond Normality: A Distributionally Robust Stochastic User Equilibrium Model’.
- ◇ Invited Speaker in the Mostly OM workshop, Beijing, China (2014)
Title: ‘On Theoretical and Empirical Aspects of Marginal Distribution Choice Models’.
- ◇ Discussant in the 4th Operations Management Summer Camp, Singapore Management University, Singapore (2014)
- ◇ Session chair and speaker in the Optimization in Finance cluster, INFORMS, Minnesota, USA (2013)
Title of session: ‘Portfolio Selection and Measurement of Risk’.
- ◇ Invited Tutorial, European Control Conference, Zurich, Switzerland (2013)
Title: ‘Distributionally Robust Optimization’. Jointly conducted with Daniel Kuhn, Imperial College.
- ◇ Session chair and speaker in the 26th European Conference on Operational Research, Rome, Italy (2013)
Title: ‘Coprimitive Optimization: Theory and Applications’.
- ◇ Invited Speaker in Workshop on Optimization under Uncertainty organized by the Institute of Mathematical Sciences, NUS - Optimization: Computation, Theory and Modeling Program, Singapore (2012)
Title: ‘Distributionally Robust Optimization: Univariate and Multivariate Marginal Bounds’.
- ◇ Session organizer in the 21st International Symposium on Mathematical Programming, Berlin, Germany (2012)
Title of session: ‘Regret with Robustness: Models, Algorithms and Applications’.
- ◇ Invited minisymposium session organizer in the SIAM Conference on Optimization, Darmstadt, Germany (2011)
Title of session: ‘Stochastic Optimization with Partial Distribution Information’
- ◇ Invited speaker in Workshop on Robust Optimization, Institute of Pure and Applied Mathematics (IPAM), UCLA, USA (2010)
Title: ‘Semidefinite programming models for minimax stochastic programs’.
- ◇ Invited session organizer in 20th International Symposium on Mathematical Programming, Chicago, USA (2009)
Title of session: ‘Applications of Conic Programming in Random Linear and Integer Programs’
- ◇ Invited talk in session on Minimax Stochastic Optimization with Applications, International Federations of Operational Research Societies, South Africa (2008)
- ◇ Invited talk in Operations Research and Management Science Symposium, NUS Business School, Singapore (2008)
- ◇ Invited talk in session on Financial Optimization, International Conference on Continuous Optimization ICCOPT II, McMaster University, Canada (2007)
- ◇ Invited talk in session on Customer Behavior in Operations Management, INFORMS, Pittsburgh, USA (2006)

- ◇ Invited talk in High Performance Computation for Engineered Systems cluster, Singapore-MIT Alliance Symposium, Singapore (2006)
 - ◇ Invited talk in session on Applications of Conic Programming in Finance, Workshop on Optimization in Finance, Portugal (2005)
 - ◇ Invited talk in session on Probabilistic Methods in Finance and Insurance, INFORMS, Atlanta, USA (2003)
- DOCTORAL THESIS
- ◇ Yanqiu Rau, SUTD-NUS Joint PhD - cosupervised with Karthyek Murthy and Li Xiaobo
Expected to graduate in 2024-2025
 - ◇ Arjun Ramachandra, SUTD-NUS Joint PhD (2021) - cosupervised with Melvyn Sim and Napat Rujeerapaiboon
Title: Towards Tightness with Pairwise Independence, Extremal Dependence and Robust Satisficing Using Linear and Conic Duality
Started as a Research Fellow at SUTD after PhD
 - ◇ Shi Dongjian, Department of Mathematics, NUS (2013) - cosupervised with Toh Kim Chuan
Title: Regret Models and Preprocessing Techniques for Combinatorial Optimization under Uncertainty
Started as an Equity Quant at UBS after PhD
 - ◇ Jitendra Dattatray Bhanap, Department of Mathematics, NUS (2010) - cosupervised with Belal Baaquie
Title: Analysis of Equity Default Swaps Pricing
- MASTERS THESIS
- ◇ Yuwen Zhang, Masters in Manufacturing, MIT-SUTD Dual Masters Program, 2016-18
Thesis: Shop Floor Optimization in a Semiconductor Manufacturing Facility through Job Scheduling and Machine Automation
 - ◇ Siddarth Udayshankar, Masters in Manufacturing, MIT-SUTD Dual Masters Program, 2014-16
Thesis: Feasibility Study on the Application of Run-to-Run Control at a Semiconductor Final Test Facility
 - ◇ Ni Suteng, Masters, Civil and Environmental Engineering, Master of Engineering Program, MIT-SUTD Dual Masters Program, 2012-14
Thesis: An Empirical Study of Manufacturing Complexity Costs at an Integrated Circuits (IC) Final Test Facility
 - ◇ Li Xiaobo, Masters, Department of Management Sciences, City University of Hong Kong, 2010-12
Thesis: Convex Bounds for Dependent Risks with Applications to Robust Optimization
Starting as an Assistant Professor at Department of Industrial Systems Engineering & Management, National University of Singapore
 - ◇ Joline Uichanco, SM, Singapore-MIT Alliance, 2007-08
Thesis: Ambiguous Risk Measures and Piecewise Linear Utility Models in Portfolio Management
Currently an Assistant Professor at Ross School of Business, University of Michigan
 - ◇ Chui Tian Wei, Masters, Department of Mathematics, 2007-08
Thesis: Calibrating Auction Data with Discrete Choice Models
 - ◇ Nandini Sridhar, Masters, Department of Mathematics, 2006-07
Thesis: Auction Theory
 - ◇ Jayashri Desai, Masters, Department of Mathematics, 2006-07
Thesis: Sharp Upper Bounds for the Prices of Basket Option
 - ◇ Su Hua and Zhang Lei, SM, Singapore-MIT Alliance, 2006-07
Thesis: Analyzing Quay Cranes Job Sequence using Stochastic Project Scheduling Technique
- UNDERGRADUATE THESIS
- ◇ Zheng Zhichao: ‘Mixed Zero-One Linear Programs under Objective Uncertainty: A Cross Moment Model’ (2008-09)
Currently an Assistant Professor at Lee Kong Chian School of Business, Singapore Management University

- ◇ Zhao Haobo: ‘Optimization and Simulation Models for Stochastic Project Networks’ (2008-09)
- ◇ Yu Qian: ‘An Analysis of the Steady-State Model in Inventory Problems’ (2007-08)
- ◇ Ong Xiu Hui: ‘Investigation of Randomized Asset Allocation Strategies’ (2007-08)
- ◇ Zhou Linyi: ‘New Bounds for Univariate Moment Problems’ (2006-07)
- ◇ Ong Bi Hui: ‘A Single Period Robust Utility Maximization Model’ (2006-07)
- ◇ Chee Swee Wei: ‘Discrete Choice Models with Ranked Data’ (2006-07)
- ◇ Goh Yang Jun Jasper: ‘Mean-Variance-Skewness Portfolio Optimization’ (2006-07)
- ◇ Neo Siok Hoong: ‘Investigating the Implication of Oil Price Volatilities’ (2005-06)
- ◇ Lay Siew Ling: ‘Portfolio Optimization under Different Risk Measures’ (2005-06)
- ◇ Tan Yuh Peng Kelvin: ‘A Pricing Model for False Alarms’ (2005-06)
- ◇ Kam Wei Loon: ‘A Study of Risk in Dynamic Programming’ (2005-06)

RESEARCH
FELLOWS
AND
RESEARCH
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- ◇ Ugur Arikian, PhD from Middle East Technical University. Research fellow at SUTD (2014-2018)
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After postdoc, continued as postdoc at University of Michigan
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- ◇ Aishwarya Krishna, PhD student from IIM Bengaluru. Research assistant at SUTD (Mid 2014-Jan 2015)
- ◇ Lim Chee Chin, Undergraduate from SUTD. Research assistant at SUTD (2018-2020)

OTHER
INTERESTS

- ◇ Sports and games