Curriculum Vita

Dimitris Bertsimas

Sloan School of Management, MIT

I. Education

- National Technical University of Athens (N.T.U.A.), Greece	Diploma in Electrical Engineering	1985
- Massachusetts Institute of Technology	M.S. in Operations Research	1987
- Massachusetts Institute of Technology	Ph.D. in Operations Research and Applied Mathematics	1988

II. Academic appointments

Vice Provost of Open Learning, MIT	2024-present
Associate Dean of Online Education and Artificial Intelligence, Sloan School, MIT	2019-present
Co-director, J-clinic, MIT	2020-2025
Co-director, Operations Research Center, MIT	2006-2019
Inaugural Faculty Director of the Master of Business Analytics, MIT	2013-present
Boeing Professor of Operations Research, Sloan School, MIT	1997-present
Miller Visiting Professor, University of California, Berkeley	2002
Visiting Professor, Stanford University	1996
Professor of Operations Research, Sloan School, MIT	1995-1997
E. Pennell Brooks Professor of Operations Research, Sloan School, MIT	1994-1996
Associate Professor of Operations Research, Sloan School, MIT	1992-1993
Assistant Professor of Management Science, Sloan School of Management, MIT	1988-1992

III. Principal Research Interests: Optimization, Machine Learning, Health Care and Medicine, Transportation, Applied Probability, Finance.

IV. Awards

- Honorary Doctorate, National Technical University of Athens, Greece 2025
- James R. Killian, Jr. Faculty Achievement Award, MIT 2025
- Harold Kuhn best paper award in Naval Research Logistics 2024
- Honorary Doctorate, Demokritus University of Thrace, Greece 2024
- Finalist in Edelman competition, INFORMS
  for work with Janssen 2022
- Honorary Doctorate, University of Athens, Greece 2021
- The Frederick W. Lanchester Prize, INFORMS 2021
- The Innovative Applications in Analytics Award, INFORMS 2021
- Finalist in Edelman competition, INFORMS
  for work with OCP 2021
- The William Pierskalla best paper award in health care 2020
- The John von Neumann Theory Prize, INFORMS 2019
- The President's award, INFORMS 2019
- Finalist in Edelman competition, INFORMS
  for work with Boston Public Schools 2019
- Outstanding teaching award, MIT Sloan 2017
- Distinguished IFORS Lecturer 2016
- The Harold Larnder Prize 2016
- The Military Operations Research Best Paper Prize 2015
- The Jamieson prize, MIT 2015
- The Philip Morse lectureship award, INFORMS 2013
- The William Pierskalla best paper award in health care 2013
- Best paper award in Transportation Science 2013

- Farkas prize, INFORMS Optimization Society	2008
- INFORMS fellow	2007
- Member of the National Academy of Engineering	2005
- OR Gold medal for Greek Scientists, Greek OR society	2004
- Miller fellowship, University of California, Berkeley	2002
- Samuel M. Seegal Prize awarded annually to an MIT faculty who excels in inspiring students to pursue and achieve excellence	1999
- Bodossaki prize awarded every two years to most distinguished Greek scientists under 40	1998
- Finalist in Edelman competition of INFORMS for work with GMO	1998
- Erlang prize, INFORMS	1996
- SIAM Optimization Prize	1996
- Presidential Young Investigator award , NSF	1991-1996
- First prize in the George E. Nicholson, INFORMS	1989
- First prize in the dissertation competition in Transportation, INFORMS	1989

V. Professional Activities

1. Member of the board of the Bodosakis Foundation, 2021-present.
2. Member of the board for mathematical sciences of the National Research Council, 2001-2004.
3. Member of the committee to elect new members for Section 8 (Industrial Engineeering), National Academy of Engineering, 2008-2011.
4. Member of the von Neuman award committee of INFORMS, 2010-2012, (chairman in 2012).
5. Member of the board for the Institute of Mathematics and its Applications (IMA), 2001-2004.
6. Member of the committee to select the EURO Gold award, 2005.

7. Chairman of the Lanchester prize committee of INFORMS, 2000-2001.

8. External reviewer for the Risk Lab, ETH, Switzerland, 2003, the Department of IE/MS, Northwestern University, 2004, New York University Stern School of Business in 2012.

9. External Advisory Board, Systems Engineering Division at Boston University, 2010.

10. Chairman of the Edgerton prize committee of MIT, 2006-2007.

11. Chairman of the board of directors, National University of Athens, Greece, 2013-2016.

12. Member of Institute for Operations Research and Management Sciences (INFORMS), Society of Industrial and Applied Mathematics (SIAM), Mathematical Optimization Society, Institute of Mathematical Statistics.

VI. Industrial Experience

1. Consultant for over one hundred leading companies, 1991-present.

2. Founder of Dynamic Ideas, LLC, 1998-present. Assets of the company sold to American Express in 2002. It operates as a consulting and publishing company.

3. Member of the board of D2-Hawkeye, 2003-2009. Company sold to Verisk Health in 2009.

4. Co-founder of Savvi Financial, LLC, 2011-present.

5. Co-founder of Benefits Science, LLC, 2011-2023. Company sold to Multiplan Corp. in 2023.

6. Co-founder of ReClaim Health, LLC, 2016-present.

7. Co-founder of Interpretable AI, LLC, 2018-present.

8. Co-Founder of Ground Truth Analytics, LLC, 2022-present.

9. Founder of Holistic Hospital Optimization, LLC, 2022-present.

VII. Journal Service

1. Editor in Chief of INFORMS Journal of Optimization, 2017-2024.

2. Area Editor for optimization in Management Science, 2009-2015.

3. Area Editor for Financial Engineering, Operations Research, 2003-2008.

4. Former Associate editor for many journals.

VIII. Thesis Supervision

Completed PhD students

1. Michel Goemans, Probabilistic and worst case analysis of LP relaxations for a class of connectivity problems, 1990 (Tucker prize of Mathematical Programming Society, 1991, 2nd prize in Nicholson competition of INFORMS, 1991).

2. Daisuke Nakazato, Transient distributional results in queues with applications to queueing networks, 1990.

3. Garrett van Ryzin, Dynamic vehicle routing problems, 1991 (2nd prize in Transportation dissertation competition of INFORMS, 1992, honorable mention in Nicholson competition of INFORMS, 1991).

4. Peter Vranas, Ground holding strategies for a network of airports in air traffic control, 1992 (2nd prize in Transportation dissertation competition, 1992).

5. Michael Peterson, Transient congestion phenomena in air transportation, 1992.

6. Carolyn Haibt-Norton, Topics in discrete optimization, 1993.

7. Haiping Xu, Optimal policies for stochastic and dynamic vehicle routing problems, 1994.

8. Zhihang Chi, Dynamic and network effects in airline yield management, 1994.

9. Georgia Mourtzinou, An axiomatic approach to queueing systems, 1995 (2nd prize in Nicholson competition of INFORMS, 1996).

10. Jose Niño-Mora, Optimal resource allocation in a dynamic and stochastic environment: a mathematical programming approach, 1995.

11. Michael Ricard, Optimization of queueing networks: a linear control approach, 1995.

12. Joe Millner, A market approach to airtraffic control, 1995.

13. Andrew Luo, Continuous linear programming: Theory, algorithms and applications, 1995.

14. Chung-Piaw Teo, Constructing approximation algorithms via linear programming relaxations: primal dual and randomized rounding techniques, 1996 (honorable mention in Nicholson competition of INFORMS, 1996).

15. Ioannis Paschalidis, Large deviations in high speed communication networks, 1996 (2nd prize in Nicholson competition of INFORMS, 1997).

16. Sarah Stock, Stochastic and dynamic models for airtraffic flow management, 1997 (1st prize in Transportation Dissertation of INFORMS, 1997, 2nd prize in Dantzig award, 1997).

17. David Gamarnik, Stability and performance of multiclass queueing networks, 1997.

18. Thalia Chryssikou, Multiperiod portfolio optimization in the presence of transaction costs, 1998.

19. Ioana Popescu, Applications of optimization in probability, finance and revenue management, 1999, (honorable mention in Nicholson competition of INFORMS, 1999).

20. Jay Sethuraman, A stochastic control approach for multiclass queueing networks, 1999 (honorable mention in Nicholson competition of INFORMS, 2000).

21. Leon Hsu, The bottleneck phenomenon in transportation systems, 1999.

22. Ramazan Demir, Approximate dynamic programming for integer programming problems, 2000.

23. Dessi Pachamanova, A robust optimization approach to finance, 2002.

24. Sanne de Boer, Pricing and revenue management in a netwrok environment, 2003 (2nd prize in Nicholson competition of INFORMS, 2003).

25. Adam Mersereau, Adaptive and dynamic models in marketing, 2003.

26. Romy Shioda, An Integer programming approach to data mining, 2003.

27. Natasha Busheva, Finance without price dynamics, 2003.

28. Jeff Hawkins, A Lagrangean decomposition method for dynamci optimization and its applications, 2003.

29. Karthik Natarajan, Probabilistic Combinatorial Optimization: Moments, Semidefinite Programming and Asymptotic Bounds, (Honorable mention in Nicholson competition of INFORMS, 2003), Singapore-MIT-Alliance, 2004.

30. Melvyn Sim, Robust optimization, 2004 (2nd prize in Nicholson competition of INFORMS, 2002 and 2nd prize in Nicholson competition of INFORMS, 2004), 2004.

31. Aurelie Thiele, A robust optimization approach to supply chains and revenue management, (first prize in Nicholson competition of INFORMS, 2003), 2004.

32. Michele Aghassi, Robust Optimization, game theory and variational inequalities, 2005.

33. David Brown, Risk and robust optimization, 2006 (2nd prize in Nicholson competition of INFORMS, 2005).

34. Constantine Caramanis, Adaptive optimization, 2006.

35. Kwong Meng Teo, Nonconvex robust optimization, 2007.

36. David Czerwinski, Assessing quality of health care, 2008.

37. Premal Shah, Analysis of employee stock options and guaranteed withdrawal benets for life, 2008 (first prize in student paper competition in Financial Services Section of INFORMS, 2007).

38. Margret Bjarnadottir, A data driven approach to health care: applications using claims data, 2008.

39. Dmitriy Katz-Rogozhnikov, Algorithmic issues in queueing systems and combinatorial counting problems, 2008.

40. Apostolos Fertis, A robust optimization appraoch to stastical estimation problems, 2009.

41. Xuan Vinh Doan, Optimization under moment, robust, and data-driven models of uncertainty, 2009.

42. Dan Iancu, Multi-stage adjustable robust optimization, with applications in inventory and revenue management, 2010 (first prize in student paper competition in Optimization Section of INFORMS, 2009).

43. Alex Rikun, Applications of robust optimization to queueing and inventory systems, 2011.

44. Nikos Trichakis, Fairness in operations: from theory to practice, 2011 (winner of the second prize of George Dantzig Best thesis award, 2011).

45. Xu Sun, Advances in power systems: robustness, adaptability and fairness, 2011.

46. Adrian Becker, Decomposition methods for large scale stochastic and robust optimization problems, 2011.

47. Shubham Gupta, A tractable optimization framework for air traffic flow management addressing fairness, collaboration and stochasticity. 2012.

48. Allison Chang, Integer optimization methods for machine learning, 2012.

49. Michael Frankovitch, Air traffic flow management at airports: A unified optimization approach, 2012.

50. Chaitanya Bandi, Tractable stochastic analysis in high dimensions: a robust optimization approach, 2013 (best paper award among ORC students in 2012, finalist in the Nicholson competition in 2012).

51. Allison O'Hair, Personalized diabetes management, 2013 (winner of the William Pierskalla award in 2013 for best paper in Health care).

52. Matthew Fontana, Optimal routes for electric vehicles facing uncertainty, congestion and energy constraints, 2013.

53. Vishal Gupta, Data-driven models for uncertainty and behavior (best paper award among ORC students in 2013, finalist in the Nicholson competition in 2013), 2014.

54. Nathan Kallus, From data to decisions through new interfaces between optimization and statistics (best paper award among ORC students in 2013, finalist in the Nicholson competition in 2013), 2015.

55. Angie King, Regression under a modern optimization lens, 2015.

56. John Silberholz, Analytics for Improved Cancer Screening and Treatment, (winner of the William Pierskalla award in 2013 for best paper in Health care), 2015.

57. Nataly Youssef, Stochastic Analysis via Robust Optimization, (best paper award among ORC students in 2012, finalist in the Nicholson competition in 2012), 2015.

58. Velibor Misic, Data, Models and Decisions in Large-Scale Stochastic Optimization Problems, 2016.

59. Iain Dunning, Advances in Robust and Adaptive Optimization: Algorithms, Software, and Insights, 2016. (best paper award among ORC students in 2016).

60. Nikita Korolko, A Robust Optimization Approach to Online Problems, 2017.

61. Alex Weinstein, From Data to Decisions in Healthcare: An Optimization Perspective, 2017.

62. Jerry Kung, An Analytics Approach to Problems in Health Care, 2017.

63. Frans de Ruiter, Primal and dual approaches to adjustable robust optimization, 2018 (1st prize in Optimization for 2017 best student paper).

64. Jack Dunn, Optimal Trees for Prediction and Prescription, 2018 (best paper award among ORC students in 2016).

65. Martin Copenhaver, Sparsity and robustness in modern statistical estimation, 2018 (best paper award among ORC students in 2015).

66. Daisy Ying Zhuo, New Algorithms in Machine Learning with Applications in Personalized Medicine, 2018.

67. Joel Tay, Integrated Robust and Adaptive Methods in the Heating Oil Industry, 2018.

68. Sebastien Martin, The Edge of Large-Scale Optimization in Transportation and Machine Learning, 2019 (best paper award among ORC students in 2018, George Dantzig dissertation award 2019, Transportation Thesis Prize, 2019).

69. Yee Sian Ng, Advances in Data-Driven Models for Transportation, 2019.

70. Colin Pawlowski, Machine Learning for Problems with Missing and Uncertain Data with Applications to Personalized Medicine, 2019.

71. Chris McCord, Data-Driven Dynamic Optimization with Auxiliary Covariates, 2019.

72. Nishanth Mundru, Predictive and Prescriptive Methods in Operations Research and Machine Learning: An Optimization Approach, 2019.

73. Julia Yan, From Data to Decisions in Urban Transit and Logistics, 2020.

74. Brad Sturt, Dynamic Optimization in the Age of Big Data, 2020 (2nd prize in Nicholson competition of INFORMS, 2017, best paper award among ORC students in 2019).

75. Jean Pauphilet, Algorithmic advancements in discrete optimization Applications to machine learning and healthcare operations, 2020 (1st Prize in Nicholson competition of INFORMS, 2020, best paper award among ORC students in 2020, 1st prize in student paper for INFORMS Computer Science Section, 2019, Honorable mention George Dantzig dissertation award 2020).

76. Yuchen Wang, Interpretable Machine Learning Methods with Applications to Health Care, 2020.

77. Agni Orfanoudaki, Novel Machine Learning Algorithms for Personalized Medicine and Insurance, 2021.

78. Arthur Delarue, Optimizing School Operations, 2021 (best paper award among ORC students in 2018).

79. Nihal Koduri, Essays on Decision Making Under Uncertainty, 2021.

80. Hari Bandi, Improving Efficiency and Fairness in Machine Learning: a Discrete Optimization Approach, 2021.

81. Matthew Sobiesk, Machine Learning Algorithms and Applications in Health Care, 2021.

82. Michael Li, Algorithms for Large-scale Data Analytics and Applications to the COVID-19 Pandemic, 2022 (Finalist Edelman competition, 2022).

83. Ivan Paskov, Stable Machine Learning, 2022.

84. Driss Lahlou Kitane, Sparsity and Machine Learning, Theory and Applications, 2022.

85. Berk Ozturk, Global and Robust Optimization for Engineering Design, 2022.

86. Ryan Cory-Wright, Integer and Matrix Optimization: A Nonlinear Approach, 2022 (1st Prize in Nicholson competition of INFORMS, 2020, best paper award among ORC students in 2020, 1st prize in student paper for INFORMS Computer Science Section, 2019).

87. Holy Wilberg, Data-driven Healthcare via Constraint Learning and Analytics, 2022.

88. Ted Papalexopoulos, Multi-Objective Optimization for Public Policy, 2022.

89. Vassilis Digalakis, Analytics under Variability, Volume, and Velocity with Applications to Sustainability and Healthcare, 2023.

90. Liangyuan Na, Optimal Decision Making for Healthcare Operations: Models and Implementation, 2023.

91. Leonard Boussioux, Multimodality, Models, Algorithms, and Applications, 2023.

92. Suleeporn Sujichantararat, A Simulated Annealing Approach to Designing Optimal Decision Trees for Classification, Prescriptive, and Survival Analysis, 2023.

93. Kimberly Villalobos Carballo, Integrating Optimization and Modern Machine Learning: Theory, Computation, and Applications, 2024.

94. Cynthia Zeng, Multimodal Machine Learning for Climate Adaptation, 2024.

95. Danique de Moor, A novel approach for a broad class of non-convex optimization problems, 2024.

96. Adam Cheol Woo Kim, Predictive and Prescriptive Trees for Optimization and Control Problems, 2024.

97. Nicholas Johnson, Advances in Sparse and Low Rank Matrix Optimization for Machine Learning Applications, 2024.

98. Wes Gurnee, Towards an Artificial Neuroscience: Analytics for Language Model Interpretability, 2024.

99. Yu Ma, Artificial Intelligence for System Medicine: Methods and Applications, 2025.

100. Alex Paskov, Large-Scale Optimization using Reinforcement Learning, Dynamic Programming, and Column Generation, 2025.

101. Angelos Koulouras, A Unified Adaptive Robust Optimization Approach to Electricity Markets Under Uncertainty, 2025.

102. Zhen Lin, Progress On the Interplay of Machine Learning and Optimization, 2025.

103. Benjamin Boucher, A Novel Machine Learning Approach to Robust Optimization: Theory and Applications, 2025.

104. Baptiste Rossi, Learning Nonlinear Dynamics: Methods and Applications, 2025.

105. Thodoris Koukouvinos, Advances in Nonconvex and Robust Optimization, 2025.

106. Pericles Petridis, Bridging the Gap: From Artificial Intelligence and Optimization to Action, 2025.

Current PhD students

107. George Margaritis, expected completion 2026.

108. Eli Pivo, expected completion 2026.

109. Matthew Peroni, expected completion 2026.

110. Lisa Everest, expected completion 2027.

111. Vassilina Stoumpou, expected completion 2027.

112. Jiayi Gu, expected completion 2027.

113. Maura Suzanne Hegarty, expected completion 2028.

114. Yubing Cui, expected completion 2028.

115. Catherine Ning, expected completion 2028.

116. Karl Zhu, expected completion 2028.

117. Cindy Wang, expected completion 2028.

118. Romain Puech, expected completion 2029.

119. Carol Gu, expected completion 2029.

120. Dewang Agarwal, expected completion 2029.

121. Seehanah Tang, expected completion 2030.

122. Julia Kim, expected completion 2030.

123. Rohan Kumar, expected completion 2030.

124. Lara Pontes, expected completion 2030.

125. Josephine Situ, expected completion 2030.

Completed Postdoctoral students

1. Eugene Perevalov, 1999-2001.

2. Omid Nohadani, 2006-2009.

3. Vineet Goyal, 2008-2010.

4. Christopher Maes, 2009-2011,

5. Ebrahim Nasrabadi, 2010-2013.

6. Rahul Mazumder, 2012-2013.

7. Angelos Georghiou, 2012-2013.

8. Phebe Vayanos, 2012-2015.

9. Hoda Bidkhori, 2012-2015.

10. Nathan Kallus, 2015-2016.

11. John Silberholrz, 2015-2017.

12. Bart van Parys, 2016-2018.

13. Shimrit Shtern, 2015-2018.

14. Bartolomeo Stellato, 2018-2020.

15. Michael Li, 2022-2023.

16. Danique De Moor, 2024-2026.

Completed Master Students

1. Phillip Chervi, A computational approach to probabilistic routing problems, 1989.

2. Meng-Huai Chen, Optimal cash allocation in bank branches, 1991.

3. Michael Ricard, Algorithms for the 0-1 integer programming problem, 1991.

4. Ioannis Paschalidis, Bounds for multiclass queueing networks, 1992.

5. Angela Chiu, Stochastic inventory and distribution problems, 1993.

6. Elaine Chew, Multiperiod portfolio optimization: Feynmann diagrams and approximate dynamic programming, 1998.

7. Ed Wike, Supply chain management: an approximate dynamic programming approach, 1998.

8. Constantine Tsiligakis, Portfolio construction through mixed integer programming, 1999.

9. Mark Coumeri, Pricing in a competitive environment: a learning approach, 2000.

10. Zhang Yi, A discrete optimization approach to classification, Singapore-MIT-Alliance, 2001.

11. Constantine Caramanis, Bounds on linear partial differential equations via semidefinite optimization, 2001.

12. Cheong Foong Soon, Hedging Strategy and Effect of Transaction Costs for American Options in an Incomplete Market, Singapore-MIT-Alliance, 2002.

13. Premal Shah, Optimal bounds for American options, 2006.

14. Su Hua, A robust optimization approach to optimization of queueing networks, 2006.

15. Yun Lu, A robust optimization approach to network equilibrium, 2007.

16. Yanbo Wang, Robust optimization applications, 2008.

17. Clay Noyes, Optimizing the operations of the emergency department at the Beth Israel Hospital via simulation, 2008.

18. Si Chen, Robust option pricing - an epsilon arbitrage approach, 2009.

19. Kimberly Shenk, Patterns of heart attacks, 2010.

20. Jingting Zhou, Computational experiments for local search algorithms for binary and mixed integer optimization, 2010.

21. Van Vinh Nguyen, Fairness and optimality in trading, 2010.

22. Thai Dung Nguyen, Application of robust and inverse optimization in transportation, 2010.

23. Liwei He, Polynomial policies in supply chain networks, 2010.

24. Emily Frost, Dynamic planning for underwater unmanned vehicles, 2013.

25. Stephen Relyea, An Analytics Approach to Designing Clinical Trials for Cancer", 2013 (winner of the William Pierskalla award in 2013 for best paper in Health care).

26. David Culver, Addressing the Fog of War in Reconnaissance Operations: A Robust Optimization Approach, 2013.

27. Cristina Epstein, An Analytics Approach to Hypertension Treatment, 2014.

28. Jonathan Paynter, Optimized Border Interdiction, 2014.

29. Nicholas Jerningan, Robust Multi-modal, Multi-period, Multi-commodity Transportation: Models and Algorithms, 2014.

30. Kevin Rossillion, Optimized Air Asset Scheduling Within a Joint Air Operations Center, 2015.

31. Zachary Sanders, Multi-target tracking via mixed integer optimization, 2016.

32. Samer Haidar, Supply chain network strategy for consumer medical device introduction, 2016.

33. Galit Lukin, Prescriptive Methods for Adaptive Learning, 2020.

34. Justin Graham, School Choice: A Discrete Optimization Approach, 2020.

35. Adam Nahari, Harnessing External Data in Public and Private Market Investing, 2022.

X. Publications

Books

1. *Introduction to Linear Optimization*, (with J. Tsitsiklis), Dynamic Ideas and Athena Scientific, Belmont, Massachusetts, 1997.

2. *Data, Models and Decisions: The Fundamentals of Management Science*, (with R. Freund), Dynamic Ideas, Belmont, Massachusetts, 2004.

3. *Optimization over Integers*, (with R. Weismantel), Dynamic Ideas, Belmont, Massachusetts, 2005.

4. *The Analytics Edge*, (with A. O'Hair and W. Pulleyblank), Dynamic Ideas, Belmont, Massachusetts, 2016.

5. *Machine Learning under a Modern Optimization Lens*, (with J. Dunn), Dynamic Ideas, Belmont, Massachusetts, 2019.

6. *Robust and Adaptive Optimization*, (with D. den Hertog), Dynamic Ideas, Belmont, Massachusetts, 2022.

7. *Queueing Theory: Classical and Modern Methods*, (with D. Gamarnik), Dynamic Ideas, Belmont, Massachusetts, 2022.

8. *The Analytics Edge in Healthcare*, (with A. Orfanoudaki and H. Wilberg), Dynamic Ideas, Belmont, Massachusetts, 2025.

Journal articles

1. "On the exact steady state solution of the $E_k/C_2/s$ queue" (with X. Papaconstantinou), *European Journal of Operations Research*, 37(2), 272-287, 1988.

2. "On the steady-state solution of the $M/C_2(a,b)/s$ queueing system" (with X. Papaconstantinou), *Transportation Science*, 125-138, 1988.

3. "An exact FCFS waiting-time analysis for a general class of $G/G/s$ queueing systems", *Queueing Systems Theory and Applications*, 3, 305-320, 1988.

4. "On probabilistic traveling salesman facility location problems", *Transportation Science*, 3, 184-191, 1989.

5. "Worst case examples for the spacefilling curve heuristic for the Euclidean traveling salesman problem", (with M. Grigni), *Operations Research Letters*, 8, 241-244, 1989.

6. "Relations between the pre-arrival and post-departures state probabilities and the FCFS waiting-time distribution for the $E_k/G/s$ queue" (with X. Papaconstantinou), *Naval Research Logistics Quarterly*, 37, 135-149, 1990.

7. "An analytic approach to a general class of $G/G/s$ queueing systems", *Operations Research*, 38, 1, 139-155, 1990.

8. "The probabilistic minimum spanning tree problem", *Networks*, 20, 245-275, 1990.

9. "A priori optimization", (with P. Jaillet and A. Odoni), *Operations Research*, 38, 6, 1019-1033, 1990.

10. "An asymptotic determination of the minimum spanning tree and minimum matching constants in geometrical probability", (with G. van Ryzin), *Operations Research Letters*, 9, 223-231, 1990.

11. "Probabilistic analysis of the Held and Karp lower bound for the Euclidean traveling salesman problem", (with M. Goemans), *Mathematics of Operations Research*, 1, 72-89, 1991.

12. "Transient and busy period analysis of the $GI/G/1$ queue as a Hilbert factorization problem", (with J. Keilson, D. Nakazato, H. Zhang), *Journal of Applied Probability*, 28, 873-885, 1991.

13. "A stochastic and dynamic vehicle routing problem in the Euclidean plane", (with G. van Ryzin), *Operations Research*, 39, 4, 601-615, 1991.

14. "The minimum spanning tree constant in geometrical probability and under the independent model; a unified approach", (with F. Avram), *Annals of Applied Probability*, vol. 2, 1, 113-130, 1992.

15. "A vehicle routing problem with stochastic demand", *Operations Research*, 40, 574-585, 1992.

16. "Transient and busy period analysis for the $GI/G/1$ queue; The method of stages", (with D. Nakazato), *Queueing Systems and Applications*, 10, 153-184, 1992.

17. "Deducing queueing from transactional data: the queue inference engine, revisited, (with L. Servi), *Operations Research*, 40, S217-S228, 1992.

18. "Simulated annealing", (with J. Tsitsiklis), *Statistical Science*, Vol.8, No. 1, 10-15, 1993.

19. "Stochastic and dynamic vehicle routing in the Euclidean Plane: the multiple-server, capacitated vehicle case", (with G. van Ryzin), *Operations Research* , 41, 60-76, 1993.

20. "Survivable networks, LP relaxations and the parsimonious property", (with M. Goemans), *Mathematical Programming*, 60, 145-166, 1993.

21. "Further results on the probabilistic traveling salesman problem", (with L. Howell), *European Journal of Operations Research*, Vol. 65, 1, 68-95, 1993.

22. "On central limit theorems in geometrical probability", (with F. Avram), *Annals of Applied Probability*, vol. 3, 4, 1033-1046, 1993.

23. "Stochastic and dynamic vehicle routing with general arrival and demand distributions", (with G. van Ryzin), *Advances in Applied Probability*, 25, 4, 947-978, 1993.

24. "A technique for speeding up the solution of the Lagrangean dual", (with J. Orlin), *Mathematical Programming*, vol. 63, 1, 23-46, 1994.

25. "The multi-airport ground-holding problem in air traffic control" (with A. Odoni and P. Vranas), *Operations Research*, 42, 2, 249-261, 1994.

26. "Optimization of multiclass queueing networks: polyhedral and nonlinear characterizations of achievable performance", (with I. Paschalidis and J. Tsitsiklis), *Annals of Applied Probability*, 4, 1, 43-75, 1994.

27. "Dynamic ground-holding policies for a network of airports", (with A. Odoni and P. Vranas), *Transportation Science*, 28, 4, 275-291, 1994.

28. "The distributional Little's law and its applications", (with D. Nakazato), *Operations Research*, 43, 2, 298-310, 1995.

29. "Optimization of multiclass queueing networks: a linear control approach", (with F. Avram and M. Ricard), *Stochastic networks; proceedings of the IMA*, (F. Kelly and R. Williams, editors), 199-234, 1995.

30. "Branching bandits and Klimov's problem: achievable region and side constraints", (with I. Paschalidis and J. Tsitsiklis), *IEEE Automatic Control*, 40, 12, 2063-2075, 1995.

31. "Locating discretionary service facilities II: maximizing market size, minimizing inconvenience", (with O. Berman and R. Larson), *Operations Research*, 43, 4, 623-632, 1995.

32. "Computational approaches to stochastic vehicle routing problems", (with P. Chervi and M. Peterson), *Transportation Science*, 29, 4, 342-352, 1995.

33. "Decomposition algorithms for analyzing transient phenomena in multi-class queueing networks in air transportation", (with A. Odoni and M. Peterson), *Operations Research*, 43, 6, 995-1011, 1995.

34. "The achievable region method in the optimal control of queueing systems; formulations, bounds and policies," *Queueing Systems and Applications*, 21, 3-4, 337-389, 1995.

35. "Models and algorithms for transient queueing congestion at a hub airport", (with A. Odoni and M. Peterson), *Management Science*, 41, 1279-1295, 1995.

36. "A new generation of vehicle routing research", (with D. Simchi-Levi), *Operations Research*, 286-304, 1996.

37. "Conservation laws, extended polymatroids and multi-armed bandit problems; a unified polyhedral approach", (with Jose Niño-Mora), *Mathematics of Operations Research*, 21, 2, 257-306, 1996.

38. "A unified method to analyze overtake free systems", (with G. Mourtzinou), *Advances in Applied Probability*, 28, 588-625, 1996.

39. "Stability conditions for multiclass fluid networks", (with D. Gamarnik and J. Tsitsiklis), *IEEE Automatic Control*, 41, 1618-1631, 1996.

40. "Multiclass queueing systems in heavy traffic: an asymptotic approach based on distributional and conservation laws", (with G. Mourtzinou), *Operations Research*, 45, 3, 470-487, 1997.

41. "On the worst case complexity of potential reduction algorithms for linear programming", (with X. Luo), *Mathematical Programming.* 77, 321-333, 1997.

42. "Transient distributional laws and their applications", (with G. Mourtzinou), *Queueing Systems and their Applications*, 25, 115-155, 1997.

43. "The parsimonious property of cut covering problems and its applications", (with C. Teo), *Operations Research Letters*, 21, 123-132, 1997.

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330. "Towards Optimal Valve Prescription for Transcatheter Aortic Valve Replacement (TAVR) Surgery: A Machine Learning Approach", (with Phevos Paschalidis, Vasiliki Stoumpou, Lisa Everest, Yu Ma, Talhat Azemi, Jawad Haider, Steven Zweibel, Eleftherios M Protopapas, Jeff Mather, Maciej Tysarowski, George E Sarris, Robert C Hagberg, Howard L Haronian), to appear *Health Management Science*, 2025.

331. "Sparse Multiple Kernel Learning: Alternating Best Response and Semidefinite Relaxations", (with Caio de Prospero Iglesias, Nicholas AG Johnson), *Transactions on Machine Learning Research*, 2025.

332. "Early Detection of Opioid Over-Procurement: A Machine Learning Approach", (with M. Fazel-Zarandi, J. Ivanhoe and P. Petridis), *Management Science and Operations Management*, 27, 6, 1889-1904, 2025.

333. "Decarbonizing OCP", (with R Cory-Wright, V Digalakis Jr), *Management Science and Operations Management*, 27, 6, 1760-1778, 2025.

334. "Can Artificial Intelligence Improve the Appropriate Use and Decrease the Misuse of REBOA?", (with Mary Bokenkamp, Yu Ma, Ander Dorken-Gallastegi, Jefferson A Proao-Zamudio,

Anthony Gebran, George C Velmahos, Haytham MA Kaafarani), *Bioengineering*, 12, 10, 1025, 2025.

335. "Can artificial intelligence deliver on the promise of precision medicine?", (with Chen Lin, Samuel Singer, Georgios Antonios Margonis), *Hepatobiliary Surgery and Nutrition*, 14, 5, 847-850, 2025.

336. "A Stochastic Benders Decomposition Scheme for Large-Scale Data-Driven Network Design", (with R. Cory-Wright, J. Pauphilet, P. Petridis), *INFORMS Journal of Computing*, 37, 5, 1163-1181, 2025. ‘

337. "Adaptive optimization for prediction with missing data", (with A. Delarue, J. Pauphillet), *Machine Learning*, 114, 5, 1-37, 2025.

338. "Solving LargeScale Weapon Target Assignment Problems in Seconds", (with A. Paskov), *Naval Research Logistics*, 72, 5, 735-749, 2025.

339. "Constructing Uncertainty Sets From Covariates in Power Systems", (with T. Koukouvinos, A. Koulouras), to appear in *IEEE Power Systems*, 40, 5, 3943-3954, 2025.

340. "Empowering Health in Aging Populations: A Multimodal Vulnerability Tool for Frail Patients", (with Joanna G Kondylis, Houman Javedan, Bharti Khurana), *Machine Learning for Health*, 2025.

Papers submitted for publication

341. "Channel Coding via Robust Optimization, Part 1: The Case of a Single Channel", (with C. Bandi) submitted to *IEEE Transactions on Information Theory*, 2015.

342. "Channel Coding via Robust Optimization, Part 2: The Multiple Channel Case", (with C. Bandi) submitted to *IEEE Transactions on Information Theory*, 2015.

343. "Data-driven learning in dynamic pricing using adaptive optimization", (with P. Vayanos), submitted to *Mathematical Programming*, 2015.

344. "The price of flexibility", (with I. Dunning and H. Bidkhori), submitted to *Operations Research*, 2015.

345. "Scalable Robust and Adaptive Inventory Routing", (with S. Gupta, J. Tay), submitted to *Transportation Science*, 2016.

346. "Optimal Selection of Health Care Providers", (with J. Kung), submitted to MS&OM, 2017.

347. "Multiperiod and Online Optimization for Fleet Defense: Centralized and Distributed Approaches", (with P. Jaillet and N. Korolko), submitted to *Naval Research Logistics*, 2017.

348. "From Predictions to Prescriptions in Multistage Optimization Problems", (with C. McCord), submitted to *Mathematical Programming*, 2017.

349. "The Trimmed Lasso: Sparsity and Robustness", (with M. Copenhaver, R. Mazumder), submitted to *IEEE Information Theory*, 2017.

350. "Optimal classification and regression trees with hyperplanes are as powerful as classification and regression neural networks", (with R. Mazumder and M. Sobiesk), submitted to *Journal of Machine Learning Research*, 2018.

351. "Prescriptive Analytics for Observational Data", (with C. McCord), submitted to *Management Science*, 2019.

352. "The Price of Interpretability", (with P. Jaillet, A. Delarue, S. Martin), submitted to *Operations Research*, 2019.

353. "The edge of optimization in large-scale vehicle routing for paratransit", (with J. Yan), submitted to *Transportation Science*, 2020.

354. "Optimal Predictive Clustering", (with M. Sobiesk and Y. Wang), submitted to *Machine Learning*, 2020.

355. "Imbalanced classification via robust optimization", (with Y. Wang), submitted to *Machine Learning*, 2020.

356. "Prescriptive Machine Learning for Public Policy: The Case of Immigration Enforcement", (with M. Fazel-Zarandi), submitted to *Operations Research*, 2020.

357. "A New Perspective on Low-Rank Optimization", (with R. Cory-Wright and J. Pauphilet), submitted to *Mathematical Programming*, 2021.

358. "Time Series that are Robust to Regime Changes", (with I. Paskov), submitted to *Journal of Machine Learning Research*, 2021.

359. "Robust Optimization with Side Data", (with N. Koduri), submitted to *Mathematical Programming*, 2021.

360. "Interpretable Machine Learning for Policy Analysis: The Case of National Immigration Policy", (with M. Fazel-Zarandi), submitted to *Management Science and Operations Management*, 2021.

361. "Multistage Stochastic Optimization via Kernels", (with K. Villalobos Carballo), submitted to *Operations Research*, 2022.

362. "A Robust Optimization Approach to Deep Learning", (with X. Boix, K. Villalobos Carballo and D. den Hertog), submitted to *Journal of Machine Learning Research*, 2021.

363. "THEMIS: A Framework for Cost-Benefit Analysis of COVID-19 Non-Pharmaceutical Interventions", (with M. Li and S. Soni), submitted to *Management Science and Operations Management*, 2022.

364. "Pricing algorithmic Insurance", (with A. Orfanoudaki), submitted to *Management Science and Operations Management*, 2022.

365. "Tabtext: a systematic approach to aggregate knowledge across tabular data structures", (with Kimberly Villalobos Carballo, Yu Ma, Liangyuan Na, Lonard Boussioux, Cynthia Zeng, Luis R Soenksen), 2022.

366. "Distributionally Robust Causal Inference with Observational Data", (with Kosuke Imai, Michael Lingzhi Li), submitted to *Journal of Machine Learning Research*, 2023.

367. "Ensemble Modeling for Time Series Forecasting: an Adaptive Robust Optimization Approach", (with L. Boussioux), *submitted to Journal o Machine Learning Research*, 2023.

368. "Reducing Air Pollution through Machine Learning", (with L. Boussioux and C. Zeng), submitted to *Management Science and Operations Management*, 2023.

369. "Optimal Low-Rank Matrix Completion: Semidefinite Relaxations and Eigenvector Disjunctions", (with R. Cory-Wright, J. Pauphilet, S. Lo), submitted to *Operations Research*, 2023.

370. "Improving Stability in Decision Tree Models", (with V. Digalakis), submitted to *Operations Research*, 2023.

371. "Adaptive Linear Algebra", (with T. Koukouvinos), submitted to *Operations Research*, 2023.

372. "Interpretable Prescriptive Neural Networks", (with L. Everest, V. Stoumpou), submitted to *Machine Learning*, 2023.

373. "Optimal Control of Multiclass Fluid Queueing Networks: A Machine Learning Approach", (with A. Kim), submitted to *Operations Research*, 2023.

374. "A novel algorithm for a broad class of nonconvex optimization problems", (with D. de Moor, T. Koukouvinos, D. den Hertog, J. Zhen), submitted to *Operations Research*, 2023.

375. "Ensemble Modeling for Time Series Forecasting: an Adaptive Robust Optimization Approach", (with L Boussioux), submitted to *Journal of Machine Learning Research*, 2023.

376. "Cone product reformulation for global optimization", (with Danique de Moor, Dick den Hertog, Thodoris Koukouvinos, Jianzhe Zhen), submitted to *INFORMS Journal of Computing*, 2023.

377. "A Simulated Annealing Approach to Designing Optimal Classification Trees", (with Suleeporn Sujichantararat), submitted to *Machine Learning*, 2023.

378. "Robust Regression over Averaged Uncertainty", (with Y. Ma), submitted to *Operations Research*. 2023.

379. "Optimized Oversampling", (with T. Koukouvinos and A. Koulouras), submitted to *IEEE Transactions on Knowledge and Data Engineering Journal*, 2023.

380. "Optimization of Operating Blocks Under Uncertainty: A Probabilistic Robust Optimization Approach", (with B. Boucher), submitted to *Operations Research*, 2024.

381. "Deep Trees for (Un)structured Data: Tractability, Performance, and Interpretability", (with L. Everest, J. Gu, M. Peroni, V. Stoumpou), submitted to *Machine Learning*, 2024.

382. "Cone product reformulation for global optimization", (with D. de Moor, D. den Hertog, T. Koukouvinos, J. Zhen), submitted to *Informs Journal of Computing*, 2024.

383. "Catastrophe Insurance: An Adaptive Robust Optimization Approach", (with C. Zeng), submitted to *MSOM*, 2024.

384. "Towards Stable Machine Learning Model Retraining via Slowly Varying Sequences", (with V. Digalakis, Y. Ma, P. Paschalidis), submitted to *Informs Journal on Computing*, 2024.

385. "M3H: Multimodal Multitask Machine Learning for Healthcare", (with Y. Ma), submitted to *Nature*, 2024.

386. "Policy Trees for Prediction: Interpretable and Adaptive Model Selection for Machine Learning", (with M. Peroni), submitted to *Journal of Machine Learning Research*, 2024.

387. "Optimal Control of Fluid Restless Multi-armed Bandits: A Machine Learning Approach", (with CW. Kim and J. Nino-Mora), submitted to *Machine Learning*, 2024.

388. "Binary Classification: Is Boosting stronger than Bagging?", (with V. Stoumpou), submitted to *Machine Learning*, 2024.

389. "Towards Improving the Interpretability of Deep Learning: An Optimization Approach", (with Z. Lin and R. Ramakrishnan), submitted to *Machine Learning*, 2025.

390. "Adaptive Forests", (with Y. Cui), submitted to *Journal of Machine Learning Research*, 2025.

391. "The R.O.A.D. to clinical trial emulation", (with G. A.Margonis, A. Koulouras, H. Nagata, C. Gao, J. Mizusawa and Y. Kanemitsu), submitted to *Nature Digital Medicine*, 2025.

392. "From Data to Uncertainty Sets: a Machine Learning Approach", (with B. Boucher), submitted to *Informs Journal on Optimization*, 2025.

393. "Interpretable AI-driven Guidelines for Type 2 Diabetes Treatment from Observational Data, (with D. Agarwal), submitted to *Health Care Management Science*, 2025.

394. "Improving Recommendation Systems in Noisy Environments: A Robust Optimization Approach", (with B. Boucher), submitted to *Machine Learning*, 2025.

395. "An exact method for a class of robust nonlinear optimization problems", (with D. de Moor, D. den Hertog, T. Koukouvinos, J. Zhen), submitted to *Global Optimization*, 2025.

396. "Global Nonconvex Optimization with Integer Variables", (with D de Moor, T Koukouvinos, D Kriezis), submitted to *Global Optimization*, 2025.

397. "A novel exact approach to polynomial optimization", (with D Hertog and T Koukouvinos), submitted to *SIAM Journal on Optimization*, 2025.

398. "Efficient domain adaptation of multimodal embeddings using constrastive learning", (with G Margaritis and P Petridis), 2025.

399. "Early Warning Index for Patient Deteriorations in Hospitals", (with Yu Ma, Kimberly Villalobos Carballo, Gagan Singh, Michal Laskowski, Jeff Mather, Dan Kombert, Howard Haronian), submitted to *INFORMS Journal of Applied Analytics*, 2025.

400. "An Interpretable AI Tool for SAVR vs TAVR in Low to Intermediate Risk Patients with Severe Aortic Stenosis', (with Vasiliki Stoumpou, Maciej Tysarowski, Talhat Azemi, Jawad Haider, Howard L Haronian, Robert C Hagberg), submitted to *Nature Digital Medicine*, 2025.

401. "Detection and Localization of Subdural Hematoma Using Deep Learning on Computed Tomography", (with Vasiliki Stoumpou, Rohan Kumar, Bernard Burman, Diego Ojeda, Tapan Mehta), submitted to *Nature Digital Medicine*, 2025.

402. "Overfitting in Adaptive Robust Optimization", (with K. Zhu), submitted to *Machine Learning*, 2025.

403. "Should We Relax Stability in Matching Markets?", (with C. Gao), submitted to *Operations Research*, 2025.

404. "Prescribe-then-Select: Adaptive Policy Selection for Contextual Stochastic Optimization", (with CP Iglesias, KV Carballo), submitted to *Machine Learning*, 2025.

Conference Proceedings (refereed)

405. "On the parsimonious property of connectivity problems", (with M. Goemans), *Proceedings of the first annual ACM-SIAM symposium on discrete algorithms*, 388-396, 1990.

406. "A technique for speeding up the solution of the Lagrangean dual", (with J. Orlin), *Proceedings of the Second Conference on Integer Programming and Combinatorial Optimization*, (ed. E. Balas, G. Cornujelos, R. Kannan), 435-452, 1992.

407. "Conservation laws, extended polymatroids and multi-armed bandit problems; a unified polyhedral approach", (with Jose Niño-Mora), *Proceedings of the Third Conference on Integer Programming and Combinatorial Optimization*, 355-385, 1993.

408. "On a characterization of the minimum assignment and matching in the independent random model", (with F. Avram), *Proceedings of the Third Conference on Integer Programming and Combinatorial Optimization*, 161-171, 1993.

409. "Branching bandits and Klimov's problem: achievable region and side constraints", (with I. Paschalidis and J. Tsitsiklis), IEEE symposium on Automatic Control, 1994.

410. "From valid inequalities to heuristics: a unified view of primal-dual approximation algorithms in covering problems", (with C. Teo), *Sixth symposium on discrete algorithms*, San Fransisco, 102-112, 1994.

411. "Nonlinear formulations and improved randomized approximation algorithms for multicut problems", (with C. Teo and R. Vohra), *Proceedings of the Fourth Conference on Integer Programming and Combinatorial Optimization*, 1995.

412. "On dependent randomized rounding algorithms", (with C. Teo and R. Vohra), *Proceedings of the Fifth Conference on Integer Programming and Combinatorial Optimization*, 1996.

413. "Improved randomized approximation algorithms for lot sizing problems", (with C. Teo), *Proceedings of the Fifth Conference on Integer Programming and Combinatorial Optimization*, 1996.

414. "Solving convex optimization problems by random walks", (with S. Vempala), *Proceedings of the 34th Symposium on the Theory of Computing (STOC)*, 2002.

415. "Dynamic classification of online customers", (with A. Mersereau and N. Patel), *3rd SIAM conference in data mining*, 107–118, 2003.

416. "The Air Traffic Flow Management Problem: An Integer Optimization Approach", (with G. Lulli and A. Odoni), *IPCO*, 34-46, 2008.

417. "An integer optimization approach to associative classification", (with A. Chang and C. Rudin), *26th Annual Conference on Neural Information Processing Systems*, 3302-3310, 2012.

418. "Learning mixed-integer convex optimization strategies for robot planning and control", (with Abhishek Cauligi, Preston Culbertson, Bartolomeo Stellato, Mac Schwager, Marco Pavone), 59th IEEE Conference on Decision and Control (CDC), 1698-1705, 2020.

XI. Oral Presentations

Plenary/Distinguished Lectures:

1. Semi-plenary lecture in Mathematical Programming Conference, Berlin 2012, "Tractable stochastic analysis in high dimensions: a robust optimization approach".

2. Plenary lecture in European Control conference, Zurich 2013, "Tractable stochastic analysis in high dimensions: a robust optimization approach".

3. Plenary lecture in INFORMS conference, Minnesota 2013, "Healthcare Analytics."

4. Ray Fulkerson series of three lectures, Cornell University, 2014.

5. Philip Morse plenary lecture in INFORMS conference, San Fransisco, 2014. "Statistics and Machine Learning via a Modern Optimization Lens."

6. Distinguished lecture, IEOR department, Georgia Institute of Technology, 2015. "Statistics and Machine Learning via a Modern Optimization Lens."

7. Plenary lecture, Conference on optimization, Northwestern University, Chicago, 2015. "From Predictive to Prescriptive Analytics."

8. Plenary lecture, 17th British-French-Geramn Conference in optimization, London, 2015. "Statistics and Machine Learning via a Modern Optimization Lens."

9. Hotelling series of Lectures, University of North Carolina, March, 2016.

10. Plenary lecture, Canadian OR Society, Banff, June 2016.

11. Plenary distinguished IFORS lecturer, Poznan, Poland, July 2016.

12. Plenary lecture for INFORMS health care conference, Rotterdam, July 2017.

13. The Omega-Rho plenary lecture in INFORMS conference, Indianapolis,"Multimodal AI and the future of Universities", November 2022.

14. Universal AI, Conference on Online Education, Paris, July 2025.

15. AI and the Future of Education, National Technical University of Athens, Greece, July 2025.

16. From Operations Research to Artificial Intelligence and to the Future, National Technical University of Athens, December 2025.

Invited talks at Cornell University, Stanford University, Princeton University, MIT, Yale University, University of Michigan, Northwestern University, Northeastern University, Boston University,

Duke University, University of Maryland, University of Minnesota, University of Southern California, Columbia University, University of Berlin, New York University, McMaster University, CNRS, University of Montreal, UC Berkeley, Georgia Institute of Technology, GTE Laboratories, Royal Institute of Technology (Sweden), Boston University, Aussois (France), Oberwolfach (Germany), the Mathematical Programming Symposium, the Institute of Mathematics and its applications (IMA), ETH Zurich, Eurandom (Netherlands), Lunthern, Wharton School, University of Athens, University of Massachusetts, Amherst, National University of Singapore, Tsingua University, Beizing University. Talks at various conferences.