

YICHUAN DING

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EDUCATION

Stanford University, Stanford, CA, USA <i>Ph.D. in Management Science & Engineering</i> Supervisor: Yinyu Ye, Stefanos Zenios	Sep. 2007 – June 2012
University of Waterloo, Waterloo, ON, Canada <i>M.S. in Combinatorics & Optimization</i> Supervisor: Henry Wolkowicz	Sep. 2005 – Apr. 2007
Zhejiang University, Hangzhou, China <i>B.S. in Mathematics & Applied Mathematics</i>	Sep. 2001 – June 2005

PROFESSIONAL EXPERIENCE

Sauder School of Business, University of British Columbia Assistant Professor of Operations and Logistics	July 2012 – current
IBM Research, T.J. Watson Center, Yorktown Heights, NY Research Intern	June 2010 – Sep. 2010

RESEARCH INTERESTS

- Methodology: Optimization, Queueing, Data Analytics/Empirical
- Applications: health care and other public sectors, including allocation and matching of scarce resources (organs, public housings), emergency room, border-crossing, appointment scheduling

ACCEPTED JOURNAL ARTICLES

(Authors indicated with * are students or post-docs that I supervised; those indicated with ^ are clinical collaborators.)

Yuren Wang*, Yichuan Ding, Eric Park*, Garth Hunte^ (2018). “Do financial incentives change length-of-stay performance in emergency departments? A retrospective study of the Pay-for-Performance program in Metro Vancouver”. *Academic Emergency Medicine*, accepted.

Baris Ata, Yichuan Ding, Stefanos Zenios (2018). “An Achievable-Region-Based Approach for Kidney Allocation Policy Design with Endogenous Patient Choice”. *Manufacturing and Service Operations Management*, accepted.

Yichuan Ding, Eric Park*, Mahesh Nagarajan, Eric Grafstein^ (2017). “Patient Prioritization in Emergency Department Triage Systems: An Empirical Study of Canadian Triage and Acuity Scale (CTAS)”. *Manufacturing and Service Operations Management*, accepted.

Yichuan Ding, Dongdong Ge, Simai He, Chris Ryan (2018), “A Non-Asymptotic Approach to Analyzing Kidney Exchange Graphs”, *Operations Research*, 66:4, 918-935.

Yu Mengqiao*, Yichuan Ding, Robin Lindsey, Cong Shi (2016). “A Data-Driven Approach to Manpower Planning at US–Canada Border Crossings.” *Transportation Research Part A: Policy and Practice*, 91, 34-47

David Lowsky, Yichuan Ding, Donald Lee, Charles McCulloch^, Lainie Ross^, Richard Thistlethwaite^, Stefanos Zenios (2013). “A K-Nearest-Neighbors Survival Probability Prediction Method.” *Statistics in Medicine*, 32(12), 2062-2069.

Shipra Agrawal, Yichuan Ding, Amin Saberi, Yinyu Ye (2012). “Price of correlations in Stochastic Optimization.” *Operations Research*, 60(1), 150-162.

Yichuan Ding, Dongdong Ge, Henry Wolkowicz (2011). “On equivalence of semidefinite relaxations for quadratic matrix programming.” *Mathematics of Operations Research*, 36(1), 88-104.

Yichuan Ding, Nathan Krislock, Jiawang Qian, Henry Wolkowicz (2010). “Sensor network localization, Euclidean distance matrix completions, and graph realization.” *Optimization and Engineering*, 11(1), 45-66.

Yichuan Ding, Henry Wolkowicz (2009). “A Low-Dimensional Semidefinite Relaxation for the Quadratic Assignment Problem.” *Mathematics of Operations Research*, 34(4), 1008-1022.

ARTICLES SUBMITTED FOR PUBLICATION

Yichuan Ding, Thomas McCormick, Mahesh Nagarajan (2018). “A Fluid Model for an Overloaded Bipartite Queueing System with Scoring-Based Priority Rules”, *Operations Research*, minor revision.

Yichuan Ding, Preveena Dharmaraj^, Sean Hardy^, Sarah McAnally^, Zhen Liu*, Garth Hunte^ (2018). “A Combined Use of NEWS and CTAS in Predicting Admission Likelihood in Emergency Departments”. Under revision for the second-round review of *Canadian Journal of Emergency Medicine*. (first round: major revision)

Melissa Wan^, Jacques X. Zhang^, Yichuan Ding, Yiwen Jin*, Julie Bedford^, Mahesh Nagarajan, Marija Bucevska^, Douglas Courtemanche^, Jugpal S. Arneja^ (2018). “High Risk Plastic Surgery...” (complete title can be released after publication according to the journal’s requirement), submitted.

WORKING PAPERS

Yichuan Ding, Mahesh Nagarajan, Zhe Zhang (2018). “Heavy-Traffic Limits for a Special Class of State-Dependent Queueing Systems”, to submit to *Operations Research*.

Shenghai Zhou*, Yichuan Ding, Tim Huh, Guohua Wan (2018). “Constant Job-Allowance Policies for Appointment Scheduling: Asymptotic Optimality and Numerical Analysis”, to submit to *Manufacturing and Service Operations Management*.

Yichuan Ding, Diwakar Gupta, Xiaoxu Tang*. “Managing a Slotted Service System with Returning Customers”, to submit to *Operations Research*.

Yichuan Ding, Nancy Humber[^], Barbara Lai[^] (2018). “Do Patients From Rural Areas Get Proper Referral for Surgical Care?”

ACCEPTED CONFERENCE PAPERS

Yichuan Ding, Dongdong Ge, Simai He, Chris Ryan (2015). “A non-asymptotic approach to analyzing kidney exchange graphs.” *Proceedings of The 16th ACM conference on Economics and Computation (EC)*.

Shipra Agrawal, Yichuan Ding, Amin Saberi, Yinyu Ye (2009). “Correlation robust stochastic optimization.” *Proceedings of the Twenty-First Annual ACM-SIAM Symposium on Discrete Algorithms (SODA) (pp. 1087-1096)*.

Zizhuo Wang and Yichuan Ding (2008). “Real-time tracking for sensor networks via SDP and gradient method.” *Proceedings of the first ACM international workshop on Mobile entity localization and tracking in GPS-less environments (pp. 109-112)*. ACM.

Yichuan Ding (2008). “A note on the trackability of dynamic sensor networks.” *Proceedings of the first ACM international workshop on Mobile entity localization and tracking in GPS-less environments (pp. 113-116)*. ACM.

RESEARCH GRANT

- Sauder Exploratory Grant 2013, 2014, 2015, 2016
- NSERC (Nature Sciences and Engineering Research Council of Canada) Discovery Grant: Overloaded Queueing Systems: Service Capacity Allocation and Incentive Issues 2013-2019
- The Center for Innovative Data in Economics Grant: Innovative Use of Data for Better Gatekeeping in Emergency Department 2018-2019

AWARDS OF SCHOLARSHIP

- 3rd Place, Best Working Paper Award, 2017 Behavioral Operations Management Section.
- 2012 Dantzig-Lieberman Fellowship, Stanford University

- 2010 student paper prize, honorable mention, by the COSP (Committee of Stochastic Programming)

MEDIA COVERAGE

- “UBC study: Kidney transplant chains more effective in saving lives”, by *eurekaalert.org*.
- “CBSA improperly schedules border staff: UBC”, by *24 Hours Vancouver*
- “Cutting border wait times without adding staff: UBC study”, by *News1130*
- “Canadian border lineups could be way shorter with new scheduling technique”, by Global News

TEACHING ACTIVITIES

- BAMS 501 Probabilistic Models for Management (master) 2012, 2013
- BAMS 502 Stochastic Processes (master) 2012, 2013
- COMM 204 Logistics and Operations Management (undergrad)
2013, 2014, 2015, 2016, 2017, 2018
- Business Statistics (International MBA) 2014, 2015, 2016, 2017, 2018

PROFESSIONAL ACTIVITIES

Editorial Services:

- Guest Associate Editor for Naval Research Logistics, since 2018
- Journal Reviewer: Operations Research, Management Science, Manufacturing and Service Operations, Mathematics of Operations Research, SIAM in Optimization, SIAM in Discrete Mathematics, European Journal of Operations Research, Production and Operations Management, IIE Transactions, Journal of Combinatorial Optimization, Operations Research Letter, INFORMS Journal on Computing, Operations Research for Health Care, Naval Logistic Research, Stochastic Systems

Services to The Community:

- Judge for Paper Competition:
 - 2013 INFORMS Healthcare Application Society Student Paper Competition
 - 2015 INFORMS Healthcare Application Society Student Paper Competition
 - 2017 POMS School of Healthcare Operations Management Best Student Paper Competition
- Judge for Conferences:

2016 MSOM SIG Conference – Healthcare Operations Track
2017 MSOM SIG Conference – Healthcare Operations Track
2018 MSOM SIG Conference – Healthcare Operations Track

- Conference Co-Organizer:

2020 Asia-Pacific International Symposium on Advanced Reliability and Maintenance (APARM)

2017 International Data-Driven Optimization Workshop – in Celebration of Professor Yinyu Ye's 70th birthday, SHUFE, Shanghai, China.

Internal Services:

- Member of UBC Faculty Association,
- Member of Research Committee, Sauder School of Business, UBC

STUDENTS SUPERVISED

Current Students:

Weihua Zhang, 5th-year doctoral student, Sauder School of Business, UBC

Yiwen Jin, 1st-year doctoral student, Sauder School of Business, UBC

Past Students (Years of Supervision, Placement):

- Post-doc Fellow:

Eric Park, 2013-2015, assistant professor, Faculty of Business and Economics, Hong Kong University

- Visiting Ph.D. Student:

Shenghai Zhou, 5th year doctoral student from Antai College of Economics and Management, Shanghai Jiao Tong University, now on the job market.

- Undergraduates (including Interns and Exchange Students)

Zhen Liu, 2017-2018, master student, Mathematical Finance, University of Toronto

Yiwen Jin, 2017-2018, doctoral student, Operations and Logistics, Sauder School of Business, UBC

Dieyi Chen, 2017, doctoral student, Department of Statistics, Harvard University

Yujia Jin, 2016-2018, doctoral student, Department of Management Science and Engineering, Stanford University

Yutong Liu, 2015-2016, master student, Department of Computer Science, University of Toronto

Jiixin Liang, 2015-2016, doctoral student, Ross School of Business, University of Michigan

Qing Mu, 2016, master student, Management Information System, CMU

Kai Wang, 2016, master student, Mathematical Finance, Cornell University

Yunlong Wang, 2016, master student, Chinese Academy of Science, China

Yuren Wang, 2015, master student, National University of Defense Technology, China

Haoxiang Pan, 2014-2015, master student, Economics, University of Oxford

Mengqiao Yu, 2014, doctoral student, Transportation Engineering, U.C. Berkeley

INVITED SEMINAR PRESENTATIONS

“An Achievable-Region-Based Approach for Kidney Allocation Policy Design with Endogenous Patient Choice”, Carey Business School, Johns Hopkins University, Baltimore, MD, September 2018

“An Achievable-Region-Based Approach for Kidney Allocation Policy Design with Endogenous Patient Choice”, Naveen Jindal School of Management, University of Texas at Dallas, Dallas, TX, February 2018

“Fluid Models for Resource Matching and Allocation,” Industrial & Systems Engineering, University of Washington, Seattle, WA, January 2018

“Fluid Models for Resource Matching and Allocation,” Marshall School of Business, University of Southern California, Los Angeles, CA, January 2018

“Fluid Models for Resource Matching and Allocation,” Stern School of Business, New York University, New York, NY, November 2017

“Fluid Models for Resource Matching and Allocation,” Krannert School of Management, Purdue University, West Lafayette, IN, September 2017

“A Fluid Model for an Overloaded Bipartite System with Scoring-Based Policies,” Chicago Booth School of Business, Chicago University, Chicago, IN, September 2017

“A Fluid Model for an Overloaded Bipartite System with Scoring-Based Policies,” Rotman School of Management, Toronto University, Toronto, ON, October 2016

“A Fluid Model for an Overloaded Bipartite System with Scoring-Based Policies,” Department of Decision Science, Fuqua School of Business, Duke University, Durham, NC, March 2016

“A Fluid Model for an Overloaded Bipartite System with Scoring-Based Policies,” Department of Operations Research, North Carolina State University, Raleigh, NC, March 2016

“An Overloaded Service System with Scoring-Based Policies,” Healthcare Seminar Series, Department of Mechanical Engineering, University of Toronto, Toronto, Canada, Dec 2014

“New Applications of Optimization Methods in Queueing Systems” Seminar Series in memorial of Professor Peter Veinott, Shanghai University of Finance and Economics, June 2014

“New Research Topics in Healthcare Operations”, Antai School of Economics and Management, Shanghai Jiao Tong University, Shanghai Dec 2013

“An Overloaded Multi-Class Queueing System with Scoring-Based Policies,” Department of Industrial and System Engineering, University of Minnesota, Minneapolis, MN, 2013.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” Department of Industrial Operations and Logistics, Sauder School of Business, Vancouver, 2012.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” Department of Decision Science, NUS Business School, National University of Singapore, Singapore, 2012.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” Department of Decision Science, School of Business, Lee Kong Chian School of Business, Singapore Management University, Singapore, 2012.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” Department of Industrial Engineering and Logistic Management, The Hong Kong University of Science and Technology, Vancouver, 2012.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” Department of Industrial and Operations Engineering, University of Michigan, Ann Arbor, MI, 2012.

“Price of Correlation in Stochastic Programming,” 2011 The Tutte Seminar, Department of Combinatorics and Optimization, University of Waterloo, Ontario, Canada, June 2011.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the New Era,” 2011 M&SOM annual conference, Ann Arbor, Michigan, USA, June 2011.

“A Lower Dimensional Semidefinite Relaxation for Quadratic Assignment Problem,” Banff International Research Station, BIRS, Banff, Alberta, Canada, Oct. 2006.

CONFERENCE PRESENTATIONS

“Optimization Models in Public Sectors”, 2017 International Data-Driven Optimization Workshop – in celebration of Prof Yinyu Ye’s 70th birthday, SHUFE, Shanghai, China, Dec 2017.

“Patient Prioritization in Emergency Department Triage Systems: An Empirical Study of Canadian Triage and Acuity Scale (CTAS)”, Presentation for Behavioral Operations Management the Best Working Paper Award Competition, INFORMS Annual Conference, Houston, TX, November 2017

“A Fluid Model For An Overloaded Bipartite Queueing System With Scoring Based Priority Rules”, MSOM Annual Conference, Chapel Hill, NC, June 2017

“A Fluid Model for An Overloaded Bipartite Queueing System With Scoring Based Priority Rules”, POMS Annual Conference, Seattle, May 2017

“Managing Returning Customers in An Appointment Based Service System”, POMS Annual Conference, Seattle, May 2017

“Managing Returning Customers in An Appointment Based Service System”, INFORMS Annual Conference, Nashville, TN, November 2016

“A Fluid Model For An Overloaded Bipartite Queueing System With Scoring Based Priority Rules”, INFORMS Annual Conference, Nashville, TN, November 2016

“A slotted queue with state-dependent arrival rate and returning customers, and its application in outpatient scheduling”, Annual International Conference of the Chinese Scholars Association for Management Science and Engineering (CSAMSE), Hefei, China, July 2016

“Multi-queue service systems with dynamic customer choice”, Annual International Conference of the Chinese Scholars Association for Management Science and Engineering (CSAMSE), Hefei, China, July 2016

“Patient Prioritization in Emergency Department Triage Systems: An Empirical Study of Canadian Triage and Acuity Scale (CTAS)”, Annual International Conference of the Chinese Scholars Association for Management Science and Engineering (CSAMSE), Hefei, China, July 2016

“Outpatient-Clinic Capacity Management when Continuity of Care Matters” 2015 INFORMS Annual Conference, Philadelphia, PA, November 2015

“Outpatient-Clinic Capacity Management when Continuity of Care Matters”, 2015 INFORMS Health Care Conference, Nashville, TN, August, 2015

“A Multi-Queue System with Customer Choice” 2015 INFORMS Applied Probability Society (APS) Conference, Istanbul, Turkey, July 2015

“Outpatient-Clinic Capacity Management when Continuity of Care Matters”, 2015
Manufacture and Service Operations Management (MSOM) Special Interest Group (SIG),
Toronto, Canada, June 2015

“A Non-asymptotic Approach to Analyzing Kidney Exchange Graphs”, 2015
Manufacture and Service Operations Management (MSOM), Toronto, Canada, June 2015

“A Non-asymptotic Approach to Analyzing Kidney Exchange Graphs”, 2015 Production
Operations Management Society (POMS) conference, Orlando, FL, May 2015

“An Overloaded Service System with Scoring-Based Policies,” 2014 MSOM annual
conference, Seattle, WA, June 2014

“An Overloaded Service System with Scoring-Based Policies,” 2014 INFORMS annual
conference, San Francisco, CA, Nov. 2014

“An Overloaded Service System with Scoring-Based Policies,” Session Chair and
Speaker, 2013 INFROMS Applied Probability Society Conference, Costa Rica, July 2013.

“Donor-Dependent Scoring Schemes: Shaping the Allocation of Cadaver Kidneys in a
New Era”, Session Chair and Speaker, 2013 INFROMS Applied Probability Society
Conference, Costa Rica, July 2013.

“Modeling Patient Follow-ups in a Primary Care,” speaker and session chair, 2012
POMS annual conference, Chicago, Illinois, USA, April 2012.

“The Donor-Dependent Scoring Policies: Shaping the Cadaver Kidney Allocation in the
New Era,” 2011 INFORMS Healthcare, Montreal, QC, Canada, June 2011.