

Yingcong Tan

Contact Information

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Summary

I obtained a Ph.D. in Industrial Engineering at Concordia University, under the supervision of Dr. Daria Terekhov and Dr. Andrew Delong. My Ph.D. thesis is on *Learning Linear Programs: Inverse Optimization as a Form of Machine Learning*.

My research centers around the idea of integration of Operations Research and Machine Learning. In particular, my research interests lie in scheduling problem and inverse optimization problem.

Research Experience

Postdoctoral Fellow Sep. 2021 - Dec. 2022
Concordia University, Montréal, Québec, Canada

Advisor: [Dr. Daria Terekhov](#), Department of Mechanical, Industrial and Aerospace Engineering, Concordia University

[Dr. Andrew Delong](#), Department of Computer Science and Software Engineering, Concordia University

Research Intern Apr. - Aug. 2021
Zhejiang Lab, Zhejiang, China

Advisor: [Zhouchen Lin](#), Department of Machine Intelligence, School of Electronics Engineering and Computer Science, Peking University

Education

Ph.D. in Industrial Engineering Jan. 2017 - Apr. 2021
Concordia University, Montréal, Québec, Canada

Thesis: *Learning Linear Programs: Inverse Optimization as a Form of Machine Learning*

Advisor: [Dr. Daria Terekhov](#), MIAE Department, Concordia University

[Dr. Andrew Delong](#), CSSE Department, Concordia University

M.Eng. in Industrial Engineering Sep. 2015 - Dec. 2016
Concordia University, Montréal, Québec, Canada

Recipient of the F.A. Gerard Prize

Bachelor of Applied Science in Engineering Science 2007 - 2012

University of Toronto, Toronto, Ontario, Canada

Major in Biomedical Engineering from the [Division of Engineering Science](#)

Refereed Conference Proceedings

Tan, Y., Delong, A., & Terekhov, D. (2020). *Learning Linear Programs from Optimal Decisions*. In Neural Information Processing Systems, 2020 (Spotlight, top 20% of the accepted papers).

Tan, Y., Delong, A., & Terekhov, D. (2019). *Deep Inverse Optimization*. Integration of Constraint Programming, Artificial Intelligence, and Operations Research, CPAIOR 2019, Thessaloniki, Greece, June 4-7 2019, (pp. 540-556).

Tan, Y., & Terekhov, D. (2018). *Logic-Based Benders Decomposition for Two-Stage Flexible Flow Shop Scheduling with Unrelated Parallel Machines*. In Advances in Artificial Intelligence: 31st Canadian Conference on Artificial Intelligence, CAI2018, Toronto, ON, Canada, May 8-11, 2018, (pp. 60-71).

Refereed Journal	<p>Tan, Y., Delong, A., & Terekhov, D.. Learning the Objective of Linear Programs: Models and Insights. (In preparation).</p> <p>Marzolini, S., Swardfager, W., Alter, D. A., Oh, P. I., Tan, Y., & Goodman, J. M. (2015). <i>Quality of Life and Psychosocial Measures Influenced by Exercise Modality in Patients with Coronary Artery Disease</i>. European Journal of Physical and Rehabilitation Medicine, 51(3), 291-299.</p>
Referred Short Paper	<p>Tan, Y. (2018). <i>Automated Scheduling: Reinforcement Learning Approach to Algorithm Policy Learning</i>. Extended Abstract. In Advances in Artificial Intelligence: 31st Canadian Conference on Artificial Intelligence, Canadian AI 2018, Toronto, ON, Canada, May 8-11, 2018, (pp. 335-338).</p>
Conference Presentations	<p>Tan, Y.(2020). <i>Learning Linear Programs from Optimal Decisions</i>. Presentation at NeurIPS, December 6-12, 2020.</p> <p>Tan, Y.(2019). <i>Deep Inverse Optimization</i>. Presented at CPAIOR2019, Thessaloniki, Greece, June 4-7, 2019. Presented at JOPT2019, Montréal, Québec, Canada, May 13-15, 2019</p> <p>Tan, Y. (2018). <i>Decomposition-Based Exact Algorithms for Two-Stage Flexible Flow Shop Scheduling with Unrelated Parallel Machines</i>. Presented at CORS2018 Halifax, Nova Scotia, Canada, June 4-7, 2018. Presented at CAI2018, Toronto, ON, Canada, May 8-11, 2018.</p> <p>Tan, Y. (2018). <i>Automated Scheduling: Reinforcement Learning Approach to Algorithm Policy Learning</i>. Presentation at CAI2018 (Student Symposium), Toronto, ON, Canada, May 8-11, 2018.</p>
Awards	<p>Concordia Accelerator Award 2020 Concordia University, Montréal Québec</p> <p>Conference and Exposition Award 2018, 2019 Concordia University, Montréal Québec</p> <p>F.A. Gerard Prize 2018 Awarded annually to the most deserving non-thesis master graduate of Gina Cody School of Engineering and Computer Science Concordia University, Montréal, Québec</p> <p>Best Paper Award 2018 O.R./M.S. Scientific Writing Student Competition GERAD, Montréal, Québec</p> <p>Student Travel Scholarship May 2018 Awarded by the student symposium of CAI2018.</p>
Scholarships And Bursaries	<p>Concordia Merit Scholarship 2018-2019 In-Course scholarship awarded to graduate students with high academic standing. Concordia University, Montréal, Québec</p> <p>Power Corporation Of Canada Graduate Fellowship 2016-2017 In-Course scholarship awarded to graduate students with high academic standing. Concordia University, Montréal, Québec</p> <p>Graduate Research Assistantship 2017-2019 Concordia University, Montréal, Québec</p>

	Graduate Student Support Program Bursary Concordia University, Montréal, Québec	2017-2019
Teaching Experience	Teaching Assistant <i>INDU480 - Cases in Industrial Engineering</i> (Undergraduate Course) Dept. of Mechanical, Industrial and Aerospace Engineering (MIAE) Concordia University, Montréal, Québec, Canada Winter 2020 <i>COMP6321 - Machine Learning</i> (Graduate Course) Dept. of Computer Science and Software Engineering (CSSE) Concordia University, Montréal, Québec, Canada Fall 2019 <i>INDU6231 - Scheduling Theory</i> (Graduate Course) Dept. of Mechanical, Industrial and Aerospace Engineering (MIAE) Concordia University, Montréal, Québec, Canada Summer 2017	
Professional Experience	Project Coordinator Cardiovascular Rehabilitation and Prevention Program Toronto Rehabilitation Institute, Toronto, Ontario, Canada Feb. 2013 - Aug. 2014 Engineering Intern Dept. of Telecommunication Engineering Hydro One Inc., Toronto, Ontario, Canada Sep. 2010 - Aug. 2011	
Service	Academic Reviewer Journal of Computers & Operations Research 2019 MIAE Graduate Student Committee Dept. of Mechanical, Industrial and Aerospace Engineer Concordia University, Montréal, Quebec, Canada Jan. 2016 - Apr. 2020 <ul style="list-style-type: none"> • Committee Chair: Sept. 2017 - Aug. 2019 • Organized graduate seminar (30+ talks); department-wide networking events (10+ events); distinguished Speaker Seminar of the Gina Cody School (4 talks); Ph.D. Student Poster Competition (3 times) • Completed several funding applications (+10K granted). Team Lead of Question Creation & Automation The Operations Research Challenge (<i>TORCH</i>) Concordia University, Montréal, Quebec, Canada Sept. 2016 - Mar. 2019 Clinic Exercise Volunteer Research Volunteer Cardiovascular Prevention and Rehabilitation Program Toronto Rehabilitation Institute , Toronto, Ontario, Canada Oct. 2010 - Aug. 2014 June 2012 - Feb. 2013	