

Utsav Sadana

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Assistant Professor

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Education

- Ph.D., Management Science, HEC Montréal, Montréal, Canada Aug. 2017 – May 2021
Thesis title: Essays on Differential Games with Impulse Control
Advisor: Prof. Georges Zaccour
- Visiting Ph.D. student, University of Illinois at Urbana-Champaign, USA Sep. 2019 – Feb. 2020
- Dual Degree, Indian Institute of Technology Kanpur, India Jul. 2012 – May 2017
B.Tech, Materials Science and Engineering
M.S., Economics

Professional Appointments

- IVADO Reseacher Aug. 2024 -
- Member of GERAD Aug. 2024 -
- Member of CIRRELT Jun. 2024 -
- Assistant Professor, DIRO, Université de Montréal Jul. 2023 -
- Postdoctoral Fellow (FRQNT, IVADO-funded position), McGill University Jun. 2021 – Jun. 2023
- Lecturer, McGill University May 2022 – Jun. 2022
- Researcher, ORT France, Paris Summer 2015

Selected Awards and Honors

- Teaching Excellence Award, Association of Postdoctoral Fellows, McGill University 2022
- Finalist for the “*Young Scholar Best Paper Award*” at ISDG, Porto, Portugal 2022
- GERAD Postdoctoral Fellowship 2021 – 2022
- FRQNT Postdoctoral Research Scholarship (B3X) 2021 – 2023
- PBEEE Quebec-India Doctoral Research Scholarship 2019 – 2021
- FRQNT Doctoral Research Scholarship (B2X) 2019 – 2021
- FRQNT International Internship Program 2018
- Fondation J.A. DeSève Bursary (PhD), HEC Montréal for academic excellence 2018
- Graduate Research Award (MHRD, India) to pursue Masters at IIT Kanpur 2016
- Summer Research Scholarship, ORT France, Paris 2015

Grants

- Discovery Grant 2024-2029
Funding agency: Natural Sciences and Engineering Research Council of Canada (NSERC)
Project: Decision-making in dynamical systems
Amount: \$170,000 over five years
Role: Principal Investigator
- Discovery Launch Supplement 2024-2029
Funding agency: Natural Sciences and Engineering Research Council of Canada (NSERC)
Project: Decision-making in dynamical systems
Amount: \$12,500 over five years
Role: Principal Investigator
- Mitacs Acceleration 2024-2026
Funding agency: Mitacs
Project: Integration of Environmental Data into Urban Planning: A Mathematical Optimization Approach
Amount: \$45,000 over two years
Principal Investigator: Prof. Margarida Carvalho
Role: Co-investigator
Partner organization: Éco-Pivot, a start-up in Montréal
- Start-up fund 2023-2026
Funding agency: Département d'Informatique et de Recherche Opérationnelle (DIRO)
Project: Hire graduate students
Amount: \$50000 over three years
Role: Principal Investigator

Journal Papers

- [J1] Sadana, U., & Zaccour, G. (2026). Subsidizing a new technology: An impulse stackelberg game approach. *European Journal of Operational Research*, 329(3), 1015–1029
- [J2] Sadana, U., Chenreddy, A., Delage, E., Forel, A., Frejinger, E., & Vidal, T. (2025). A survey of contextual optimization methods for decision-making under uncertainty [More than 240 citations]. *European Journal of Operational Research*, 320(2), 271–289
- [J3] Sadana, U., & Delage, E. (2023). The value of randomized strategies in distributionally robust risk-averse network interdiction problems [Featured Article (30% articles)]. *INFORMS Journal on Computing*, 35(1), 216–232
- [J4] Sadana, U., Reddy, P. V., & Zaccour, G. (2023). Feedback nash equilibria in differential games with impulse control [Finalist, Best Paper Award, International Symposium on Dynamic Games, Porto, 2022]. *IEEE Transactions on Automatic Control*, 68(8), 4523–4538
- [J5] Sadana, U., Reddy, P. V., Başar, T., & Zaccour, G. (2021). Sampled-data nash equilibria in differential games with impulse controls. *Journal of Optimization Theory and Applications*, 190(3), 999–1022

- [J6] Sadana, U., Reddy, P. V., & Zaccour, G. (2021). Nash equilibria in nonzero-sum differential games with impulse control. *European Journal of Operational Research*, 295(2), 792–805

Invited Newsletter Contributions

- [N1] Sadana, U., & Delage, E. (2024). Contextual stochastic optimization methods for decision making under uncertainty. *Stochastic Programming Society (SPS) Newsletter*, 3(1), 11–13. https://irp.cdn-website.com/ac04c1e4/files/uploaded/SPS_Newsletter_2024-56-.pdf

Book Chapter

- [B1] Rudnianski, M., Sadana, U., & Bestougeff, H. (2016). Bayesian networks and games of deterrence. In L. A. Petrosyan & V. V. Mazalov (Eds.), *Recent advances in game theory and applications: European meeting on game theory, saint petersburg, russia, 2015, and networking games and management, petrozavodsk, russia, 2015* (pp. 201–222). Springer

Under Review

- [P1] Sadana, U., Delage, E., & Georghiou, A. (2024). Mitigating optimistic bias in entropic risk estimation and optimization. *arXiv preprint arXiv:2409.19926*. <https://arxiv.org/pdf/2409.19926>

Talks and Seminars

- Banff International Research Station (BIRS) Workshop, Banff, Canada 2026
Mitigating optimistic bias in entropic risk estimation and optimization
- INFORMS Annual Meeting (invited), Atlanta, USA 2025
Optimistic Bias in Data-Driven Risk Estimation and Optimization
- IEMS Seminar (invited), Northwestern University, Evanston, USA 2025
Data-driven decision making under uncertainty with entropic risk measure
- Stochastic Programming Society Virtual Seminar Series 2025
Towards Decision-Focused Learning: Advances in Contextual Optimization
- **Invited tutorial**
- INFORMS Computing Society Conference (invited), Toronto, Canada 2025
What's hidden in the tails? Revealing and reducing optimistic bias in entropic risk estimation and optimization
- Dynamic Games and Applications Seminar (invited), Montréal, Canada 2024
Subsidizing a New Technology: An Impulse Stackelberg Game Approach
- International Symposium on Mathematical Programming (invited), Montréal, Canada 2024
Data-driven decision making under uncertainty with entropic risk measure
- International Symposium on Dynamic Games, Valladolid, Spain 2024
Subsidizing a New Technology: An Impulse Stackelberg Game Approach
- GERAD Seminar, Montréal, Canada 2024
Nash Equilibria in Two-Player Differential Games with Impulse Control

- Workshop on Games and Optimization, Montréal, Canada 2024
Feedback Nash equilibria in differential games with Impulse control
- Optimization Days, Montréal, Canada 2024
Data-driven decision making under uncertainty with entropic risk measure
- CORS Annual Conference/Optimization Days, Montréal, Canada 2023
A Review of Contextual Stochastic Optimization II: Integrated Learning and Optimization
- Contextual optimization workshop, Montréal, Canada 2023
A Review of Contextual Stochastic Optimization: Integrated Learning and Optimization
- DS4DM Coffee Talk, Montréal, Canada 2023
The Value of Randomized Strategies in Distributionally Robust Risk-Averse Network Interdiction Problems
- Meet a GERAD Researcher Seminar, Montréal, Canada 2023
Nash Equilibria in Two-Player Differential Games with Impulse Control
- DIRO Seminar (invited), Université de Montréal, Canada 2023
Decision making in dynamic multi-agent systems with limited resources
- International Symposium on Dynamic Games, Porto, Portugal 2022
Feedback Nash Equilibria in Differential games with Impulse Control
- CORS/INFORMS International Conference, Vancouver, Canada 2022
Decision-focused Learning for a Newsvendor with Side Information
- CORS Annual Conference (virtual) 2021
The value of randomized strategies in distributionally robust risk averse network interdiction problems
- INFORMS Virtual Annual Meeting (invited) 2020
The value of randomized strategies in distributionally robust risk averse network interdiction problems
- Virtual Informal Systems Seminar (invited), McGill and GERAD, Montréal, Canada 2020
Open-loop Nash equilibria in nonzero-sum differential games with impulse controls
- Workshop on Differential Games, Stony Brook Center for Game Theory (invited), NY, USA. 2020
Open-loop Nash equilibria in differential games with impulse controls
- CRC - Decision Making Under Uncertainty Seminar Series (virtual) 2020
The value of randomized strategies in distributionally robust risk averse network interdiction problems
- 11th Workshop on Dynamic Games in Management Science, Montréal, Canada 2019
Nash Equilibria in Non-Zero-Sum Differential Games with Impulse Control
- Optimization Days, Montréal, Canada 2019
Is it time to intervene? An impulse control approach to dynamic games

Courses Taught

- IFT-2505 Optimisation Linéaire, Université de Montréal Winter 2026, Fall 2026
Instructor
- IFT-6575 Methods of Operations Research, Université de Montréal Fall 2024, Fall 2025, Fall 2026
Instructor
- IFT-6521 Dynamic Programming, Université de Montréal Winter 2024, Winter 2025, Winter 2026
Instructor

- MGCR-271: Business Statistics, McGill University Summer 2022
Instructor

Supervision

- Maël Charpentier, Master's student, Université de Montréal, Canada Fall 2024 -
co-supervised with Prof. Margarida Carvalho
- Gabriel-Fortin Leblanc, PhD student, Université de Montréal, Canada Fall 2024 -
co-supervised with Prof. Emma Frejinger
- Julien-Charles Cyr, Master's student, Université de Montréal, Canada Winter 2024 -
- Oscar Lavolet, Internship, Université de Montréal, Canada Summer 2024
- Yug Garg, Internship, McGill University (remote) Summer 2022
- Nacer Fendri, Internship, GERAD (HEC Montréal) Summer 2022
co-supervised with Prof. Georges Zaccour

Event Organization

- Lead organizer, 5 day Workshop: *Contextual Stochastic Optimization: From Data to Decisions*, Banff International Research Station, Alberta, Canada 2026
- Co-chair, Cluster: *Data-driven decision making*, Canadian Operations Research Society conference (CORS), Edmonton 2025
- Co-organizer, CRM Workshop on Data Science and Combinatorial Optimization, Montréal 2025
- Session chair, CORS/INFORMS International Conference, Vancouver 2022
- Co-organizer, Dynamic Games and Applications Seminars (virtual) 2020 – 2021

Academic Service

- Member of several FRQNT committees for evaluation of scholarship and grant applications 2025
- PhD thesis defense jury member
 - Charly Robinson Larocca, Data-Driven Large Neighbourhood Search for Combinatorial Optimization Problems, DIRO, Université de Montréal 2025
 - Mathieu Duchesneau, Learning Equivalence Hash Functions, DIRO, Université de Montréal 2025
- Master's thesis jury member
 - Béatrice Hajjar, The Locomotive Routing Problem at CN: A New Approach for More Robust Solutions, DIRO, Université de Montréal 2025
 - Cheikh Abdallahi Ahmed, DistrictNet: Optimisation des districts avec l'apprentissage automatique pour une planification efficace à long terme, Polytechnique Montréal 2024
 - Massimo Pietracupa, Detecting Pre-Error States and Process Deviations Resulting from Cognitive Overload in Aircraft Pilots, DIRO, Université de Montréal 2024
- PhD proposal defense jury member, DIRO, Université de Montréal
 - Jean Laprès-Chartrand, Application of optimal control to aquaponic systems (Predoc III) 2024
 - Warley Almeida Silva, Dynamic Location Problems with Decision-Dependent Demands, Customer Preferences and Market Competition (Predoc III) 2023

- Gregory De Salaberry Seljak, Random Quasi Monte Carlo Methods (Predoc II) 2024
- Jury member, Communicating OR/MS: The Scientific Writing Activity, GERAD & CIRRELT 2024
- Admissions Committee, DIRO, Université de Montréal 2023–2025
- FRQNT Doctoral award committee 2024
- NSERC (CGS) Master’s award committee, McGill University 2022, 2023
- Reviewer for Operations Research, Transportation Science, INFORMS Journal on Computing, European Journal of Operational Research, Production and Operations Management, Dynamic Games and Applications, Journal of Optimization Theory and Applications, Journal of Operations Research Society, IEEE Transactions on Automatic Control, European Economic Review, Mathematical Methods of Operations Research, Operations Research Letters, The IEEE Control System Letters, and IEEE Transactions on Systems, Man, and Cybernetics: Systems

Personal

Citizenship: India

Languages: Hindi (native), English (fluent), French