Utsav Sadana

CONTACT INFORMATION	Ph.D. Candidate, Department of Decision Sciences GERAD, HEC Montréal	utsav.sadana@hec.ca https://utsav19.github.io/

RESEARCH INTERESTS

Game theory, Impulse optimal control theory, Robust optimization

EDUCATION

HEC Montréal, Canada   **2017 - Present**
Ph.D., Management Science
Advisor: Prof. Georges Zaccour

University of Illinois at Urbana-Champaign, USA   **Sep 2019 - Feb 2020**
Visiting Scholar, Coordinated Science Laboratory
Mentor: Prof. Tamer Başar

Indian Institute of Technology (IIT) Kanpur, India   **2012 - 2017**
B.Tech - M.S. (Dual Degree)

B.Tech., Materials Science and Engineering
Passed with Distinction

M.S., Economics
Advisor: Dr. Debayan Pakrashi

PUBLICATIONS

M. Rudnianski, **U. Sadana**, and H. Bestougeff. Bayesian Networks and Games of Deterrence. In Petrosyan, L. A. and Mazalov, V. V., editors, *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. 201–224). Cham, Switzerland: Springer, 2016.

U. Sadana, P.V. Reddy and G. Zaccour. Open-loop and feedback Nash equilibrium in scalar linear-state differential games with impulse control. Provisionally accepted in *Automatica*, 2020. [pdf]

U. Sadana, P.V. Reddy and G. Zaccour. Nash equilibria in nonzero-sum differential games with impulse control. Revise and Resubmit. *European Journal of Operational Research*, 2020. [pdf]

U. Sadana, P.V. Reddy, T. Başar and G. Zaccour. Sampled-data Nash equilibrium in differential games with impulse control. Under Review at *Journal of Optimization Theory and Applications*, 2020. [pdf]

U. Sadana and E. Delage. The value of randomized strategies in distributionally robust risk averse network interdiction games. In preparation for submission at *INFORMS Journal on Computing*, 2021. [pdf]

U. Sadana, P.V. Reddy and G. Zaccour. Feedback Nash equilibrium in non-zero sum differential games with impulse control. Working paper.

TALKS AND PRESENTATIONS

Nash equilibria in nonzero-sum differential games with impulse control.
- *Virtual Informal Systems Seminar*, McGill and GERAD, Oct'20
- *Workshop on Differential Games (virtual)*, Stony Brook Center for Game Theory, NY, US, July'20
- *Optimization Days*, Montréal, Canada, May'19
- *11th Workshop on Dynamic Games in Management Science*, Montréal, Canada, Oct'19

The value of randomized strategies in distributionally robust risk averse network interdiction problems

- *Canadian Operational Research Society (CORS) Annual Conference (virtual)*, June'21
- *INFORMS Annual Meeting (virtual)*, Nov'20
- *CRC-DMU Seminar Series (virtual)*, June'20

INDUSTRY EXPERIENCE	**Summer Intern at ORT France, Paris, 2015**

Research Internship with Michel Rudnianski

- Established some properties of the games associated with Graphs of Deterrence in order to develop inference schemes for the European Commission FP7 research project LEILA.

AWARDS AND ACHIEVEMENTS

- PBEEE Quebec-India PhD Research Scholarship. Awarded to 3 Indian Ph.D. students. *['19 - '21]*
- FRQNT Doctoral Research Award (B2X). Ranked 1 among 10 selected for this award. *['19 - '22]*
- FRQNT International Internship scholarship for a 6-month internship at UIUC, Illinois. *['18]*
- J.A. DeSève Excellence Scholarship, HEC Montréal. Awarded to 1 Ph.D. student every year. *['18]*
- J.A. DeSève Admission Scholarship, HEC Montréal Foundation. *['17]*
- Admission Scholarship, Chair of Game Theory and Management, GERAD & HEC Montréal. *['17]*
- Graduate Research Award (MHRD, India) to pursue Masters at IIT Kanpur. *['16]*
- Merit-cum-Means Scholarship, IIT Kanpur. *['13,'14,'15]*
- 2-month Research Grant, ORT France, Paris. *['15]*
- Secured 3rd position amongst 90 teams in Manthan National Youth Competition, India. *['13]*

ACADEMIC SERVICE

- **Co-organizer**, Dynamic Games and Applications Seminar Series, GERAD *[Oct'20 - April'21]*
- **Reviewer**
  - Operations Research Letters
  - The IEEE Control System Letters
  - IEEE Transactions on Systems, Man, and Cybernetics: Systems.
- **Session assistant** (Information Theory), Allerton Control Conference, Sep'19

TECHNICAL SKILLS

- **Programming Languages** MATLAB, C, Python
- **Other Tools** LaTeX, STATA, YALMIP, CPLEX

SOCIAL INITIATIVES & MENTORSHIP

Workshop, Mathematics and Statistics Help Center, HEC Montral *[April'19 - May'19]*

- Prepared content (lecture notes, handouts, and slides that covered basics of linear algebra and probability theory) for conducting a workshop to help the incoming Master's students, in the field of economics, finance, and quantitative methods in management.

Inclusive Development of Informal Sector Workers *[May'13 - Oct'13]*

Team Project, Citizens for Accountable Governance (CAG)

- Proposed structural layout for registration and grievance redressal of Informal Sector workers.