

Education

- **University of Michigan** Ann Arbor, MI
Ph.D. Candidate (GPA: 3.74) (expected) 2015-2018
- **Indian Institute of Technology, Madras** Chennai, India
B.Tech., M.Tech (GPA: 9.21) 2010-2015

Publications/ Submitted Manuscripts

- **D. Mehta**, G. Ferrer, and E. Olson, *Autonomous navigation in dynamic social environments using multi-policy decision making*, in Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2016. **Featured in IEEE Spectrum's Video Friday**
- **D. Mehta**, G. Ferrer, and E. Olson, *Fast discovery of influential outcomes for risk-aware MPDM*, in Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2017
- **D. Mehta**, G. Ferrer, and E. Olson, *Backprop-MPDM: Faster risk-aware policy evaluation using efficient gradient optimization*, in Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2018
- **D. Mehta**, G. Ferrer, and E. Olson, *C-MPDM: Continuously-parameterized risk-aware MPDM by quickly discovering contextual policies*, submitted to the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2018.
- A. Cunningham, E. Galceran, **D. Mehta**, G. Ferrer, R. Eustice and E. Olson, *MPDM: Multi-policy decision-making from autonomous driving to social robot navigation*, accepted in Development, Testing and Verification of Advanced Driver Assistance Systems, 2017 as a book chapter.
- **D. Mehta** D. Yamparala, *Policy Gradient Reinforcement Learning for Solving Supply-Chain Management Problems*, Proceedings of I-CARE 2014 Proceedings of the 6th IBM Collaborative Academia Research Exchange Conference (I-CARE)

Patents

- *Method And Apparatus For Constructing Informative Outcomes To Guide Multi-Policy Decision Making*: US Provisional Patent as well as PCT application filed (PCT/US2018/022956) March 2017

Invited Talks/ Presentations

- *Autonomous navigation in dynamic social environments using multi-policy decision making* presented at the IEEE/RSJ International Conference on Intelligent Robots and Systems, October 2016.
- *Risk-aware multi-policy decision making for autonomous navigation in dynamic environments* presented at Midwest Robotics Workshop, March 2016.
- *Fast discovery of influential outcomes for risk-aware multi-policy decision making* presented at the IEEE International Conference on Robotics and Automation, June 2017.
- *Algebra for speed arithmetic* presented to high-school students in Mumbai, October 2012.

Leadership

CEO, Lets Be Well Red

September 2013- July 2015

- Let's Be Well Red is an organization whose goal is to eradicate anaemia in India through mobilizing local communities and providing a healthy, tasty and affordable solution in the form of the GudNeSs bar (our product)

- Iterating over product design development cycles coordinating with consultants, dietitians, and our manufacturer.
- Initiated the campaign in the Chennai through IIT Madras National Social Service team and involving various schools across the city.
- Facilitated 10 medical students from Duke University in conducting a successful clinical study aimed at proving the efficacy of the GudNeSs bar.
- Set up a small-scale factory in Rajkot, Gujarat to increase production of the GudNeSs bar.
- Led Let's Be Well Red into the semi-finals of the **International DBS-NUS Social Venture Challenge** where only 12 teams were chosen out of 1186 start-ups all over the world. Also, won a cash prize of INR 50,000 for being among the 10 most impactful start-ups in the **Indo-African Business Venture Contest**. Let's Be Well Red also won the **Duke Start-up Challenge** and received a funding of \$55,000.

Earthquake Relief Drive, Srinagar, India

2006

- Spearheaded a relief drive and coordinated distribution of life saving equipment, clothes and food with army authorities to earthquake victims in Kashmir

Awards & Honors

- **J. Robert Beyster Computational Innovation Graduate Fellowship**, which awarded full tuition, stipend and healthcare for 1 year Ann Arbor, 2017
- **Indiafrica Business Venture Competition - Semi-Finalists** India, 2014
- **DBS-National University of Singapore Social Venture Challenge Asia - Semi-Finalists** Singapore, 2014
- Secured an All India Rank of 353 in IIT-JEE 2010 out of 450,000 candidates
- Secured an All India Rank of 91 in AIEEE, 2010 among 1 million students

Work Experience

- **Student Advisor, Wolverine Venture Fund**, Ross School of Business, University of Michigan, Ann Arbor, MI 2015 – present
 - One of a 20 member team of MBA, PhD and MD students responsible for the deal-flow generation, due-diligence and investment decisions at the Wolverine Venture Fund, the first student-run venture capital fund in the world with \$7M assets under management.
 - Pitched white paper investment theses and helped screen deals for venture capitalists who serve as the Fund's advisors.
- **Graduate Research Assistant, April Lab**, CSE Dept., University of Michigan, Ann Arbor, MI 2015 – present
 - **Thesis:** Autonomous navigation in dynamic uncertain environments. (P.I.: Edwin Olson, Associate Professor at U-M, CEO at May Mobility)
 - Developed novel decision-making framework (Multi-Policy Decision Making) for social navigation including perception pipeline for tracking pedestrians using Lidar data.
 - Developed a novel approach to evaluating closed-loop policies efficiently.
 - Contributed to several field-robotics platforms -
 1. *SquadMATE* - ground and aerial robot companions for localizing and operating with soldiers on the battlefield.
 2. *CyberSees* - monitor methane emissions in solid waste landfills using a mobile robot.
 3. Built a high-level planning and perception system for *SmartCarts* - a transportation service system, allowing students to summon an autonomous car via their phones.

4. *Zippy* - an autonomous mail delivery car for the United States Postal Service. Developed a teach-and-repeat localization system as well as a low-speed path-planner for accurate mailbox alignment.

- **Research Assistant, RISE Lab, Computer Science Dept., IIT Madras, Chennai, India** 2013 – 2015

Policy Gradient Reinforcement Learning for Supply-Chain Management

- Tackled a general stochastic supply-chain management problem by formulating it as a multi-arm non-contextual bandit problem and using policy gradient descent (a Reinforcement Learning approach) to find an optimal buy-plan.
- Won INR 400,000 for submitting the **best solution in the 6-month long national contest**
- Our Technique was accepted for publication and was presented at **IBM's I-CARE 2014**

Business Networking Using Social Networks

- Formulated a realistic agent-centric information propagation model for leveraging social networks like LinkedIn to facilitate efficient business networking.

Structural Trend Analysis and Anomaly Detection on Twitter

- Incorporated structural information of the underlying social network to derive correlated scores as effective predictors for trend analysis and anomaly detection.

- **Research Assistant, CS Dept. Duke University, Durham, NC** 2014 – 2015

Learning Lipschitz Continuous Value Functions for Reinforcement Learning

- Expanded NP-ALP by developing an approximate value iteration algorithm and a homotopy based algorithm for finding optimal Lipschitz continuous value functions to solve continuous state space Markov decision processes.

- **Research Intern, IBM India Research Labs, Bangalore, India** 2013

Inferring Templates From Unformatted Unstructured Data

- Modelled ticket text data arising in various industrial settings, particularly from logs of multiple legacy IT systems.
- Built a generative model for learning the underlying templates which captures the frequent sequential patterns of repeating template terms in the data and designed an approximate inference algorithm to recover the underlying structure to facilitate future diagnostic applications.

Co-Curricular and Extra-Curricular Activities

- Developed a steer-by-wire system with University of **U-M's Solar Car team.** Fall 2016
- Developed infrastructure for an **outreach event on autonomous vehicles and connected infrastructure** at the Michigan Engineering Zone where high school students in Detroit got hands-on experience with programmable toy-sized mobile robots in a connected city. Summer 2016
- Contributed to the MOOL kernel as a part of an open-source operating system (Bharat Operating System Solutions) - a collaboration between CDAC and IIT-M. Spring 2014
- **GSI for 3 courses at IIT Madras** - CS 3310: Paradigms of Programming (Spring 2014), CS 5011: Machine Learning (Fall 2014) and CS 6210: Reinforcement Learning (Spring 2015)