

## EDUCATION

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<b>Harvard University</b> Ph.D., Computer Science, Advisor: Milind Tambe	2020 – Current Cambridge, MA
<b>Birla Institute of Technology and Science, Pilani</b> BE (Hons.), Computer Science – GPA: 9.02/10, Merit Scholarship, Graduated with Distinction	2013 – 2017 Rajasthan, India

## EXPERIENCE

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<b>Harvard University</b> Graduate Research Assistant, Advisor: Prof. Milind Tambe – Conducting research in machine learning and sequential decision-making, especially as it applies to challenges in public health.	2020 – Current Cambridge, MA
<b>Singapore Management University</b> Research Engineer, Advisor: Prof. Pradeep Varakantham – Authored two first-author research papers that use Reinforcement Learning (RL) to address Sequential Decision Making problems that underlie societal challenges in Transportation and Security.	2018 – 2020 Singapore
<b>Microsoft Research India</b> Research Intern, Advisor: Dr. Colin Scott and Dr. Bill Thies – Helped build an Android app that aimed to augment local peer-to-peer file transfer like Bluetooth (a substitute to the internet for media acquisition in low resource communities) by creating a barter economy. Helped pilot the application in a village in Bihar, India along with my advisor and local partners from the region.	Spring 2017 Bangalore, India
<b>Microsoft Research India</b> Research Intern, Advisor: Dr. Sundararajan Sellamanickam – Investigated the 'explainability' of Recurrent Neural Networks in terms of compositional linguistic structures like 'and' and 'but' for the task of Sentiment Analysis in English.	Fall 2016 Bangalore, India
<b>Philips India Ltd.</b> Research Intern, Internal Technology Accelerator – Prototyped the conversation engine for a wearable device to assist the elderly. Helped design an annotation scheme for patient medical records.	Summer 2016 Bangalore, India
<b>National Centre for Polar and Ocean Research</b> Research Intern, Advisors: Dr. Sridhar Jawak – Performed pixel-based supervised and unsupervised learning on hyper-spectral satellite imagery to study the spectral characteristics of supraglacial lakes in the Antarctic.	Summer 2015 Goa, India

## PUBLICATIONS

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\* indicates equal contribution

### Rigorously Reviewed Conference Publications

- [1] K. Wang, S. Verma, A. Mate, **S. Shah**, A. Taneja, N. Madhiwalla, A. Hegde, and M. Tambe, “Decision-focused learning in restless multi-armed bandits with application to maternal and child care domain”, *Thirty-Seventh AAAI Conference on Artificial Intelligence*, 2023.
- [2] **S. Shah**, B. Wilder, A. Perrault, and M. Tambe, “Decision-focused learning without decision-making: Learning locally optimized decision losses”, *Advances in Neural Information Processing Systems*, Dec. 2022.
- [3] **S. Shah**, M. Lowalekar, and P. Varakantham, “Joint Pricing and Matching for City-Scale Ride-Pooling”, in *International Conference on Automated Planning and Scheduling (ICAPS)*, 2022.
- [4] K. Wang, **S. Shah**, H. Chen, A. Perrault, F. Doshi-Velez, and M. Tambe, “Learning MDPs from Features: Predict-Then-Optimize for Sequential Decision Problems by Reinforcement Learning”, *Advances in Neural Information Processing Systems*, Dec. 2021.
- [5] J. A. Killian, A. Biswas, **S. Shah**, and M. Tambe, “Q-Learning Lagrange Policies for Multi-Action Restless Bandits”, in *Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining*, 2021, pp. 871–881.
- [6] N. Raman, **S. Shah**, and J. Dickerson, “Data-Driven Methods for Balancing Fairness and Efficiency in Ride-Pooling”, in *Proceedings of the Thirtieth International Joint Conference on Artificial Intelligence, IJCAI-21*, International Joint Conferences on Artificial Intelligence Organization, Aug. 2021, pp. 363–369.
- [7] **S. Shah**, M. Lowalekar, and P. Varakantham, “Neural Approximate Dynamic Programming for On-Demand Ride-Pooling”, in *Proceedings of 34rd AAAI Conference on Artificial Intelligence (AAAI)*, New York, 2020, pp. 507–515.
- [8] **S. Shah**, A. Sinha, P. Varakantham, A. Perrault, and M. Tambe, “Solving Online Threat Screening Games using Constrained Action Space Reinforcement Learning”, in *Proceedings of 34rd AAAI Conference on Artificial Intelligence (AAAI)*, New York, 2020.

### Demonstrations

- [9] A. Kumar, **S. Shah**, M. Lowalekar, P. Varakantham, A. Ottley, and W. Yeoh, “FairVizARD: A Visualization System for Assessing Fairness of Ride-Sharing Matching Algorithms”, in *International Conference on Automated Planning and Scheduling (ICAPS)*, 2021.

## TEACHING

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- **Teaching Fellow**, Harvard University Fall 2021  
*CS 120: Algorithms and their Limitations*  
–This was the first offering of the course. Helped design the course, managed undergraduate course assistants and course logistics, lead section, held office hours, designed and graded problem sets.