

CONTACT INFORMATION	Laboratory for Information and Decision Systems Massachusetts Institute of Technology 77 Massachusetts Avenue, 32-D570 Cambridge, MA 02139 Tel: +1 608-886-3400	Homepage: https://sshah95.github.io Linkedin: www.linkedin.com/in/sshah95 ✉ E-mail: sshah95@mit.edu
RESEARCH INTERESTS	<p>Information Design: Using information design in dynamic settings to shape strategic agent behavior. Applications to ride-hailing markets, pandemic recovery, corporate strategy.</p> <p>Machine Learning for Algorithms: Developing algorithms that smoothly trade-off robust guarantees with machine learning precision. Applications to matching markets and secretary problem.</p> <p>Online Matching Algorithms: Applications to ad auctions, ride-hailing and data markets.</p> <p>Other: Prophet Inequalities, Matroid Optimization, Stochastic Probing, Mechanism Design, Data Markets, Multi-agent reinforcement learning, Learning in games.</p>	
EDUCATION	<p>Massachusetts Institute of Technology, Cambridge, MA 2018–2023 (expected)</p> <ul style="list-style-type: none"> • Ph.D. in Operations Research, GPA: 5.00/5.00 • Advisors: Prof. Patrick Jaillet and Prof. Saurabh Amin. <p>University of Wisconsin - Madison, Madison, WI. 2013–2017</p> <ul style="list-style-type: none"> • B.S. with Comprehensive Honors, GPA: 4.00/4.00 • Majors: Mathematics, Computer Science, Economics & Chemistry 	
TECHNICAL SKILLS	<p><i>Programming Languages:</i> C, C++, Python, Java, Kotlin, Julia, x86 Assembly, Scala</p> <p><i>Analysis Tools:</i> MATLAB, R, VBA, Stata, Mathematica, SQL</p> <p><i>Technical Softwares:</i> OpenCV, Simulink, TensorFlow, Keras, sklearn, Apache Spark, Apache MXNet, Apache Avro, Spring, Docker, git</p> <p><i>AWS:</i> S3, DynamoDB, Lambda, Glue, Athena, Redshift, EMR, EC2, Kinesis, SQS, Quicksight, Sagemaker, Step Functions, CloudFormation, CloudWatch, Machine Learning, Batch</p> <p><i>Typesetting:</i> L^AT_EX, Microsoft Office</p>	
SELECTED PUBLICATIONS	<ol style="list-style-type: none"> 1. Shah, S., Amin, S., and Jaillet P. (2021) Adaptively Provisioning Information to Manage Strategic Relocators. <i>In Submission - Transportation Science</i>. 2. Hameister, T., Shah, S., Schneider, N., Fricker, E., and Craciun G. (2018) Minimal Attracting Regions for Reversible Mass-Action Systems. <i>In Submission</i>. 3. Shah, S., Benson, M. C., Bishop, L. M., Huhn, A. M., Ruther, R. E., Yeager, J. C., Tan, Y., Louis, K. M., and Hamers, R. J. (2012) Chemically assembled heterojunctions of SnO₂ nanorods with TiO₂ nanoparticles via “click” chemistry. <i>Journal of Materials Chemistry</i> 22, 11561–11567. 	
TEACHING EXPERIENCE	Network Science (Rating: 6.7/7.0)	Spring 2021
HONORS AND AWARDS	<p>National Science Foundation Graduate Research Fellow 2019-2022</p> <p>Barry M. Goldwater Scholar 2015-2017</p> <p>Mary Claire Phipps Scholarship in Economics 2015-2017</p> <p>Charles Wurth Scholarship 2013-2017</p> <p>Top 200 in Putnam Competition 2015</p>	

David Durra Scholarship	2015
Draminski Scholarship in Economics	2015-2016
Hilldale Undergraduate Research Fellowship	2014-2015
Phi Beta Kappa	2014
SPIE Optics and Photonics Scholarship Winner	2013
Intel Science Talent Search Semifinalist	2013
Siemens Competition Regional Finalist	2013
Academic Excellence Scholar	2013
United States of America Mathematical Olympiad Finalist	2011-2013

**WORK
EXPERIENCE**

Applied Scientist Intern at Amazon CoreAI	06/2020–08/2020
<ul style="list-style-type: none"> • Developed machine learning models to predict click-thru rates for all ASINs on Amazon.com • Developed discrete choice model to learn heterogeneous consumer preferences and optimize selection of ASINs provided on short-term Amazon stock 	
Machine Learning/Software Development Engineer at Amazon	06/2017–08/2018
<ul style="list-style-type: none"> • Developed machine learning models to predict shipping costs and other shipment metrics in real-time • Developed workflow to continuously retrain machine learning models and vend predictions at production-scale to various teams at Amazon including the retail website and personalization teams • Designed and implemented new data-driven strategies to reduce Amazon’s fulfillment costs such as strategically modifying the loads on fulfillment centers using machine learning and optimization • Built one of the largest data pipelines in the world using various big data technologies to process each individual fulfillment made by Amazon, render them into meaningful observations, generate analyses, and vend all data to teams across Amazon 	
Research Analyst Intern at The Brattle Group	06/2016–08/2016
<ul style="list-style-type: none"> • Developed forecasting models to predict electric load patterns of future transportation paradigms involving electric vehicles and autonomous vehicles • Analyzed fraudulent behavior from energy sellers that attempted to conceal market manipulation during California Energy Crisis 	

**RELEVANT
GRADUATE
COURSEWORK**

Mathematics
<ul style="list-style-type: none"> • Analysis, Manifolds
Statistics and Probability
<ul style="list-style-type: none"> • Fundamentals of Probability, Inference and Information, Algorithms for Inference, Statistical Learning Theory, High-Dimensional Statistics
Optimization
<ul style="list-style-type: none"> • Linear Optimization, Nonlinear Optimization, Algebraic Techniques and Semidefinite Programming
Other
<ul style="list-style-type: none"> • Network Science, Game Theory, Theory of Operations Management, An Algorithmist’s Toolkit, Mechanism Design, Algorithmic Game Theory

Innovations in Theoretical Computer Science Conference (ITCS) (Reviewer)

Machine Learning Across MIT (Committee Chair)

- Head of organization that serves and connects all 500+ graduate machine learning researchers at MIT
- Organize, select and curate the Machine Learning Tea Seminars across the university
- Create events and resources to encourage collaboration and networking across MIT machine learning community

Ashdown Graduate House (Inventory Officer)

- Manage community resource inventory for graduate community and organize several events for graduate student residents

Laboratory for Information and Decision Systems (Tea Talk Committee)

- Organize, select and curate the Tea Talk Seminars within the lab

American Chemical Society - Student Chapter (President)

- Organized several career-building, academic and research oriented events for student body
- Interfaced with faculty as we organized the direction of the organization