

Aditya Deshmukh

CONTACT INFORMATION	Emails: ad11@illinois.edu aditya.deshmukh78@gmail.com Websites: adityadeshmukh.github.io Google Scholar LinkedIn	
RESEARCH INTERESTS	Statistical Inference, Machine Learning, Reinforcement Learning, Data Compression, Optimization & Information Theory	
EDUCATION	University of Illinois at Urbana-Champaign (UIUC) <i>Ph.D. in Electrical and Computer Engineering</i> <ul style="list-style-type: none">• Advisor: Venugopal Veeravalli• Thesis Committee: Venugopal Veeravalli, Maxim Raginsky, Pierre Moulin, Georgios Fel-louris	Aug 2017 – Dec 2023 3.97/4.0
	Indian Institute of Technology Madras (IIT Madras) <i>B.Tech. and M.Tech. in Electrical Engineering</i> <ul style="list-style-type: none">• Advisor: Srikrishna Bhashyam	2012 – 2017 8.81/10.0
PROFESSIONAL EXPERIENCE	Amazon Inc. Remote – Research Scientist Intern <ul style="list-style-type: none">• Identified relevant features and implemented machine learning models for the problem of online defect identification to improve output of Alexa’s NLP model	May - Aug 2021
	Tata Institute of Fundamental Research (TIFR) Mumbai – Junior Research Fellow <ul style="list-style-type: none">• Conducted research under the guidance of Rahul Vaze on the problem of online energy-efficient packet scheduling	May – July 2015
	Phasorz Technologies Chennai – Android Development Intern <ul style="list-style-type: none">• Developed ‘DocsApp’ (now MediBuddy) - an android based messaging and consulting platform for patients and doctors	March – July 2014
FELLOWSHIPS & ACHIEVEMENTS	<ul style="list-style-type: none">• Mavis Future Faculty Fellowship (conferred by UIUC) 2021• Joan and Lalit Bahl Fellowship (conferred by UIUC) 2021,2022• Dr. Ok Kyun Kim Fellowship (conferred by UIUC) 2019• All India Rank 599 in IIT-JEE among half million applicants 2012• Selected for KVPY Scholarship (SX Stream) by IISc 2011	
JOURNAL PUBLICATIONS & PREPRINTS	<ul style="list-style-type: none">• <u>Distributed and Adaptive Feature Compression using VQ-VAEs</u> A. Deshmukh, V. Veeravalli, and G. Verma <i>under preparation</i>• <u>Robust Mean Estimation in High Dimensions: An Outlier Fraction Agnostic and Efficient Algorithm</u> A. Deshmukh, J. Liu, and V. Veeravalli [arXiv] <i>IEEE Transactions on Information Theory</i> (2023)• <u>Information Flow Optimization for Estimation in Linear Models Using a Sensor Network</u> A. Deshmukh, J. Liu, V. Veeravalli, and G. Verma [IEEE Xplore] <i>IEEE Signal Processing Letters</i> (2023)	

	<ul style="list-style-type: none"> • <u>Sequential controlled sensing for composite multihypothesis testing</u> A. Deshmukh, S. Bhashyam, and V. Veeravalli [arXiv] <i>Sequential Analysis</i> (2021) • <u>Online Energy-Efficient Packet Scheduling for a Common Deadline With and Without Energy Harvesting</u> A. Deshmukh and R. Vaze [arXiv] <i>IEEE Journal on Selected Areas in Communications</i> (2016)
CONFERENCE PROCEEDINGS	<ul style="list-style-type: none"> • <u>Robust High-Dimensional Linear Discriminant Analysis under Training Data Contamination</u> Y. Shi, A. Deshmukh, Y. Mei, and V. Veeravalli [IEEE Xplore] <i>IEEE International Symposium on Information Theory</i> (ISIT 2023) • <u>Robust Mean Estimation in High Dimensions: An Outlier Fraction Agnostic and Efficient Algorithm</u> A. Deshmukh, J. Liu and V. Veeravalli [IEEE Xplore] <i>IEEE Int. Symposium on Information Theory</i> (ISIT 2022) • <u>High-dimensional robust mean estimation via outlier-sparsity minimization</u> A. Deshmukh, J. Liu, and V. Veeravalli [IEEE Xplore] <i>55th Asilomar Conference on Signals, Systems, and Computers</i> (Asilomar 2021) • <u>Information Flow Maximization in Inference Networks</u> A. Deshmukh, J. Liu, and V. Veeravalli [arXiv] <i>IEEE International Conference on Acoustics, Speech, and Signal Processing</i> (ICASSP 2020) • <u>Controlled Sensing for Composite Multihypothesis Testing with Application to Anomaly Detection</u> A. Deshmukh, S. Bhashyam, and V. Veeravalli [IEEE Xplore] <i>52th Asilomar Conference on Signals, Systems, and Computers</i> (Asilomar 2018) • <u>Online energy efficient packet scheduling with a common deadline</u> A. Deshmukh and R. Vaze [IEEE Xplore] <i>International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks</i> (WiOpt 2016)
TEACHING & MENTORING EXPERIENCE	<p>Teaching Assistant</p> <p>6 semesters at UIUC and 2 semesters at IIT Madras</p> <ul style="list-style-type: none"> • UIUC: Data Science and Engineering (ECE365), Introduction to Optimization (ECE490), Statistical Inference for Engineers and Data Scientists (ECE561), Computational Inference (ECE566) • IIT Madras: Communication Systems (EE3005), Communication Networks (EE5150) <p>Undergraduate Mentor</p> <ul style="list-style-type: none"> • Naman Raina: ‘Robust Estimation’ • Kevin Zhang: ‘Distributed Feature Compression’
PROFESSIONAL SERVICE	<p>Reviewer</p> <ul style="list-style-type: none"> • Conferences: ISIT (2019, 2022, 2024) • Journals: IEEE Transactions on Signal Processing (2020, 2021), IEEE Transactions on Information Theory (2020, 2022)
PROGRAMMING SKILLS	Python (including PyTorch, scikit-learn), C, Java, MATLAB