

# Kulin Shah

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## EDUCATION

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### University of Texas at Austin

Ph.D. in Computer Science

Advisors: [Prof. Qiang Liu](#) & [Prof. Adam Klivans](#)

August 2021 -

### International Institute of Information Technology, Hyderabad

B. Tech (Honors) in Computer Science and Engineering

Advisor: [Prof. Naresh Manwani](#)

August 2015 - July 2019

## PUBLICATIONS

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### Debiased Dynamic Stochastic Gradient Aggregation for Learning with Multiple Objectives

Mao Ye, **Kulin Shah**, Qiang Liu

Under Review

### Learning and Generalization in Overparameterized Normalizing Flows

[\[pdf\]](#)

**Kulin Shah**, Amit Deshpande, Navin Goyal

International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2022.

Workshop on the Theory of Overparameterized Machine Learning (**TOPML**), 2021.

### RISAN: Robust Instance Specific Deep Abstention Network

[\[pdf\]](#)

Bhavya Kalra, **Kulin Shah**, Naresh Manwani

Conference on Uncertainty in Artificial Intelligence (**UAI**), 2021 (**Oral**).

### Rawlsian Fair Adaptation of Deep Learning Classifiers

[\[pdf\]](#)

**Kulin Shah**, Pooja Gupta, Amit Deshpande, Chiranjib Bhattacharyya

AAAI/ACM Conference on AI, Ethics, and Society (**AIES**), 2021.

### Online Active Learning for Reject Option Classifier

[\[pdf\]](#)

**Kulin Shah**, Naresh Manwani

AAAI Conference on Artificial Intelligence (**AAAI**), 2020 (**Oral**).

### Sparse Reject Option Classifier using Successive Linear Programming

[\[pdf\]](#)

**Kulin Shah**, Naresh Manwani

AAAI Conference on Artificial Intelligence (**AAAI**), 2019 (**Oral**) .

### PLUME: Polyhedral Learning Using Mixture of Experts

[\[pdf\]](#)

**Kulin Shah**, PS Sastry, Naresh Manwani

### Ingredients for Happiness: Modeling Constructs via Semi-supervised Content Driven Inductive Transfer

[\[pdf\]](#)

Bakhtiyar Syed, V. Indurthi, **Kulin Shah**, Manish Gupta and Vasudeva Varma

AAAI-19 Workshop on Affective Content Analysis, AFFCON-19 (**Runner-up** for CL-Aff shared task).

## RESEARCH EXPERIENCE

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### Graduate Research Assistant, University of Texas at Austin

Aug 2021 - Present

- Advisor: [Prof. Qiang Liu](#) and [Prof. Adam Klivans](#)
- Working on problems in generative models, compression, theory of deep learning, reinforcement learning.

### Research Fellow, Microsoft Research, India

Aug 2019 - July 2021

- Mentor: [Dr. Navin Goyal](#) and [Dr. Amit Deshpande](#)
- Worked on problems in generative models, representation learning, theory of deep learning.

### Research Intern, Microsoft Research, India

May 2019 - July 2019

- Mentor: [Dr. Amit Deshpande](#) and [Prof. Chiranjib Bhattacharyya](#)
- Worked on problems related to fairness in machine learning.

**Research Intern, Indian Institute of Science (IISc), Bangalore**

May 2018 - June 2018

- Mentor: [Prof. PS Sastry](#)
- Worked towards understanding architecture and training dynamics of Capsule Network.

**Undergraduate Researcher, Machine Learning Lab, IIIT Hyderabad**

May 2017 - May 2019

- Mentor: [Dr. Naresh Manwani](#)
- Worked on research problems related to reject option classification, online learning, multi-armed bandit, polyhedral learning, explainability.

## AWARDS AND ACHIEVEMENTS

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- Awarded **Google, Microsoft Research** travel grant and **AAAI Student Scholarship** to attend **AAAI** 2019.
- Awarded **Research Award** for exceptional research work at IIIT Hyderabad.
- Received perfect **10 GPA** in Spring 2018 semester.
- Awarded **Dean's List** award for excellent academic performance in Spring 2016, Spring 2017 and Spring 2018 semesters.
- **34 rank** in India in online round of ACM ICPC programming contest, 2018 (Total 3000+ teams)
- **53 rank** in Amritapuri regional of ACM ICPC programming contest, 2017 (Total top 260 teams from India).

## POSITIONS

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- Teaching Assistant:
  - ◊ Honors Data mining - *Prof. Adam Klivans* Spring 2022
  - ◊ Linear Algebra - *Prof. Naresh Manwani & Prof. Prasad Krishnan* Spring 2019
  - ◊ Statistical Methods in AI - *Prof. Naresh Manwani* Spring 2018
  - ◊ Algorithms - *Prof. Pawan Kumar* Fall 2017
- Reviewer: AISTATS 2023, AISTATS 2022, ICLR 2022

## RELEVANT COURSES

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Generative Models & Multiobjective optimization	Reinforcement Learning
Topics in Machine Learning (Online Learning & Bandits)	Statistical Methods in AI
Optimization Methods	Autonomous Robots
Game Theory	Computer Vision
Adv. Probability (Concentration, Stein's Method, Mean-field theory)*	Functional Analysis