Ameya Anjarlekar

Urbana, IL

Personal Webpage | ameyasa2@illinois.edu | linkedin.com/in/ameyanjarlekar | Google Scholar

Education

University of Illinois at Urbana-Champaign — **Research Advisor: R. Srikant**
PhD in Electrical and Computer Engineering ; ***GPA: 3.94/4*** — *(08/2022-present)*

Indian Institute of Technology, Bombay — **Mumbai, India**
Bachelor of Technology in Electrical Engineering (with minor in Computer Science); ***CPI: 9.64/10*** — *(08/2017-05/2021)*

Relevant Publications

- **Anjarlekar, A.**, Etesami, R., & Srikant, R. (2023). Striking a Balance: An Optimal Mechanism Design for Heterogenous Differentially Private Data Acquisition for Logistic Regression. (submitted to AAAI 24)
- **Ameya Anjarlekar** and Ajit Rajwade, "A weighted generalized coherence approach for sensing matrix design,"

Research Experience

Graduate Research Assistant, UIUC — **(08/2022-present)**

- Introduced an innovative payment mechanism that incentivizes privacy-sensitive data providers to contribute their data for machine learning (ML) model training while ensuring that the data remains differentially private
- Designed an algorithm that ensures heterogeneous **differential privacy** for our ML model. This was ideated by mathematically modeling the classification loss appropriately using tools from statistical learning
- Formulated and optimized an objective that appropriately trades off between getting better classification accuracy for the machine learning model and reducing the payments made to the data providers

Bachelors Thesis — **(08/2020 - 10/2021)**

- Developed and implemented an optimized binary sensing matrix using an innovative weighted generalized coherence based metric for efficient group testing of COVID-19 resulting in better prediction accuracy

IIT Bombay Mars Rover Team — **(08/2018 - 12/2019)**

- Created an object detection AI framework using python required for the autonomous operations of the mars rover robot by developing a computer vision algorithm using transfer learning resulting in 93% accuracy
- Collaborated with other sub-teams for smooth integration of our deep learning model with the robotic interface

Industrial Experience

Quadeye Securities — **(06/2021 - 06/2022)**
Quantitative Researcher — *Gurgaon,India*

- Handled the responsibility of improvement and successful operations of trading strategies in 3 regions
- Worked on arbitrage-derived strategies to design high-frequency trading algorithms in the derivatives segment

Daikin Industries — **(06/2020 - 07/2020)**
Machine Learning Research Scientist Intern

- Achieved **70% video data compression** by developing a Hitomi Camera-inspired image processing algorithm
- Highlighted around 60% cost-saving after using the compression algorithm by performing economic analysis

Other Projects

- **VAE-GANs for Compressive Medical Image Recovery:** Implemented a generative AI model using pytorch for probabilistic compressive image recovery of undersampled bio-medical images
- **Compressed Sensing using Deep Image Prior:** Used sampling and **rectified sparse Bayesian** based learning techniques for training machine learning model which was then used as a prior for compressed sensing

Technical Skills and Interests

Skills: Python, C, C++, ROS, Pytorch, Tensorflow, Bash, Data Structures, Data Science, Artificial Intelligence
Research Interests: Differential Privacy, Game Theory, Deep Learning, Machine Learning, Computer Vision

Miscellaneous

- Conducted office hours to solve doubts as a TA for **ECE 490** (Introduction to Optimization)
- Awarded **Undergraduate Research Award** (URA-01) by IIT Bombay for innovative research contribution
- Completed 1 year rigorous **National Cadet Corps** (youth wing of the Indian Army) training