Aditya Rastogi

Education	M.Tech in Computer Science and Engineering, Indian Institute of Technology, Kharagpur May 2021 (Expected) GPA 9.53/10
	B.Tech in Computer Science and Engineering, Indian Institute of Technology, Kharagpur May 2020 GPA 9.46/10

Internships

Summer Intern, Goldman Sachs Bangalore, India   May'20-Jun'20
- Developed an end-to-end system to classify tickets received through emails, using multiple tf-idf based regression and decision-tree based classifiers, for various product spaces.

Visiting International Research Student, University of British Columbia, Vancouver, Canada   May'19-Jul'19
Mentor: Prof. Matei Ripeanu
- Developed a pipeline to maximize lateral work reuse in the problem of approximate pattern matching in graphs in a distributed systems setting.
- Worked with node2vec and visualized the changes in neighbourhood node embeddings while injecting specific patterns in them.

Visiting Student Researcher, University of Sydney, Camden Campus, Sydney, Australia Dec'18-Jan'19
Mentor: Dr. Mehar Khatkar
- Designed and compared different deep learning pipelines for detecting facial landmarks in different fish species, as a part of automatic monitoring of health of fishes in aquariums.

Summer Intern, IIT Kharagpur, Kharagpur, India   May'18-Jul'18
Mentor: Prof. Swanand Khare
- Developed a python application to demonstrate the rejection sampling technique.
- Worked on dimensionality reduction using PCA for sensor anomaly detection and observed clusters in the time-series data.

Relevant Projects

M.Tech Project, Improvements in Learning using Attention
Advised by Prof. Partha Pratim Chakrabarti and Dr. Aritra Hazra
- Increased the accuracy of self supervised models by incorporating unsupervised visual saliency in the data augmentation pipeline. (Publication in progress)
- Developed a novel algorithm that uses visual explanations from GradCAM to come up with a hierarchy of relevant sections in the input, using which deep learning models can be made more robust.

B.Tech Project, Deep Learning - Self Supervised Learning, Explainability and Robustness
Advised by Prof. Partha Pratim Chakrabarti and Dr. Aritra Hazra
- Discussed class-invariant mutations for out-of-distribution detection, and implemented various existing techniques for OOD detection.
- Experimented with techniques like reducing color depth as a defense against adversarial examples.

Virtual Avatar Creation for Video Conferencing Systems
- Developed a python application which creates your virtual avatar using facial landmarks and appearance-based gaze estimation, for use in real-time video conferencing systems. Compared the latency and performance of the developed model with the first-order motion model paper.

Medium Blog Writer
- Reproduced the SimCLR and MoCo-V2 self supervised algorithms on Fast.AI datasets.
- Wrote articles on saliency maps; policy iteration and Monte Carlo control in Reinforcement Learning.
- Wrote a detailed article on the GNU Toolchain.

Technical Skills

C, C++, Python, JavaScript, PyTorch, Linux