Lakshay Virmani

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Education

Carnegie Mellon University, College of Engineering **Jan 2022 - Present**
Master of Science in Electrical and Computer Engineering — GPA: 4.0 *Pittsburgh, PA, US*
- Relevant Coursework: Intro to Machine Learning, Intro to Deep Learning, and Data, Inference and Applied ML.

University of Delhi, Netaji Subhas Institute of Technology **Aug 2014 - June 2018**
Bachelor of Engineering in Information Technology — GPA: 4.0 — First Class with Distinction *Delhi, India*
- Relevant Coursework: Design and Analysis of Algorithms, System Analysis and Design, and Operating Systems.

Experience

Voaige Inc. **May 2022 – Present**
Computer Vision Research Intern *Pittsburgh, PA, US*
- Applied self-supervised anomaly detection techniques to construct a part inspection system for zero-shot and few-shot environments.
- Guided the perception team to code and assemble different components for *robotic grasping* to be used in bin picking, palletizing, and spray painting.
- Composed an MLOps pipeline encouraging use of best practices to test, deploy, manage, and monitor ML models.

Khatabook **Sep 2019 – Nov 2021**
Senior Software Development Engineer *Bengaluru, KA, IN*
- Collaborated with Product, Marketing and Operations team to build a highly reliable data platform and scaled it from loading 100k to **100M** rows of data per day.
- Implemented a data lake architecture resulting in annual savings of over **$250k** and a *30%* drop in average query execution time.
- Organized a central data repository using *MongoDB* and *Elasticsearch* (AWS OpenSearch) containing a catalogue of products from all over India being reused by multiple services across the platform.
- Led the data due diligence efforts during the Series B funding round, provided critical insights to the investors, and helped the firm raise over **$60M**.

Amazon **June 2018 – Aug 2019**
Software Development Engineer *Hyderabad, TS, IN*
- Improved the platform onboarding time by **85%** (from *4 hours* to *35 minutes*) by developing a feature which enabled the clients to setup their complete service infrastructure in a single click.
- Eliminated the operational burden of **800 man-hours/year** by refactoring the scaling automation to produce a fault-tolerant workflow equipped with service health checks and retry mechanisms.
- Designed the frontend & backend of progress tracking features for automations to provide better visibility to the customers.

Software Development Engineer Intern **May 2017 – July 2017**
- Received **Amazon Inventor's Award** for implementing and patenting a novel stream-based algorithm which improved the runtime of AWS Elastic Map Reduce service by over **25%**.

Projects

Carnegie Mellon University **May 2021 – May 2022**
Graduate Research Assistant | Advisor: Dr. Howie Choset *Pittsburgh, PA, US*
- Demonstrated the benefits of using attention based supervised learning to improve the efficacy of multi-agent path finding algorithms [video][arxiv].

Indraprastha Institute of Information Technology Delhi **Aug 2017 – Mar 2018**
Undergraduate Research Intern | Advisor: Dr. A.V. Subramanyam *Delhi, India*
- Formulated an end-to-end model and evaluation metric for unsupervised image collection summarization. Work led to first author publication at BigMM 2019 where it won **Honourable Mention Award** [poster][ppt].

Skills

Programming Languages: Python, Java, C++, SQL
Frameworks: PyTorch, Elasticsearch, Spring
Tools: Apache Airflow, Apache Kafka, Tableau, AWS Elasticsearch, AWS EC2, Docker, Kubernetes, Git