

# 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

- Researched and applied **self-supervised** anomaly detection techniques to help design and construct a visual part inspection pipeline under the zero-shot and few-shot regimes.
- Guided the perception team to code and test different components of **robotic grasping** for applications like bin-picking and palletizing.
- Composed and implemented an **MLOps pipeline** following industry best practices to test, deploy, manage, and monitor ML models for internal company-wide use.

### 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 that 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 frontend and backend of progress tracking features for the automated workflows 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