

# AASHISH MUKUND

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## EDUCATION

### University of Colorado Boulder (Matriculating)

Boulder, CO

Master of Science in Computer Science (GPA- 3.97/4)

Aug. 2023 – May 2025

TA: CSCI 2400 (Fall 2023 and Spring 2025), CSCI 2700 (Spring 2024 and Fall 2024) RA: Earth Lab

### R.V. College of Engineering

Bengaluru, India

Bachelors in Computer Science and Engineering (GPA- 8.91/10)

Aug. 2016 – May 2020

## EXPERIENCE

### Image and Video Computing Group

CU Boulder, CO

Research Group Member (Advisor - Dr. Danna Gurari)

Jan. 2024- Dec. 2024

- Built attention maps to identify when and why models reason based on incorrect visual evidence for VQA.
- Evaluated the performance of both proprietary and open-source VLMs in handling question ambiguity.

### Earth Lab, CIRES

CU Boulder, CO

Graduate Research Assistant

June 2024-Aug. 2024

- Worked with Sentinel-2 satellite data and leveraged advanced ML techniques, including MESMA, to predict fuel status in Southern California at high resolution. Setup pre-processing pipeline for Sentinel-2 data using AWS.
- Facilitated pure-pixel data collection from Sentinel 2 satellite imagery to build custom spectral library.

### Walmart Global Tech

Bengaluru, India

Software Engineer II / Software Engineer III

Aug. 2020-Apr. 2023

- Optimised memory management of the Splunk forwarder Docker container on a large-scale of virtual machines.
- Optimised container resource usage and improved container governance by POC on Docker container constraints.
- Lead migration activities between store and cloud VMs saving 1.25M\$ in cloud cost by migrating away from cloud.
- Experience with Linux, Microsoft Azure Cloud as a PaaS, Azure IoT Edge, CI/CD pipelines and Kubernetes.

### Indian Institute of Science (IISc RBCCPS)

Bengaluru, India

Research Intern (Advisor - Dr. Raghu Krishnapuram)

Dec. 2019-June 2020

- Generated RGBD dataset from simulations of turtlebot3 on Gazebo simulation software for 3D reconstruction.
- Implemented Microsoft's Kinect Fusion for 3D Mapping, PointNet++ model for 3D Segmentation and ScanComplete model for building a complete 3D model from an incomplete scene.

## PUBLICATIONS

Keerthan, **Aashish Mukund**, Nagaraj, Prakash, "U-shaped Transformers for 3D Lung Cancer Segmentation", International Conference on Knowledge Engineering and Communication Systems 2022, **IEEE**

[\[link\]](#)

Keerthan, **Aashish Mukund**, Nagaraj, Prakash, "LeafViT: Vision Transformers based Leaf Disease Detection", International Conference on Computational Intelligence and Computer Vision 2022, **Springer**

[\[link\]](#)

## PROJECTS

### Attention Visualization as Evidence For VQA (Independent Study)

Aug.- Dec. 2024

- Implemented a Grad-CAM based approach for visualizing attention in Visual Question Answering.
- Deployed backend on Hugging Face Spaces (Gradio app) and hosted frontend (HTML/CSS/JS) on GitHub Pages.

### LoRA in Medical VQA on Pathology Images (NLP Final Project)

Feb.- Apr. 2024

- Optimized BLIP for Visual Question Answering (VQA) while reducing computational overhead using LoRA.
- Model demonstrated 33.55% increase in accuracy on yes/no questions compared to the non-finetuned version.

## TECHNICAL SKILLS

**Languages:** Python, C++, MATLAB, SQL, Java **Frameworks:** PyTorch, TensorFlow, Keras, Flask, OpenCV

**Developer Tools:** Git, Docker, Visual Studio, Postman