

# AASHISH MUKUND

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## EDUCATION

### University of Colorado Boulder (Matriculating)

Boulder, CO

*Master of Science in Computer Science*

*Aug. 2023 – May 2025*

**Coursework:** Recent Advances in Computer Vision, NLP **TA:** CSCI 2400, CSCI 2700 **RA:** Earth Lab

### R.V. College of Engineering

Bengaluru, India

*Bachelors in Computer Science and Engineering*

*Aug. 2016 – May 2020*

## EXPERIENCE

### Image and Video Computing Group

CU Boulder, CO

*Research Group Member (Advisor - Dr. Danna Gurari)*

*Jan. 2024- Present*

- Building attention maps to identify when and why models reason based on incorrect visual evidence for Visual Question Answering. Analysing both unimodal and bimodal approaches for visualising attention maps.
- Evaluating SOTA Vision-Language Models on the VizWiz-VQA dataset and analysing their explainability.

### Earth Lab, CIRES

CU Boulder, CO

*Graduate Research Assistant*

*June 2024-Aug. 2024*

- Used satellite data and advanced ML techniques to predict fuel status in southern California at high resolution.
- 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

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

*Feb.- Apr. 2024*

- Applied Low-Rank Adaptation on the BLIP model in medical visual question answering on PathVQA dataset.
- Obtained a BLEU score of 0.6 after fine-tuning the LLM and increased the inference speed by 300% using LoRA.

### Vision Transformers for Few Shot Localisation (RACV Final Project)

*Sep.- Dec. 2023*

- Trained and tested the DE-ViT model (SOTA) for object localisation in images when only few training instances are available from a dataset taken by people who are visually impaired- VizWiz FewShot Localisation Dataset.

## TECHNICAL SKILLS

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

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