

Aneesh Chavan

1st year Computer Science PhD at the University of Virginia

github.com/aneeshc12 | [in Aneesh Chavan](https://www.linkedin.com/in/aneeshchavan) | aneeshc12.github.io | c.aneesh.1203@gmail.com

WORK EXPERIENCE

CRAL, University of Virginia, Graduate Research Assistant Aug 2025 – Present

- Working on robotic intelligence, digital twins and neural implicit representations, advised by **Rohan Chandra**.
- Planned research direction in semantically intelligent systems, robot planning, reducing the real2sim gap and scaling up robot training.

Robotics Research Center, IIIT-H, Undergrad Researcher Aug 2022 – May 2025

- Worked on semantically aware **object re-identification and localization** in cluttered indoor environments, advised by **Madhava Krisna**.
- Worked on loop detection through an end-to-end model using embeddings derived from digital elevation maps.
- Experience **managing a team of 4** junior undergrad researchers and interns on research projects.
- Designed, trained and fine-tuned machine learning models for a variety of **robotics and computer vision tasks**.

Bosch Ltd., Applied Computer Vision Intern May 2024 – July 2024

- Worked with the **ADAS Viper team** on monocular depth estimation.
- Trained and implemented state-of-the-art ML models to predict depth estimates for RGB only ADAS systems.
- Extended and retrained models in use to handle multiple additional camera models. **This codebase is currently in use.**

Mathworks, Research Intern May 2023 – July 2023

- Headed a project with **deep learning team** to operationalise and implement state-of-the-art loop detection and closure methods in the **Mathworks DL framework**.

PROJECTS (SELECTED)

Editable 3DGS-based digital twin training environments (in progress):

Developing a 3DGS-based framework for creating scalable, photorealistic digital twin environments for robot training. Focused on object segmentation, editing, physics interactions, and reducing the sim-to-real gap. Working on automating environment generation with dynamic objects and intelligent agent behaviors. Aiming for publication at a top robotics/CV conference and open-sourcing the framework.

Object instance based re-identification and localisation



Designed a multi-modal network for reliably re-identifying semantically similar but visually distinct objects. Developed a pipeline of vision-language models (VLMs) for zero-shot object extraction from images. Applied the network to create an object-based localization framework for cluttered indoor scenes, improving the state of the art by 38%. Presented orally at AIR '25.

EDUCATION

2025 - 2030 (expected)	PhD (CS) at UVA , advised by Rohan Chandra at CRAL	(GPA : 4.0/4.0)
2020 - 2025	MS + BTech (CS) at IIIT-H , advsd by Madhava Krishna at RRC	(GPA: 8.7/10.0)

PUBLICATIONS

- **A Chavan** et al., "Towards Global Localization using Multi-Modal Object-Instance Re-identification" **Advances In Robotics 2025**, oral presentation.
- S. S. Harithas*, G. Singh*, **A. Chavan**, et al., "**Findernet**: A data augmentation free canonicalization aided **loop detection and closure technique...**" **WACV 2024**, Early acceptance.

SKILLS

Theory	Computer Vision, Machine Learning, Reinforcement Learning, Robotics, Neural Implicit Representations, Large Language Models, Vision Language Models, 3D Vision, Foundational models
Practical	Python, PyTorch, C++, C, CMake, C, Docker, SQL, Technical writing, MLOps