Ram Ramrakhya

Email: rramrakhya3@gatech.edu LinkedIn Google Scholar **EDUCATION** 

Georgia Institute of Technology

Atlanta, GA

Pune, India

M.S in Computer Science (Specialization: Machine Learning) | GPA - 4.0

Aug. 2021 - Present (Expected - May, 2023)

Thesis Advisor: Prof. Dhruv Batra

**Pune Institute of Computer Technology** 

Bachelor of Engineering (Hons.) in Computer Science

Aug. 2015 - June. 2018

AWARDS AND ACHIEVEMENTS

• Awarded CoC Outstanding MS Research Award at Georgia Tech

• Runner up, Habitat ObjectNav challenge organized at Embodied AI workshop CVPR'21

EXPERIENCE

### Mitsubishi Electric and Research Laboratories

Boston, MA

Research Scientist Intern

May 2022 - Aug 2022

• Building Embodied AI agents to solve complex tasks like navigation and rearrangement using 3D scene graphs.

# Georgia Institute of Technology

Atlanta, GA

Graduate Researcher under Prof. Dhruv Batra

Aug 2021 - Present

- o Working on building embodied agents that learn to navigate and interact with the world from humans.
- Published 1 research paper in EmbodiedAI at CVPR 2022 and submitted 2 papers at top tier conferences.

Glance Bangalore, India

Software Development Engineer-2

June 2018 - Aug 2021

- o Vangogher: Built a content creation platform from scratch, built content extraction from web using heuristic based crawlers, and used image captioning models to automated content filtering at scale. The tool helps streamline creation of  $\sim 10,000$  glance stories and saves  $\sim 150$  hours of manual effort by each content designer monthly.
- o Cost Optimization: Worked on optimizing large-scale data pipelines and content serving infrastructure, that serves 150 million users and ingests 10TB data every day to save  $\sim$ 50k\$ in monthly infrastructure cost.

CloudCV Atlanta, GA

Open Source Organization Lead

Jan 2021 - Present

• EvalAI: Led a team of 15+ collaborators to work on EvalAI, an open-source platform to create and participate in AI challenges. Collaborated closely with 30+ organizations including Meta, Google, Amazon, etc to host 200+ AI challenges for top tier AI conferences.

**PUBLICATIONS** 

#### Habitat-Web: Learning Embodied Object-Search Strategies from Human Demonstrations at Scale CVPR 2022, Embodied AI Workshop'2022, Overlooked Aspects of IL Workshop at RSS'2022 (Spotlight Talk) Paper link

- o Proposed Habitat-Web, a web-based infrastructure to connect Habitat simulator, from Facebook AI Research, to Amazon Mechanical Turk which enables collecting human demonstrations for embodied tasks at large scale.
- Using Habitat-Web, we collected largest dataset of human demonstrations for ObjectGoal navigation and Pick&Place tasks. Used large-scale imitation learning on this dataset and showed that it improves state-of-the-art by 3.3%.

## Offline Visual Representation Learning for Embodied Navigation

Under Review

- Proposed a 2-stage visual representation learning framework for embodied agents using self-supervised learning.
- o Our approach improves performance over state-of-the-art for ImageGoal and ObjectGoal navigation tasks by 5-25%.

## Fabrik: An Online Collaborative Neural Network Editor

### AI Systems Workshop, ACM SOSP'19

Paper link

o Proposed a open-source collaborative platform to build, visualize and train deep learning models via a simple drag-anddrop interface.

#### PROJECTS

• Unsupervised Domain Adaptation: Used FixMatch and Time consistency objectives to achieve 4% improvement over the state-of-the-art approach for Unsupervised Domain Adaptation from SVHN to MNIST. PROGRAMMING SKILLS

• Languages: Python, C++, Java Libraries: Pytorch, TensorFlow