# Ram Ramrakhya

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ram81.github.io

## Education

**Georgia Institute of Technology**, Atlanta, GA
*Ph.D. in Computer Science* — Aug 2023 - Present
Advised by Dhruv Batra and Zsolt Kira — (Expected May 2027)

**Georgia Institute of Technology**, Atlanta, GA
*M.S. in Computer Science* — Aug 2021 - May 2023
Advised by Dhruv Batra and Abhishek Das

**Pune Institute of Computer Technology**, Pune, India — Aug 2015 - May 2018
*Bachelor of Engineering in Information Technology*

## Internships

**FAIR, Meta**, Seattle, WA — May 2024 - Present
*Research Intern with Roozbeh Mottaghi*
Working on multi-modal foundation models for embodied agents that collaborate with humans.

**Allen Institute of AI (AI2)**, Seattle, WA — May 2023 - Aug 2023
*Research Intern with Luca Weihs, Kuo-Hao Zeng, and Aniruddha Kembhavi*
Built methods for tidying robots that can reason about object placement based on visual-context and common-sense reasoning in indoor environments.

**Mitsubishi Electric and Research Laboratories**, Boston, MA — May 2022 - Aug 2022
*Resarch Intern with Anoop Cherian*
Worked on indoor semantic navigation using scene graph representations for end-to-end learning.

**Machine Learning and Perception Lab, GT**, Atlanta, GA — April 2020 - July 2021
*Research Intern with Dhruv Batra, and Abhishek Das*
Built Habitat-Web, infrastructure to collect human demonstrations for embodied tasks at scale.
Used it to scale training of indoor semantic navigation agents using IL and RL finetuning.

## Awards

**Georgia Tech Rising Star Doctoral Student Research Award** (1 student from the College) — 2023
**Georgia Tech CoC Outstanding MS Researcher** (1 student from the College) — 2022
**Runner up at Habitat Navigation Challenge** — 2021, 2022

## Publications

[C6] **HM3D-OVON: A Dataset and Benchmark for Open-Vocabulary Object Goal Navigation**
N. Yokoyama*, **R. Ramrakhya***, A. Das, D. Batra, S. Ha
*IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024*

[C5] **Seeing the Unseen: Visual Common Sense for Semantic Placement**
**R. Ramrakhya**, A. Kembhavi, D. Batra, Z. Kira, K. Zeng*, L. Weihs*
*IEEE Computer Vision and Patter Recognition (CVPR), 2024*

[C4] **GOAT-Bench: A Benchmark for Multi-Modal Lifelong Navigation**
M. Khanna*, **R. Ramrakhya***, G. Chhablani, S. Yenamandra, T. Gervet, M. Chang, Z. Kira, D. Chaplot, D. Batra, R. Mottaghi
*IEEE Computer Vision and Patter Recognition (CVPR), 2024*

[C3] **PIRLNav: Pretraining with Imitation and RL Finetuning for ObjectNav**
**R. Ramrakhya**, D. Batra, E. Wijmans, A. Das
*IEEE Computer Vision and Patter Recognition (CVPR), 2023*

[C2] **Habitat-Matterport 3D Semantics Dataset**
K. Yadav*, **R, Ramrakhya***, S. Ramakrishnan*, T. Gervet, J. Turner, A. Gokaslan, N. Maestre, A. Chang, D. Batra, M. Savva, A. Clegg, D. Chaplot
*IEEE Computer Vision and Patter Recognition (CVPR), 2023*

[C1] **Habitat-Web: Learning Embodied Object-Search Strategies from Human Demonstrations at Scale**
**R. Ramrakhya**, E. Undersander, D. Batra, A. Das
*IEEE Computer Vision and Patter Recognition (CVPR), 2022*

**Workshop**

[W4] **Curriculum Learning via Task Selection for Embodied Navigation**
**R. Ramrakhya**, D. Batra, A. Kembhavi, L. Weihs
*Embodied AI Workshop, CVPR 2023*

[W3] **PIRLNav: Pretraining with Imitation and RL Finetuning for ObjectNav**
**R. Ramrakhya**, D. Batra, E. Wijmans, A. Das
*Reincarnating Reinforcement Learning Workshop, ICLR 2023*

[W2] **Offline Visual Representation Learning for Embodied Navigation**
K. Yadav, **R. Ramrakhya**, A. Majumdar, V. Berges, S. Kuhar, D. Batra, A. Baevski, O. Makysmets
*Reincarnating Reinforcement Learning Workshop, ICLR 2023*

[W1] **Habitat-Web: Learning Embodied Object-Search Strategies from Human Demonstrations at Scale**
**R. Ramrakhya**, E. Undersander, D. Batra, A. Das
*Embodied AI Workshop (CVPR 2022), Overlooked Aspects of IL Workshop (RSS 2022)*

**Preprint**

[P2] **ReLIC: A recipe for 64k steps In-Context Reinforcement Learning for Embodied AI**
A. Elawady, G. Chhablani, **R. Ramrakhya**, K. Yadav, D. Batra, Z. Kira, A. Szot
*Under review at NeurIPS 2024*

[P1] **OVRL-v2: Semantic Navigation without Semantic Mapping or Detection**
K. Yadav*, A. Majumdar*, **R. Ramrakhya**, A. Baevski, Z. Kira, O. Makysmets, D. Batra
*arXiv preprint arXiv:2303.07798*, 2023

**Invited Talks**

**Habitat-Web: Embodied Object-Search Strategies from Human Demonstrats at Scale**
*Overlooked Aspects of IL Workshop at RSS* June 2022

**Seeing the Unseen: Visual Common Sense for Semantic Placement**
*University of Washington RAVIN AI/ML Seminar* Jan 2024

**Work Experience**

**Glance**, Bangalore, KA Jun 2018 - Jul 2021
*Software Development Engineer 2*
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.
Worked on optimizing large-scale data pipelines and content serving infrastructure, that serves **150** million users and ingests 10TB data every day to save $\sim$**20k**$ in monthly infrastructure cost.

**CloudCV**, Atlanta, GA Jan 2021 - Jul 2022
*Open Source Organization Lead*
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.

**Open Source Projects**

**Eval.AI [github.com/Cloud-CV/EvalAI]** 2020-2022
Platform to create, collaborate and participate in the AI Challenges organized around the globe.

**Fabrik [github.com/Cloud-CV/Fabrik]** 2018-2020
Collaborative platform to build, visualize and train deep learning models via a simple drag-and-drop interface.

**Professional**

**Workshop Organization**
$5^{th}$ EmbodiedAI Workshop at CVPR 2024
Vision and Language Algorithmic Reasoning Workshop at ICCV 2023

**Challenge Organization**
HomeRobot: Open Vocabulary Mobile Manipulation (OVMM) Challenge at NeurIPS 2023
Habitat Navigation Challenge 2023 at Embodied AI Workshop, CVPR 2023
Habitat Navigation Challenge 2023 at Embodied AI Workshop, CVPR 2022

**Reviewing**

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| International Conference on Machine Learning (ICML) | 2024 |
| International Conference on Learning Representations (ICLR) | 2023, 2025 |
| Neural Information Processing Systems (NeurIPS) | 2023, 2024 |
| IEEE Robotics and Automation Letters (RA-L) | 2023 |

**Advising**

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| Gunjan Chhablani (MS Georgia Tech); Publication [C4] | 2023 |
| Archana Kutumbaka (MS Georgia Tech) | 2023 |
| Google Summer of Code (7 mentors) | 2021 |
| Google Summer of Code (9 undergraduate students) | 2019-2021 |
| Google Code-In (15 high-school students) | 2018-2019 |