

# SRIRAM YENAMANDRA

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## EDUCATION

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<b>PhD in Computer Science</b> Stanford University Research area: <i>Robot Learning</i>	2024-ongoing
<b>MS in Computer Science</b> Georgia Institute of Technology Specialization in <i>Machine Learning</i>	2021-2023 GPA: 4.0/4.0 <i>Thesis Advisor:</i> Prof. Dhruv Batra
<b>B.Tech. in Computer Science &amp; Engineering with Honors</b> Indian Institute of Technology Bombay, Mumbai Minor in <i>Applied Statistics &amp; Informatics</i>	2016-2020 GPA: 9.47/10.0 <i>Thesis Advisor:</i> Prof. Suyash Awate

## PUBLICATIONS

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- **OpenEQA: Embodied question answering in the era of foundation models**  
*Computer Vision and Pattern Recognition (CVPR) 2024*  
A. Majumdar\*, A. Ajay\*, X. Zhang\*, P. Putta, Sriram Yenamandra, M. Henaff, S. Silwal, P. Mcvay, O. Maksymets, S. Arnaud, K. Yadav, Q. Li, B. Newman, M. Sharma, V. Berges, S. Zhang, P. Agrawal, Y. Bisk, D. Batra, M. Kalakrishnan, F. Meier, C. Paxton, A. Sax, A. Rajeswaran
- **GOAT-Bench: A Benchmark for Multi-Modal Lifelong Navigation**  
*Computer Vision and Pattern Recognition (CVPR) 2024*  
M. Khanna\*, R. Ramrakhya\*, G. Chhablani, Sriram Yenamandra, T. Gervet, M. Chang, Z. Kira, D.S. Chaplot, D. Batra, R. Mottaghi
- **GOAT: Go To Any Thing**  
*Robotics: Science and Systems (RSS) 2024*  
M. Chang\*, T. Gervet\*, M. Khanna\*, Sriram Yenamandra\*, D. Shah, S.Y. Min, K. Shah, C. Paxton, S. Gupta, D. Batra, R. Mottaghi, J. Malik, D. Chaplot
- **LANCE: Stress-testing Visual Models by Generating Language-guided Counterfactual Images**  
*Neural Information Processing Systems (NeurIPS) 2023*  
V. Prabhu, Sriram Yenamandra, P. Chattopadhyay and J. Hoffman
- **HomeRobot: Open-Vocabulary Mobile Manipulation**  
*Conference on Robot Learning (CoRL) 2023*  
Sriram Yenamandra\*, A. Ramachandran\*, K. Yadav\*, A. Wang, M. Khanna, T. Gervet, T.Y. Yang, V. Jain, A. Clegg, J. Turner, Z. Kira, M. Savva, A. Chang, D.S. Chaplot, D. Batra, R. Mottaghi, Y. Bisk, C. Paxton
- **FACTS: First Amplify Correlations and Then Slice to Discover Bias**  
*International Conference on Computer Vision (ICCV) 2023*  
Sriram Yenamandra, P. Ramesh, V. Prabhu and J. Hoffman
- **Adapting Self-Supervised ViTs by Probing Attention-Conditioned Masking Consistency**  
*Neural Information Processing Systems (NeurIPS) 2022*  
V. Prabhu\*, Sriram Yenamandra\*, A. Singh and J. Hoffman
- **Housekeep: Tidying Virtual Households using Commonsense Reasoning**  
*European Conference on Computer Vision (ECCV) 2022*  
Y. Kant, A. Ramachandran, Sriram Yenamandra, I. Gilitschenski, D. Batra, A. Szot\*, and H. Agrawal\*
- **Semi-Supervised Deep Expectation-Maximization for Low-Dose PET-CT**  
*International Symposium on Biomedical Imaging (ISBI) 2022* (Received best paper award)  
V. Sharma, A. Khurana, Sriram Yenamandra, S.P. Awate
- **Learning Image Inpainting from Incomplete Images using Self-Supervision**  
*International Conference on Pattern Recognition (ICPR) 2020*  
Sriram Yenamandra, A. Khurana, R. Jena, S.P. Awate
- **FaaSter: Accelerated Functions-as-a-Service with Heterogeneous GPUs**  
*short paper at IEEE High Performance Computing, Data and Analytics (HiPC) 2021*  
A. Garg, P. Kulkarni, U. Bellur, Sriram Yenamandra \* equal contribution

## ACHIEVEMENTS

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- Awarded **Stanford Graduate Fellowship (SGF)** for PhD studies in Stanford's CS department [2024]
- Awarded **Outstanding MS Research award** by College of Computing, Georgia Tech [2024]
- Secured **third position** on the easy version of Habitat Rearrangement Challenge organized at NeurIPS [2022]
- Awarded **Advanced Performer's** grade for performance in top 3% in UG *Linear Algebra* course [2017]
- Awarded **Branch Change** to CSE department for exceptional academic performance in UG first year [2017]
- Secured **All India Rank 69** in **JEE (Main)** entrance exam among over 1.2 million candidates [2016]
- Secured **All India Rank 387** in **JEE (Advanced)** entrance exam among over 140,000 candidates [2016]
- Among **National Top 1%** out of 44032 candidates in National Standard Examination in **Physics**, India [2016]
- Awarded **KVPY fellowship** for pursuing higher studies in Basic Sciences by Government of India [2015]

## RESEARCH PROJECTS

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### **HomeRobot: Open-Vocabulary Mobile Manipulation**

*August 2022 - July 2023*

*CVMLP Lab*

*Georgia Tech*

- Developed a **Sim2Real** robotics benchmark for evaluating agent's ability to rearrange objects using their names
- Built a baseline by chaining manipulation and navigation skills trained via **reinforcement learning**
- The proposed baseline achieves 20% success rate on real robot outperforming a simple SensePlanAct baseline

### **Generating Counterfactuals for Stress-Testing Vision Models**

*April 2023 - June 2023*

*Hoffman Lab*

*Georgia Tech*

- Contributed to devising method using diffusion models to generate test images for evaluating model sensitivity
- Finetuned LLaMA-7B model using LoRA approximation to generate diverse perturbations of image captions
- Images generated from these captions caused top-1 accuracy drops (4-8%) in all standard vision classifiers

### **GOAT: Go To Any Thing in Real Environments**

*July 2023 - November 2023*

*CVMLP Lab*

*Georgia Tech*

- Worked on a navigation system that can reach a series of goals specified via language, image or object category
- Built an agent memory that keeps track of object instances as the agent explores for matching with goals

### **Identifying spurious correlations via bias amplification**

*August 2022 - March 2023*

*Hoffman Lab*

*Georgia Tech*

- Proposed an approach that amplifies **spurious correlations** before clustering to isolate underrepresented slices
- The proposed approach outperforms prior work by at most 35% Precision@10 across a diverse evaluation settings

### **Domain Adaptation of Self-Supervised Vision Transformers**

*January 2022 - May 2022*

*Hoffman Lab*

*Georgia Tech*

- Worked on adapting ViTs pretrained using self-supervised methods (eg. MAE, DINO) to new domains
- Developed a selective self-training strategy that uses predictive consistency across masked versions of image
- Achieved SOTA performance on unsupervised domain adaptation benchmarks for adapting pretrained ViTs

### **Tidying Virtual Households using Commonsense Reasoning**

*October 2021 - March 2022*

*CVMLP Lab*

*Georgia Tech*

- Worked on developing a benchmark for evaluating an agent's ability to tidy-up dirty households
- Led a data collection effort (1500+ human hours) for collecting human preferences of correct object placements
- Developed a baseline that uses large language models for reasoning about the valid placements of objects

### **Learning Image Inpainting from Incomplete Images**

*August 2019 - July 2020*

*Bachelor's Thesis Project*

*IIT Bombay*

- Worked on the problem of inpainting images having holes using an incomplete and corrupted training data set
- Achieved better performance than state-of-the-art inpainting algorithms on CelebA face and Stanford car datasets

## TEACHING EXPERIENCE

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### **Undergraduate Teaching Assistant**

- *Computer Architecture* course under Prof. Bhaskaran Raman *Autumn 2019*
- *Abstractions & Paradigms for Programming* course under Prof. Amitabha Sanyal *Spring 2019*
- Responsible for conducting tutorials and lab sessions, setting assignments and grading examinations

## SERVICE

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- Organized HomeRobot: Open Vocabulary Mobile Manipulation competitions at NeurIPS 2023 and CVPR 2024
- Reviewed for ICRA'25, RA-L, CoRL'24, ECCV'24, CVPR'24, ICLR'24, NeurIPS'23, ISBI'22, ICPR'22.
- Completed 80 hours of social service under NSS (National Service Scheme), IIT Bombay