Sriram Krishna

(+1) 412-844-1772 | sskrishn@cs.cmu.edu | sriramsk1999.github.io | sriramsk1999 | sriramsk

Education

Carnegie Mellon University *Pittsburgh, PA*
MASTER OF SCIENCE IN ROBOTICS - **GPA: 4.08/4.0** *Aug 2024 - Aug 2026 (Expected)*

PES University *Bengaluru, India*
BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING - **OVERALL GPA: 8.99/10.0 || MAJOR GPA: 9.17/10.0** *Aug 2017 - May 2021*

Experience

Carnegie Mellon University - Robotics Institute *Pittsburgh, PA*
GRADUATE RESEARCH ASSISTANT *Aug. 2024 - Present*
- **Robots Perceiving and Doing Lab (R-PAD)** - Advised by **David Held**
- Developing methods for cross-task generalization in manipulation through learning embodiment-agnostic representations from **human demonstrations**, enabling human-to-robot transfer and generalization to new tasks on real hardware.
- *Dexterous Manipulation*: Collaborating on hierarchical policy learning for articulated object manipulation, and development of a benchmark for evaluating human-to-robot transfer.
- *Mentoring:* Automatic task decomposition and keyframe extraction at phase boundaries of arbitrary video demonstrations.

Samsung Research *Bengaluru, India*
SOFTWARE ENGINEER - COMPUTER VISION *Dec. 2021 - Apr. 2024*
- **AR Vision Lab - Depth Estimation and 3D Scene Reconstruction** - Development of Spatial Understanding solutions
- Research and Development on depth estimation by leveraging a range of machine learning techniques such as self-supervised learning and knowledge distillation.
- Optimized models for real-time on-device inference and integrated depth subsystems into 3D Reconstruction pipeline.
- Designed and developed **DeepSmooth**, a model which achieved SOTA results for temporal consistency in depth completion. Paper presented at the VOCVALC workshop at CVPR 2023.
- Proposed the design and led implementation for ground truth data generation of depth / segmentation for an arbitrary camera system using a laser scanner & motion capture.
- Spent 5 months across 2 years at Samsung HQ in Korea, point of contact with HQ members to coordinate/resolve issues.
- *Mentoring*: Synthetic data generation of procedurally generated room scale scenes to develop data pipelines for training and evaluating depth estimation models.
- Tech Stack: C++, PyTorch, Qualcomm SNPE, CMake, ONNX

MIDAS-IIIT Delhi *New Delhi, India*
RESEARCH ASSISTANT - PART TIME *Jun. 2021 - Jul. 2023*
- Improved reliability of Automated Scoring systems by bringing humans into the loop. Achieves significant gains in accuracy of evaluation while adapting to varying budgets of human evaluators. Presented at EAAI 2022, organized jointly with AAAI-22
- Used Topological Data Analysis (TDA) methods for modeling the coherence of natural language text. We show that with an appropriate representation, we can achieve state-of-the-art results with a simple MLP. Accepted in The Tiny Papers Track at ICLR 2024.

Nextuple Inc. *Bengaluru, India*
SOFTWARE ENGINEER *Jul. 2021 - Dec. 2021*
- Built Nextuple's Machine Learning Platform. Integrated the platform into existing infrastructure following best practices (logging, visualization, etc.) Tech Stack: Azure, Kubernetes, Kubeflow

SOFTWARE ENGINEER - INTERN *Jan. 2021 - July. 2021*
- Developed a simulation demonstrating a new sourcing model, showing 20% reduction in shipping costs and 20-50% reduction in the number of shipments. Designed and developed the simulation flow and core logic in a modular architecture.

OffNote Labs *Bengaluru, India*
DEEP LEARNING INTERN *May. 2020 - Sep. 2020*
- Developed GESTOP, an application for customizable gesture control of computer systems. The application provides an interface to communicate with a computer through hand gestures. Custom gestures to be recognized can be added to extend the application.
- Designed, developed and extensively documented the entire application.
- Accepted in the systems track at ACM CODS-COMAD 2021.

Publications

- **Sriram Krishna**, Sravan Chittupalli, and Sungjae Park. BG-HOP: A Bimanual Generative Hand-Object Prior. In *CVPR 2025 - Agents in Interaction, from Humans to Robots Workshop*, 2025.

- Samyak Jain*, Rishi Singhal*, **Sriram Krishna***, Yaman Kumar Singla, and Rajiv Ratn Shah. Beyond Words: A Topological Exploration of Coherence in Text Documents. In *The Second Tiny Papers Track at ICLR*, 2024.

- **Sriram Krishna** and Basavaraja Shanthappa Vandrotti. DeepSmooth: Efficient and Smooth Depth Completion. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2023) - VOCVALC Workshop*, pages 3357–3366, 2023.

- Yaman Kumar Singla*, **Sriram Krishna***, Rajiv Ratn Shah, and Changyou Chen. Using sampling to estimate and improve performance of automated scoring systems with guarantees. In *Proceedings of the AAAI Conference on Artificial Intelligence - Educational Advances in Artificial Intelligence*, 2022.

- **Sriram Krishna** and Nishant Sinha. Gestop: Customizable Gesture Control of Computer Systems. In *8th ACM IKDD CODS and 26th COMAD*, pages 405–409. ACM, 2021.

- **Sriram Krishna**, Siddarth Vinay, and KS Srinivas. Searching a Raw Video Database using Natural Language Queries. In *2021 International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)*, pages 1–6. IEEE, 2021.

- **Sriram Krishna** and Niharika Pentapati. Genetic Bi-objective Optimization Approach to Habitability Score. In *International Conference on Modeling, Machine Learning and Astronomy*, pages 144–157. Springer, 2019.

Skills

Programming Languages	Python, C++, C, Java
Relevant Coursework	Robot Learning, Advanced Computer Vision, Learning for 3D Vision Probabilistic Graphical Models, Computer Graphics, Information Retrieval
Tools and Frameworks	PyTorch, Mujoco, LeRobot, IsaacGym, OpenCV, Docker, CMake, Kubernetes
Additional	Shell Scripting, Latex, Emacs Lisp

References

David Held - Associate Professor, Robots Perceiving And Doing, Carnegie Mellon University - dheld@andrew.cmu.edu

Rajiv Ratn Shah - Assistant Professor, MIDAS Lab, IIIT-Delhi - rajivratn@iiitd.ac.in

Basavaraja Vandrotti - Architect, AR Vision Lab, Samsung R&D Institute Bangalore - b.vandrotti@samsung.com