

Ravi Tej Akella

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M.S. Robotics student at Carnegie Mellon University seeking an internship in Machine Learning and Robotics

Education

Carnegie Mellon University — School of Computer Science

Pittsburgh, PA

Master of Science in Robotics

Aug 2021 - May 2023

Indian Institute of Technology (IIT) Roorkee

Roorkee, India

Bachelor of Technology in Electronics & Communication Engineering — GPA: 8.129/10

July 2014 - May 2018

Minors in Computer Science & Engineering

Selected Coursework: Computer Vision (16-720), Statistical Techniques in Robotics (16-831), Data Structures

Experience

Carnegie Mellon University | Research Assistant

Pittsburgh, PA

Advisor: Prof. Jeff Schneider

Sep 2021 - Present

- Designing the machine learning stack for off-road navigation of all-terrain-vehicles (ATVs).
- Bridging model-based and model-free reinforcement learning for fast and precise control of ATVs in the wild.

Purdue University | Research Assistant

West Lafayette, IN

Advisor: Prof. Kamyar Azizzadenesheli, Prof. Vaneet Aggarwal

Jan 2021 - Jul 2021

- Developed an attention-based feature selection method to compress the state-space of imitation learning methods.
- Demonstrated 4x improvement in sample-efficiency and increased training stability on PyBullet Gym benchmark.

California Institute of Technology | Researcher

Remote

Advisors: Prof. Anima Anandkumar, Dr. Mohammad Ghavamzadeh (Google Research)

Oct 2018 - Dec 2020

- Developed a new policy gradient estimator that uses Bayesian quadrature for more accurate gradient estimation.
- Implemented kernel interpolation and fast-SVD to reduce the computational complexity from cubic to linear.
- Lead contributor on this collaborative project between Caltech and Google Research.

Texas Instruments | Summer Internship

Bangalore, India

Mentor: Ankur Kumar Singh

May 2017 - Jul 2017

- Automated the testbench generation workflow for validation of circuit design on test parameters, thereby accelerating the design verification timeline by 20x factor.

Publications

- Deep Bayesian Quadrature Policy Optimization. **Ravi Tej Akella**, K. Azizzadenesheli, M. Ghavamzadeh, A. Anandkumar, Y. Yue. AAAI Conference on Artificial Intelligence (AAAI) 2021, NeurIPS Deep RL & Real-World RL Workshops 2020. [\[Link\]](#)
- Enhancing Perceptual Loss with Adversarial Feature Matching for Super-Resolution. **Ravi Tej Akella**, S. Halder, A. Shandilya, V. Pankajakshan. International Joint Conference on Neural Networks (IJCNN) 2020. [\[Link\]](#)
- Reinforced Multi-task Approach for Multi-hop Question Generation. D. Gupta, H. Chauhan, **Ravi Tej Akella**, A. Ekbal, P. Bhattacharyya. International Conference on Computational Linguistics (COLING) 2020. [\[Link\]](#)
- Randomized Kernel-Based Secret Image Sharing (SIS) Scheme. **Ravi Tej Akella**, R. Teja, V. Pankajakshan. IEEE International Workshop on Information Forensics and Security (WIFS) 2018. [\[Link\]](#)

Open Source Projects

- **Open3D** (5600+ stars, 1400+ forks, 100+ contributors) | Contributor
A 3D data processing library maintained by the Open Source Vision Foundation (OSVF). [\[Link\]](#)
- **Disentangled Learning with β -Variational Auto-Encoder**
Implementation of “ β -Variational Autoencoders” (*Burgess et al. 2018*) using TensorFlow. [\[Link\]](#)

Technical Skills

Languages: Python, C, C++, Java, Shell, L^AT_EX, MATLAB and Simulink

Frameworks & Technologies: PyTorch, TensorFlow, Keras, Git, Linux