Sreenivas Venkobarao

sreenivasv@cs.umass.edu
svrao.ml | LinkedIn: SreenivasVRao | Github: SreenivasVRao

Mobile: 413-522-3672
1 Harborside Pl, 301
Jersey City, NJ - 07311

Education

- **University of Massachusetts, Amherst** — Amherst, MA
  Master of Science in Computer Science — *Sep 2017 – May 2019*
  - **Courses**: Computer Vision; Neural Networks; Artificial Intelligence; Database Design & Implementation; Optimization Algorithms; ***GPA:*** *3.81 / 4.0*
- **SSN College of Engineering, Anna University** — Chennai, India
  Bachelor of Engineering in Electronics and Communication Engineering — *Jul. 2013 – Apr. 2017*
  - **Courses**: Advanced Digital Signal Processing, Digital Image Processing, Computer Architecture

Skills

- **Languages:** Python, Java, C++, TypeScript
- **Software:** Git, Heroku, LaTeX
- **Frameworks:** PyTorch, Tensorflow, OpenCV, Scikit-Learn, Keras, AWS CloudFormation, AWS CDK

Work Experience

- **Software Engineer, Performance Advertising Division** — New York City, NY
  Amazon.com, Inc. — *March 2020 -*
  - Working as a backend software engineer building highly scalable and available services that provide ad performance diagnostics and advertising eligibility information to sellers on Amazon's retail platform. Extensively build and deploy cloud-native AWS resources, and develop serverless infrastructure.
- **Computer Vision Engineer** — San Jose, CA
  WeRide AI — *July 2019 - Feb 2020*
  - Worked on solving challenges in autonomous driving using machine learning and computer vision. Developed neural network algorithms for pedestrian detection from thermal images. Developed a constrained convex optimization based algorithm for online error correction in object tracking.
- **Computer Vision Intern** — Palo Alto, CA
  Xerox Palo Alto Research Center (Xerox PARC) — *June 2018 - Sep 2018*
  - Worked under Dr. Matthew Shreve, in the Interactions & Analytics Lab on building fast annotation tools for 3D objects, and reconstructing 3D models of novel objects, using Augmented Reality. Demonstrated a system for extracting articulatable parts by using RANSAC + Iterative Closest Point matching on a 3D point cloud. Filed a patent application based on my work. **US Patent App. US16/235434**

Research Experience

- **Self Supervised Representation Learning using Video Interpolation** — UMass Amherst
  Masters Project — *Sep 2018 - May 2019*
  - Worked under Professor Erik Learned-Miller and Prof. Liangliang Cao on self supervised learning of video representations using video interpolation as an auxiliary task. Reproduced NVIDIA's state of the art SuperSloMo video interpolation deep learning model, and demonstrated improvements in performance using LSTM and GRU layers. Submitted to ICCV 2019.
- **Camera Rotation Estimation from Optical Flow** — Amherst, MA
  Computer Vision Lab, UMass Amherst — *Jan 2018 - May 2018*
  - Worked under Professor Erik Learned-Miller on estimating camera rotation from a video sequence using optical flow of tracked points across video frames. Implemented a novel automatic image registration algorithm based on coarse optical-flow based alignment, and fine alignment using pixel-wise entropy minimization.

Projects

- **RiskyClickerBot**: A content moderation system for Reddit, to detect explicit images and videos.
- **Rubik's Cube Solver**: A system to detect the state of a Rubik's cube from photos using edge detection and k-Means Clustering, and finally generate a solution using Kociemba's algorithm.
- **ArXiv Abstract Bot**: Python bot to extract abstracts from ArXiv submissions for the r/machinelearning sub-forum on Reddit.