Sri Anumakonda

Website | Email | Linkedin | Github | Twitter | Medium

Projects

VARS: A Vision-Based Approach to Robotic Self-Driving Cars Jul. 2022 – Present

- Using a DonkeyKit + hardware customization to create a robotic self-driving car capable of driving on sidewalks on a Raspberry Pi 4
- Replicating full-stack self-driving software from perception → trajectory generation and control, actively learning about deploying PyTorch models onto the Pi
- Using OpenCV to take in images of sidewalk lanes and applying Gaussian Blur + Canny Edge Detection to output lane lines (non-Deep Learning approach
- Implementing ORB-SLAM3 for Simultaneous Mapping and Localization (SLAM) as the car navigates its way through the world (sidewalks)

End2End Learning for Lateral Control | Github Nov. 2021 – Jan. 2022

- Implemented NVIDIA's End2End Learning Paper from scratch to create a network for lateral control of autonomous vehicles
- Researched various types of mechanisms and prototyped with several types of networks such as attention networks, interpetable end2end, and lateral control with MPC
- Broke down end2end approaches of companies such as Wayve and comma.ai and created POCs to understand what needs to be true to create fully end2end systems

DataGAN: Leveraging Synthetic Data for Self-Driving Vehicles | Github Medium Sept. 2021 – Nov. 2021

- Used DC-GANs (FCNs) to take in input images of road scenes from the Cityscapes dataset and understands in-depth features of what is a realistic scene image
- Trained for 4000+ epochs on more than 2000+ images to generate realistic scene images, following an approach similar to BigGAN
- The main intention behind this project was to understand what adversarial scenarios (out-of-distribution events) take place when deploying an autonomous vehicle. Using that data, my goal would then be to extrapolate on it, generate several thousands of realistic images, and be able to plug it into a perception/planning module to see how it would react.
- Future plans include: collecting OOD scenarios whether in simulation or real-world, and be able to scale up and create these closed loop systems

Become a Self-Driving Car Engineer | Term 1 Term 2 Capstone Project Certificate Mar. 2021 – May. 2021

- Became one of the youngest certified self-driving car engineers in the world, after going through Udacity's nanodegree from start to finish in 12 weeks
- Learned everything there is to know about self-driving, from sensor fusion and localization to trajectory controlling and execution using PID controls
- Was featured on Udacity's YouTube channel and had an article written about me by both Udacity and David Silver for the work that I'm doing
- Written 5+ articles on my medium spanning across the parts of AV software + the technicals behind it

Experience

Associate Member June 2022 – Present

Masason Foundation *Austin, TX*

- Founded by Masayoshi Son, the Masason Foundation is a program that helps young individuals to develop skilsets to create the world of tomorrow, and contribute to the futuer of humankind
- I'm one of the 34 members selected of the 2022 cohort (Gen 6), currently am pursuing self-driving and AI research there

Alumni Sept. 2020 – June 2022

The Knowledge Society *Toronto, ON*

- Underwent human accelerator training for 2 years, where I learned about mindsets and philosophy and gained the skillsets to solve some of the world's biggest problems
- Worked with Shell, the UN and Instacart on reducing carbon emissions by 50%, creating post-secondary pathways for women in South Africa, and creating systems to incentivize shoppers and employees respectively.
- Built 20+ AI projects in the space of 12 months, ranging from Mask Detection to Skin Cancer Detection
- Full portfolio can be viewed here

Education

Westwood High School — Austin, TX
G/T Program with APs — *Aug. 2022 – May 2024*

The Woodlands School — Mississauga, ON
Enhanced Learning Program — *Sept. 2020 – June 2022*

Technical Skills

Interests: Autonomous Vehicles, Computer Vision, Artifical Intelligence, Deep Learning, Trajectory Generation, Localization, Hardware
Languages: Python, C++, Java, HTML/CSS, JavaScript, Git
Frameworks: PyTorch, Tensorflow, Keras, OpenCV, NumPy, scikitLearn, Matplotlib, AWS

References

Shreyas Kosuik - Incoming Assistant Prof at Georgia Tech's George W. Woodruff School of Mechanical Engineering

Daniel Rothenberg - Staff SWE / Technical Lead, Atmospheric Science, Waymo