Sri Anumakonda

[Website](#) | [Email](#) | [Linkedin](#) | [Github](#) | [Twitter](#) | [Medium](#)

EDUCATION

Carnegie Mellon University Pittsburgh, PA

B.S. Robotics *Aug. 2024 – May 2028*

EXPERIENCE

Student Researcher Jan. 2024 – Jun. 2024

University of Texas-Austin *Austin, TX*

- Researching into vision-based SLAM systems with a PhD student to improve long-term data association performance
- Studying SLAM at its essence and creating online implementations of visual-SLAM

Student Researcher Aug. 2023 – Dec. 2023

University of Illinois Urbana-Champaign

- Leading generative modelling research with a PhD from UIUC to create adversarial systems to train more robust autonomous vehicle policies

Member June 2022 – Present

Masason Foundation

- Founded by Masayoshi Son, the Masason Foundation is a program that helps young individuals to develop skillsets to create the world of tomorrow, and contribute to the future of humankind
- Support for my research in AI + Computer Vision is given to help solve some of the world's biggest problems and build the future of humankind
- I'm one of the 34 members selected (2% acceptance rate) of the 2022 cohort, 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 found on my [Github](#)

PROJECTS

Bartimaeus: Stealing Vision Back - [HACKPRINCETON](#) HEALTHCARE WINNER | [Website](#)   Nov 2024

- Used state-of-the-art pre-trained models in order to perform accurate segmentation, object detection, and monocular depth estimation of indoor enviroments
- Prototyped a novel greedy-based path-planning optimization algorithm to allow for discrete binning of actions to communicate to visually-impaired individuals
- Interfaced via OpenAI's Whisper model as an audio feedback-loop between the user and the model

DebateZero: The Future of Debate Analysis - [HACKCMU](#) OVERALL WINNER | [Github](#)   Oct 2024

- Performed spectral analysis to interpret speech patterns in between debators
- Implemented landmark detection on face to track eye and mouth movement
- Created mathematical models to analyze eye tracking movement
- Leveraged multi-modal GPTs to create actionable insights and engage in conversation with listeners about potential misinformation and biases in debates
- Future plans: turn into a fully-fledged tool and turn int into some sort of interactive product!

CUDA-Optimized Semantic Segmentation for Autonomous Vehicles | [Github](#)   Feb. 2023 – May 2023
- Creating a U-Net-like architecture with Custom Loss Functions to perform semantic segmentation on the CityScapes dataset
- Leveraging PyTorch's LibTorch C++ API to deploy models from Python $\Rightarrow$ C++ and run predictions through OpenCV
- Using Torch JIT's framework to convert PyTorch models into TorchScript for faster pre-processing on CUDA kernels and in C++
- Future plans: incorporate NVIDIA TAO and other SDK frameworks to deploy the model with the highest FPS possible

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
- Written 5+ articles on my medium spanning across the parts of AV software + the technicals behind it including [trajectory generation](#), [localization](#), and [kalman filters](#)

MEDIA

- Austin Computer Vision Meetup (sponsored by Voxel51): [Scaling Autonomous Vehicles with End2end Learning](#), [recap article](#) [Nov 2022]
- SirusXM: [Meet 3 Teens in Canada Who are Changing and Impacting the World With Tech](#) [Oct 2022]
- The Logic: [The Young Canadian innovators getting a boost from Softbank's Son](#) [Oct 2022]
- David Silver: [Sri Builds a Real Self-Driving Car!](#) [June 2021]
- Udacity: [Autonomous Tech Dreams of the 14-year-old Sri Anumakonda](#), [accompanying article](#) [April 2021]

TECHNICAL SKILLS

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