

Vamsi Madhav Kota

+44 7776692179

vamsimadhavkota@gmail.com

[LinkedIn](#)

[GitHub](#)

Summary

As a recent Master of Science graduate in Artificial Intelligence with a specialization in AI, I am eagerly look for an entry-level position in AI research or development, with a particular interest in computer vision related roles. I have a passion for utilizing AI to make a positive impact on society.

Education

Master of Science in Artificial Intelligence

University of Surrey

Feb 2022 - Feb 2023

Guildford, United Kingdom.

Thesis: *A Cooperative AI-Based Traffic Light Control Structure for ITS*

Supervised by Dr. Chuan Foh

Modules: Computer Vision and Pattern Recognition, Speech and Audio Processing and Recognition, Artificial Intelligence and AI Programming, Image and Video Compression, Image Processing and Deep Learning.

Master of Technology in Robotics

SRM Institute of Science and Technology

Jun 2018 – Jun 2020

Tamil Nadu, India.

Thesis: *Automatic Traffic Signal Detection & V2V Communication using RCNN*

Supervised by Prof. Manoj Kumar

International Conference: *Deep Learning*

Supervised by Prof. Manoj Kumar

Modules: Robot Vision and Mobile Robot, Computer Aided Design and Manufacturing, Robot Programming and Robotic Sensors, Genetic Algorithm, Neural Networks and Applications.

Bachelor of Technology in Mechanical Engineering

SRM University

Jun 2013 – Jun 2017

Tamil Nadu, India.

Thesis: *Automation Fluid Plant using Programmable Logic Controller*

Supervised by Prof. Nagarajan

National Conference Thesis: *Solar Pond Power Plant*

Supervised by Prof. Chandra Mohan

Publications

- Published a paper titled "Deep Learning – A Review" in IOP Publishing Ltd. (<https://iopscience.iop.org/article/10.1088/1757-899X/912/3/032068>) [\[Link\]](#)

Academic Projects

- Cooperative AI-Based Traffic Light Control Structure for ITS**
Used Reinforcement Learning, PyMoSim, and Flask, this project aimed to optimize traffic flow and reduce waiting time at junctions by collecting real-time traffic data and integrating it into a RL model.

- **Automatic Traffic Signal Detection & V2V Communication using RCNN**
In this project, I used Region-based Convolutional Neural Networks and a Portable Electronic System prototype to collect real-time traffic data and activate electromagnetic brakes in vehicles. Technologies used include Python, Arduino, Raspberry Pi, and Zigbee.
- **Robot Configuration (Cylindrical Robot)**
In this project, I used an Arduino system to program electrical servo motors to operate automatically, while also miniaturizing the model.
- **Automation Fluid Plant using Programmable Logic Controller**
Our goal in this project is to automate a fuel and water treatment plant using a Programmable Logic Controller (PLC). This will result in improved efficiency and full automation.
- **Solar Pond Power Plant**
We have proposed a novel method to generate solar energy on the surface of water bodies using solar ponds, photovoltaic cells, and solar energy.

Professional Skills

Programming Languages: Python, Prolog, Flask

Machine Learning: NumPy, Pandas, PyTorch, Keras, Tensor Flow,

Model development and deployment

Analysing Tools: MATLAB, NI LabVIEW, Proteus (Design and Simulation)

Robotics Programming: Motion planning and capture, Inverse kinematics, Gazebo Robotics simulation and path planning.

Addition Projects

- **Diffusion Model (Conditional Methods)**

I use diffusion models to generate realistic data with an IOU of 0.90, I train my models using Adam 0.9 and RMSProp 0.8.

- **Diffusion Model using MNIST**

- **Conditional Model**

The Adam (Perceptual Loss 5.8603) Conditional Model is more accurate and produces more realistic results than the RMSProp (Perceptual Loss 11.5206) Conditional Model.

- **Unconditional Model**

The Adam (Perceptual Loss 0.0302) Unconditional Model is better than the RMSProp (Perceptual Loss 0.0710) Unconditional Model.

- **GAN With TensorFlow 2**

I have had the opportunity to work with GANs and generate highly realistic data with an IOU of 0.89.

- **Image Segmentation UNET**

I used a realistic data using U-Net in GANs with an IOU of 0.85.