MONIKA NAGALLA

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EDUCATION

Worcester Polytechnic Institute, MA Jan 2021 - Present
Master of Science in Robotics Engineering *GPA: 3.83/4.0*

National Institute of Technology Calicut Aug 2014-May 2018
Bachelor of Technology in Electronics and Communications Engineering *Focus: Robotics*

SKILLS

Languages: Python, C++,C, Java Script, HTML5, CSS.
Operating Systems: Linux, Windows
Softwares: Git, OpenCV, Docker, ROS, Gazebo, CARLA, Matlab/Simulink, GitLab, Jenkins, JIRA.

EXPERIENCE

Platform Programmer Intern, Schneider Electric, USA Jan 2022 - Present

· Designing and Developing a signing method to embed into the existing CI/CD pipeline, to protect the firmware images which are deployed onto DCS systems.

Software Developer, Reliance Industries Ltd Jul 2018 - Jul 2020

· Developed Python REST API and Micro-services for Data Modeling Framework.
· Developed and deployed production level code by following Agile methodology using JIRA.
· Full stack development of HLA GEL Analysis and Text Summarization frameworks.

Project Lead, NITC Robotics Interest Group Oct 2014 - May 2018

· Designed and built a statically stable walking Robo Dog with 16 degrees of freedom.
· Senior executive of NIT Calicut's ROBOCON team during international ROBOCON' 17 competition.

PROJECTS

3D Car Object Detection using multi-sensor data Python, CNN,Efficientnet

· Improved FrustumPointNets performance by modifying the architecture.
· Replaced Faster RCNN, used for 2D Bouding box estimation in baseline FrustumPointNets, with EfficientNet.

Explicit Personalized planning for Advanced Driver Assistance Systems(ADAS) in Autonomous Vehicles Python, Carla

· Implemented Second order Beizer curve as local planner with A* algorithm as the global planner.
· Performed Left/Right turn and overtaking tasks by Ego vehicle, by fine tuning of the control parameters of the Beizer curve.

Sum of Absolute Differences(SAD) based stereo vision algorithm: A prototype implementation on FPGA Matlab,FPGA

· Incorporated SAD combined with DCT and Adaptive Window technique(AWDE) for generating high quality disparity maps.
· Achieved an Absolute Average Error/pixel of 5.11 by combining SAD using a varying window(AWDE), based on the mean absolute difference w.r.t centre pixel.

Skinput glove Matlab, SVM, Arduino

· Designed and developed a wireless motion detection glove with an Atmega328 embedded onto the glove.
· 4 Different motions have been classified by SVM to perform control actions of custom Music player.

Unified Data Engineering Framework Git, Python, REST API,HQL

· Developed a one stop framework for data services like Ingestion, Transform and Consume models from data lake.
· Reduced 96.8% of the manual hours by developing an automated HQL query generator in Flask and integrated with REST API for access by other micro-services.