# MONIKA NAGALLA

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## EDUCATION

**Worcester Polytechnic Institute, MA** Jan 2021 - Present
*Master of Science in Robotics Engineering* *GPA: 3.66/4.0*

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

## SKILLS

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

## EXPERIENCE

**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

- Statically stable walking Robo Dog with 16 degrees of freedom.
- Skinput: A glove that uses SVM to control custom designed music app.
- 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 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** 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.

**Unified Data Engineering Framework** GitLab, 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.