VIHARIKA CHERUKULA   viharika.veena@gmail.com   (470)330-9878   LinkedIn

ADAS Simulation Software Engineer at Aptiv with a Master's degree in Electrical and Computer Engineering

MS IN ELECTRICAL AND COMPUTER ENGINEERING at University of Illinois, Chicago | Graduated May 2019
B.TECH IN ELECTRICAL AND ELECTRONICS ENGINEERING at SRM University, Chennai, India | Graduated May 2017

SKILLS

SIMULATION SOFTWARE: MATLAB & Simulink (Certified), Stateflow, ANSYS VRX, CarMaker, VTD, LABVIEW
SIMULATION : Experience in MIL/SIL/HIL, OSI |development & testing of AD/ADAS systems | Sensors: Radar, Camera, Lidar Modelling & Testing | Simulation Test bench setup | Familiar with automotive regulations and functional safety standards
SOFTWARE LANGUAGES : MATLAB, C, C ++, Python, Embedded C
FUNCTIONAL : CData, XSD, Neo4j, Freemind |Scenario Database creation |OpenScenario, OpenDrive| DOORS
COMMUNICATION : CAN-FD, CAN/LIN, TCP/IP, Ethernet, UDP, FlexRay

EXPERIENCE

APTIV | JULY 2019 – PRESENT: AD Simulation and Validation, Tools and Methodologies Team
- Develop Aptiv internal simulator for MIL/SIL validation of Autonomous algorithms
- Design Simulation tests to validate autonomous algorithms for different OEM's
- Create Aptiv's Scenario and Parameter Database based on OpenScenario and OpenDrive

SAMSUNG STRATEGY AND INNOVATION CENTER | MAY – AUGUST 2018: Samsung DRVLine Simulation and Testing Team- simulation models for testing autonomous algorithms using Model Based Design, MATLAB, Simulink, DOORS, CarMaker and VTD. HIL test bench setup

PROFESSIONAL PROJECTS

RADAR MODEL SIMULATION: Implemented Radar Model with different look modes in Simulink using OSI (Open Simulation Interface) which is integrated via S-Function and output to VDR (Vehicle Data Recorder) PC via CAN-FD. Generated plug-in exe for the Simulink Model. Tested on synthetic scenarios from ANSYS VRX and CarMaker
SYNTHETIC MOBILEYE DATA GENERATION: Extracted Ideal Camera sensor data such as Bounding Box, Traffic Sign, Road Lane/Line from Simulators with real world camera configuration and used it to replicate data coming from MobilEye Camera in real world logged in DVTool (Aptiv Data Visualization Tool) via Ethernet UDP communication and fed to Resim
INJECTED GPS COORDINATES TO SYNTHETIC SCENARIO: Extracted GPS coordinates from logged real world dvl and mudp data using MATALB scripts and injected them to ANSYS VRX scenario to dictate the vehicle trajectory to test the autonomous algorithms
AUTONOMOUS DRIVING SIMULATOR INTEGRATED PLATFORM: Autonomous algorithms such as Object Fusion (Radar, Lidar and Camera Model) developed across various platforms (C++, ROS, Simulink), integrated in Simulink by using S-Functions to test it with ASM DSpace
HIL TEST BENCH TO TEST AUTONOMOUS FEATURES: Developed Simulation models in MATLAB Stateflow for ACC, AEB, Lane Assist and System engagement/disengagement using Model Based Design. The inputs from DOORS is taken using Simulink Requirements. Simulink Verification and Validation toolbox is used for closed loop testing based on MAB with steering wheel force feedback.

ACADEMIC PROJECTS

IMAGE TRANSFORMATION & RESTORATION: Compared Wiener Filter, Gaussian Filter, Laplacian Filter and Inverse Filter for Restoration, and DFT, DCT, Haar, Walsh, Wavelets for Transformation on Blurred and Gaussian White Noise Images
ROBOT TO AID BLIND AND VISUALLY IMPAIRED: A Robot based on Raspberry PI using OpenCV, NumPy, SciPy to implement the Haar Cascade Face Detection. Festival software for Speech synthesis to output from mic
PEPPER HARVESTING DEVICE: Developed a device to harvest Pepper using Raspberry PI, Camera, IMU, Ultrasonic sensor, programmed on Raspbian with OpenCV. Used servo motor and rack pinion motion for cutting.

INDUSTRIAL TRAINING

MILLENNIUM APPLIANCES INDIA LTD | SUMMER 2016: Smart & Feature Phone, Washing Machine and CTV production Quality Measure Testing and Design. Fabricated test jig for testing smart phone mic, speaker, and LED
ISRO – NATIONAL REMOTE SENSING UNIT | SUMMER 2015: Fabricated PCB Circuit Design in Eagle for automated heat coil value calculator

COMPETITIONS

FIRST PLACE- AGRI-NEERS MAKE FOR CHANGE-IIT MADRAS: Design of Cardamom Harvester on Raspberry PI and Arduino as Master & Slave using Servo & DC Motors for motion and Stepper Motor for design of entrapping equipment. Control System Simulate in MATLAB
FINALIST -REPRESENTING SRM AT HYPERLOOP-POD COMPETITION CONDUCTED BY SPACEX: Worked under Electronics Team and responsible for sensor design for temperature & pressure measurement with 5-6 sensors each and communicating the data over WiFi and Bluetooth