Mustafa Sheikh

Curious and growth focused Electrical Engineer with 5+ years of automotive experience working in an agile corporate environment. Skilled at gathering requirements to deliver solutions while collaborating with global teams.

Skills

* Python, C++, UML
* Froglogic Squish, CANalyzer
* Simulation and Modelling using MATLAB and Simulink
* Mechanical part design using SolidWorks and CATIA
* dSPACE AutomationDesk, dSPACE ControlDesk
* Visual SVN, Git

Work Experience

Controls Engineer, FAW US Research and Development

Plymouth, Michigan, USA (Feb 2020 – Present)

* Worked under the guidance of controls engineers to implement LQR based controller for Steering of L4 vehicle using Simulink and MATLAB.
* United Tested controls module subsystems to prepare them for integration.
* Worked with a team of engineers to prove out Controller scheme in Mathworks Automated Driving Toolbox SIL environment.
* Interfaced with integration team to integrate proven control scheme in CarMaker SIL environment.

Software Development Engineer, Molex Connected Mobility Solutions

Rochester Hills, Michigan, USA (Jan 2019 – Feb2020)

* Developed and delivered Python based multi-threaded solution to flash software on Automotive Ethernet Gateway module subsystem in vehicle using a web-interface for OEM which is currently being used for production and proto-type vehicles.
* Worked on-site on Autonomous Vehicles to support OEM engineers and Ethernet Gateway firmware engineers to support testing and debugging.
* Investigated and advised on best practices for LabView and it’s use for in-house production testing solutions.
* Lead production testing efforts to review PFMEA as part of a cross-functional team.
* Participated in peer-review within team for testing solutions and UML based documentation.

HIL Engineer, Ford Motor Company

Allen Park, Michigan, USA (April 2013 – December 2018)

* Feature expert for highly distributed Lighting and ADAS features.
* Responsible for working with cross-functional team to determine scope-of-testing.
* Investigate current test-bench (HIL simulator) capabilities and expanding them to requirements.
* Co-ordinate local and off-shore resources to set milestones and deliver continuous testing of feature during each step of development cycle.
* Manual Testing Interface Standardization and Framework
  + Led a team of engineers to design a set of standard test layouts to increase efficiency of manual testing execution.
  + Created scalable framework using ControlDesk Next Generation and Python to control testing interface based on ease of use and minimal downtime for testers.
* Squish Based Automated GUI Tester for Gen 3.0 Sync Module using Python 3.x
  + Independently modified and extended pre-existing code from an off-shore team for local lab’s needs under time pressure in an Agile environment.
  + Integrated modified solution into local HIL and AutomationDesk frameworks while keeping pace with early stage software interface changes.
  + Responsible for ongoing support and maintenance of local tool.
  + Provided training and mentorship for other team members for use and maintenance.
* Universal Robot based Automated HMI Tester for Infotainment
  + Supplied, gathered, and submitted requirements to vendor.
  + Oversaw design and lead team for commissioning and validation.
  + Integrated solution AutomationDesk by writing and designing “library blocks” and data structures for portability and reuse of solution.
* Automated Locking Feature Tester for testing of distributed locking features
  + Designed, modelled, and evaluated parts and assemblies for fixturing using CATIA.
  + Worked closely with other engineers to write and modify smart motor controller code for to better suit the application.
* Test Bench BOM validation and parts acquisition
  + Identified and ordered parts for two concurrent programs.
  + Involved in part tracking and logistics for delivery.
  + Collaborated with suppliers, engineers, purchasers to resolve issues.
* Local Lead for global communication group.
* Power-train subsystem lead
  + Collected and reviewed ECU data sheets and system schematics.
  + Conducted signal list reviews and commissioned dSPACE HIL rack.
  + Coordinated testing efforts on rack.
  + Used Simulink to modify and create functionality for HIL models in conjunction with dSPACE libraries.
* License management
  + Restructured dSPACE license scheme to maximize usage and minimize cost.
  + Responsible for maintaining and procurement of all license for the lab with total cost of ~ 1000 000 USD and maintenance fees of about ~120k USD.

Worked with multiple suppliers and vendors to get quotes to fit the lab’s needs.

HIL Onsite Project Engineer at Ford, EASi

Dearborn, Michigan, USA (June 2012 – April 2013)

* Responsible for design, development, and maintenance of robotic motion system for automated Infotainment HMI testing.
* Utilized dSPACE AutomationDesk to automate testing for vehicle subsystems.
* Utilized Python to create and modify library blocks in dSPACE AutomationDesk
* Worked with suppliers, purchasing, and design engineers to identify ECU’s/Hardware to be integrated into HIL system based on features under test.
* Ordered, tracked, and coordinated delivery for all ECU’s/Hardware to be tested for multiple programs independently with minimal guidance.

Education

University of Windsor – Windsor, Ontario (2010-2011)

**BSc Physics and High Technology**

University of Windsor – Windsor, Ontario (2004-2009)

**BASc (Co-op) Electrical Engineering**