Mustafa Sheikh

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Skills

Languages: Python, C/C++, MATLAB/Simulink, SolidWorks, Julia, UML, LabView
Tools: dSPACE Tools, Vector CANoe, SAFe, Git, SVN, Jira, 8D, 5 whys, CAN/LIN, DFSS

Experience

Senior Virtual Application Engineer, General Motors – Milford, MI   Nov 2022 – Sept 2024

- Championed and secured organizational buy-in for $2 million Synopsys Virtualizer based 'shift-left' approach to Connectivity Module development enabling exploratory early designs.
- Led cross-functional development and delivery of Synopsys Virtualizer based Occupant Safety Module with test software, accelerating integration testing efforts by 4 months ahead of official software availability.
- Successfully launched next-generation ASTC Vlab based Central Gateway Module 8 months ahead of hardware schedule, driving concept-to-release progress and facilitating early software testing and integration.
- Leveraged expertise in virtual workflows to collaborate with product owners and release train engineers to integrate virtual hardware team into enterprise level agile framework.
- Scrum Lead for team of 12 as part SAFe for CAN and Ethernet ECUs for GM's SDV Platform.
- Developed virtualization solution benchmarks serving as the basis for tool-chain decisions worth $100k+.
- Utilized Vehicle Spy, CANoe, and WireShark to perform Root-Cause Analysis on ECUs.

Senior Design and Release Engineer, General Motors – Warren, MI   Mar 2021 – Nov 2022

- Spearheaded sourcing of Telematics Module by leading a cross-functional team through RFIs and TDRs.
- Leveraged agile principles to preempt and resolve issues while keeping leadership apprised.
- Helped safeguard $10s of millions in revenue and critical safety features for hundreds of thousands of OnStar customers impacted by the 2G/3G sunset by developing a mitigation plan with senior leaders.
- Worked with Resident Engineers and SMEs to issue ECRs and resolve production PRTS/AIMS issues.
- Maintained SW and HW BOMS in addition to SW Calibrations while supporting PPAP for new Part Assemblies.
- Maintained Device Transmittals and Schematic for Telematics Modules.
- Worked with Certification teams to ensure correct procedures were followed.

Telematics System Integration Lead, Aerotek (Contract at GM) – Warren, MI   Sept 2020 – Mar 2021

- Led multidisciplinary development meetings for features representing $10s of millions in business value.
- Proactively tackled development and implementation challenges in test setups and provided direction for creating electrical testing harnesses while mentoring junior engineers.
- Engaged system architects, subject experts, and suppliers to work on OTA related change requests for existing telematics modules to spearhead GM's evolving OTA strategy.

Software Controls Engineer, FAW US Research and Development – Plymouth, MI   Feb 2020 – Aug 2020

- Researched Vehicle Dynamics models and methods of Lateral Control for vehicles under typical highway scenarios in MATLAB/Simulink for ADAS and autonomy.
- Independently developed and executed test plans for PID based longitudinal and LQR based lateral control algorithms using MATLAB, allowing team to catch and resolve issues before integration.
- Worked closely with integration team to integrate and debug Software Releases in CarMaker SIL environment.
- Developed Object Oriented MATLAB scripts to analyze an visualize CAN data from MobilEye EyeQ4 system.

End-of-Line Tester Development Engineer, Molex LLC – Rochester Hills, MI   Nov 2018 – Feb 2020

- Developed multi-threaded Python scripts to flash Firmware on in-vehicle Ethernet Gateway subsystem automating a 60 minute error-prone manual process down to 15 minutes with logs.

- Designed and documented manufacturing test solutions using UML methods and engaged in peer-review to verify functionality ensuring first-time quality of solutions in Python and LabView.
- Led identification and mitigation of risks in production lines during PFMEA discussions with a global cross-functional team for Ethernet Switch Module subsystems and high-speed cables.
- Partnered with senior leaders to address production rework issues, creating timely work instructions that improved reliability and reduced testing time for multiple OEM programs.
- Led Root Cause Analysis and supported 8D and 5 why presentations for launch issues.

Senior HIL Automation Engineer, Ford Motor Company – Dearborn, MI   Apr 2013 – Nov 2018
- Drove the integration and extension of Ford Sync automation tool created in Python enabling automated Infotainment testing at scale saving 100s of human hours.
- Initiated, designed, and delivered dSPACE license restructuring efforts that freed up $80k worth of wasted software licenses while also allowing team to scale up from 10 to 40 engineers.
- Boosted testing efficiency with a Python-based automated Electronic Latch feature testing fixture, enabling continuous 24/7 remote testing and accelerating product development.

HIL Engineer, EASi (Contract at Ford) – Dearborn, MI   June 2012 – Apr 2013
- Led HIL Testing activities for HIL subsystems by integrating and extending AutomationDesk solutions.
- Improved Robotic HMI tester by increasing maintainability and setup time by 50%.
- Slashed HIL part costs by 75% through BOM management of 3 vehicle platforms, involving 100s of components.

Intern, Fraunhofer USA – Plymouth, MI   Oct 2011 – Mar 2012
- Validated and aligned high-power Diode Laser systems.
- Supported run-off production assisting engineers in assembly and fixture design.

Summer Intern, Institute for Imaging Research – Windsor, ON   Jun 2011 – Oct 2011
- Utilized MATLAB to analyze for performing root-cause analysis and modeling of Ultrasonic sensor noise.
- Presented data and conclusions to leadership of the institute at end-of-term.

Education

University of Windsor – BSc in Physics   Oct 2011
University of Windsor – BASc in Electrical Engineering   Oct 2009