Shivaram (Shiv) Viswanathan

Passionate about helping to create and improve Software and Hardware Products that Customers love

+1 2488040427 skannima@mtu.edu https://www.linkedin.com/in/shivaramkv/ Washington DC / Remote

EXPERIENCE

Product Lead - Self Driving Vehicle Capabilities

Aurora Innovations (previously Uber ATG) 05/2018 - Ongoing
Pittsburgh, PA/Remote https://aurora.tech/

Developing Products and capabilities for Autonomous Trucks and Passenger Cars

- **Product Management-Autonomy Software:** Developed and owned the performance of up-to four self-driving vehicle capabilities. Define clear and comprehensive *requirements*, author *Capability Definition Document* and decompose them into actionable, testable in-variants for autonomy software engineers. Defining and tracking *key metrics* of software performance. Understand the problem space and help them prioritize the right long-term solutions to be working on. Run useful *trade studies* that inform where to allocate risk and complexity across the system. Develop novel *test and evaluation strategies* that are designed to illuminate where performance needs to improve. Drive and oversee their execution, and communicate *results and metrics* to stakeholders.
  Tools Used: Python, Google Docs,Sheets - Data analysis, Lucid Charts
- **Project Management:**Creating High-level tasks → EPIC-stories-subtasks for each feature and assigning to team members. Handle daily and weekly Sprint meetings to track status and report at Leadership Weekly and Monthly All-Hands.
  Tools Used: JIRA - Portfolio, Agile - SCRUM
- **Technical Leadership-System Architecture :** Lead a team of up-to 6 systems engineers to manage the feature-based product development life cycle. Generate a system design and interface models of the software system to show how a feature is implemented. Great understanding of safety-critical software architecture.
  Tools Used: SysML, Github

Senior Systems Integration Engineer, Electric Vehicle Software Development and Test

Lucid Motors Inc - Luxury Electric Car Startup 03/2016 - 05/2018
Menlo Park, CA and Fremont, CA https://lucidmotors.com

Worked on the Alpha Prototype of "Lucid Air" electric car

- **Technical Leadership:** Lead the Systems Integration Project from start to end of the 18 months long Alpha prototype electric vehicle development project. Reported and demonstrated project status to Director and CEO on a regular basis. Presented in public events and roadshows.
- **Product Management:** Worked with software engineers to develop requirements for the user interface features and the powertrain and battery-related features. Assisted in capturing system design through models and testing assurance to ensure feature completeness.
  Tools Used: JAMA Requirements, JIRA, Vector CAN Tools
- **Project Management:** Lab Manager for the 12V test system. Managed the purchasing, inventory, and cost of the test lab. Vendor and supplier management - worked with tier 1 suppliers for our vehicle on a weekly basis to match the timeline, delivery, and technical queries.
  Tools Used: JIRA, Smartsheets.

Electronics Integration Engineer - Vehicle Electronics

Cummins Inc - On Highway Truck Engine Manufacturer 2015 - 2016
Columbus, IN https://cols.cummins.com/cols/Home.do

Customer Liason: Worked on the Customer Engineering Team to support the Integration of Electronic components related to Engines in the OEM Vehicles. Created Technical Documentation of Cummins ECU interfaces for the customer.

Software Engineer - Car Multimedia

Bosch - Tier One Automotive Electronics Supplier 2011 - 2013
Coimbatore and Bangalore, India https://www.bosch-india-software.com/en/

Software Development: Developed C++ software for Car Multimedia and In-Vehicle Infotainment System for major OEMs like Suzuki, GM, etc.
User Interface Design: Created UI interfaces for Car Navigation systems using Qt/QML.

EDUCATION

Master of Science - Electrical Engineering

Michigan Technological University
http://mtu.edu/

08/2013 - 05/2015 Houghton, MI

- Specialized in Hybrid Electric Vehicles and Project Management

ACHIEVEMENTS

Professional Patent

"A method and device for fuel management in a vehicle". India, Patent Co-Author, 4379/CHE/2013
Filed September 27, 2013
Robert Bosch Car Multimedia Department

Project Management Competition

Secured Second Place among ten university teams for Michigan Technological University in **The Project 2014 – Student Competition, West Michigan Chapter of the Project Management Institute (PMI)** [Jan – April 2014] https://wmpmi.org/THEproject

CERTIFICATIONS

Uber - Harvard University - Executive Education - Live Online Lectures

Eight Live Online Lectures and Case Study Sessions as part of Uber - Harvard Collaboration on Leadership and Culture (Aug 2019 to Feb 2020)

Credential of Readiness (CORe) - Harvard Business School Online - Pass with Honors

Business Analytics, Economics for Managers and Financial Accounting - (Oct 2019 to Mar 2020)

SOFTWARE TOOLS

Python **JIRA** **SysML/UML**
Machine Learning **Github** **Linux**

INDUSTRY EXPERTISE

Technical Product Management

Program/Project Management

OTHER INTERESTS

Toastmasters !

Non Fiction Books !

Percussion Musical Instruments !

Shivaram (Shiv) Viswanathan

Passionate about helping to create and improve Software and Hardware Products that Customers love

+1 2488040427 skannima@mtu.edu https://www.linkedin.com/in/shivaramkv/ Washington DC / Remote

PRODUCTS THAT I HAVE SHIPPED

ML Software Product - Construction Zone Maneuver Capability for a Self Driving Truck - Aurora

Product Goal to Increase the miles per autonomy intervention for the self-driving truck on a highway.

- Review the manual logs and decipher data from them (log parsing, google sheets, python) and understand how a manual driver performs
- Define the frequency of scenarios and the necessary ego vehicle behavior.
- Prioritizing the capabilities and scenarios based on KPIs.
- Product capability document authoring includes the data analysis, scenarios and potential vehicle behaviors and 3D simulation test modalities.
- Product includes multiple ML models (perception, motion planning), ML platform and Robotics (vehicle dynamics) software modules
- Key metrics: Miles per intervention for an autonomous truck on highway.

ML Software Product - Autonomous Adaptive Cruise Control Capability for a Self Driving Car - Aurora / UberATG

Product Goal to Improve the comfort of the self-driving car passenger in an urban environment

- Goal to minimize the number of high jerk and braking events of a self driving car, while following a lead vehicle through the city streets.
- Data analysis to understand the current state of the software performance
- Define the product capability requirements needed and break it down to system and software requirements.
- Work with Simulation to validate the product before shipping.
- Key Product Metrics: Comfort buffer violation frequency, Miles per Bad Experience (MBE)

Vehicle Emulator Product for an Electric Vehicle - Lucid Motors

Product Goal to reduce vehicle software deployment time and meet the Alpha prototype vehicle launch schedule.

- Designed and Created an Emulator (along with UI, Backend Software and Hardware teams) to mimic the test car environment for static tests and basic dynamic tests including state transition and conditional tests.
- Performed user feedback sessions, requirements documentation, and went through the full cycle of concept, definition, MVP launch and multiple iterations.
- Key Product metrics: Comparable latency, reliability and user experience to the real world environment.
- Improved software release cycle efficiency from 5 days to 2 to 3 days, more than 50% improvement.

Vehicle Data Logger and Visualizer Product for an Electric Vehicle fleet - Lucid Motors

Product Goal to provide data access pipeline of the vehicle fleet data deployed on the road.

- Worked with the UI/UX, Software and Hardware team to design and develop a Data logger hardware and a front end data visualisation tool in Grafana.
- Detailed Product Requirements Document, User stories, System Design and Project Management.
- Developed MVPs and went through multiple iteration cycles and variants before launching a final product.
- Key product metrics : Data storage, Cycle time.

Stop-Start Software Product for Hybrid School Bus - Cummins

Product Goal to improve fuel economy of a school bus by ~ 3 to 10%

- User Interface, Hardware and Back-end software product to improve fuel economy for school buses.
- Analysed the user needs of a typical school bus driver during a stop start maneuver.
- Developed Product Requirements Document for a successful start and stop sequence of the vehicle.
- Worked with Software engineers to implement these features in the code and test it in the bus with bus drivers.
- Analysed data and key metrics of the product and provided product improvement recommendations.
- Implemented in a customer bus manufacturer's vehicle and helped in initial integration and product testing.

Car Multimedia HMI App for a Hybrid Electric Car - Bosch

Product Goal to save time and money for the vehicle driver during the task of refueling/recharging a hybrid electric vehicle.

- A UX/HMI product to predictively provide assistance to the driver on the most economical way of fueling/charging their hybrid electric vehicle on the go.
- Developed Product Requirements, Design Documents and presented to internal and external customers/stakeholders.
- Created an HMI mock up along with Design team, explaining the UI and transitions in Qt/QML
- Worked with Software engineers to understand feasibility and system design.
- Received a Patent for the Product.