Utkarsh Gupta

https://www.linkedin.com/in/imutkarshgupta/

Email : emailtoutkarshgupta@gmail.com
Mobile : +1-312-363-9954

Automotive-focused Software Engineer with more than 3 years of experience in software system engineering and testing. Proficient in Python, C++, and Linux, with familiarity in 5G o-RAN and ADAS technologies. Experienced in creating automated testing suites and troubleshooting software issues. Leveraging a solid understanding of automotive software systems and a hands-on approach to problem-solving.

PROGRAMMING SKILLS

- **Scripting Languages**: Python, Scons, C++, C

- **Platform**: AWS/Azure IoT, Visual Studio, GDB, VIM

- **SCM tools**: Perforce, Git, SVN

- **Hardware**: CAN, ISOBUS, UART, SPI, I2C

EXPERIENCE

- **Tapfin-Qualcomm(Collabera)** — San Diego, CA
  SW Engineer — *March 2022 - Current*
    - **software delivery**: Efficiently managed software delivery through build failure resolution, component dev teams collaboration, and the orchestration of CI/CD integration, leveraging Perforce for version control.
    - **5g o-ran testing**: Engaged in 5G o-RAN testing with comprehensive test plans, various scenarios, and defect documentation using JIRA.
    - **axiom deployment**: Facilitated scripted automated testing deployment through proficient use of Python, Scons, ADB, Linux commands, continuous integration through GitLab.
    - **tools proficiency**: Utilized various tools such as QXDM (qualcomm log analysis tool), Wireshark, MAC-Emulator, CAPLR (network packet sniffer), Signal Analyzer

- **ARi** — Peoria, IL
  Embedded System Engineer ll — *June 2021 - March 2022*
    - **virtual terminal**: Modified existing and added more functionality on user interface of virtual terminal, gain exposure to ISOBUS protocol, language used C. Wrote test scripts using Python to perform GNSS application level testing on terminal devices.
    - **ecu controller**: Contributed to the development of low light feature in the ECU, gain exposure to CAN protocol
    - **code collaborator**: Participated in code reviews and documented changes made to the codebase.

- **IsmileTechnologies** — Bolingbrook, IL
  IoT Engineer Intern — *Sep 2020 - Dec 2020*
    - **IoT**: Participated in the development of scalable hardware projects, notably the Covid Analyzer. Acquired key competencies including the use of Azure cloud services for IoT control, deployment of computer vision models, Linux scripting, and backend development using Python and Node.js.

- **TCS** — Nagpur IN
  System Engineer — *Jan 2017 - Apr 2018*
    - **Hardware In Loop Testing**: Contributed to the development of an automated testing framework for desktop software using Python,C++ macros, and CAPL. Wrote and maintained custom scripts that improved system efficiency and reduced performance time by 50%.
    - **ADAS ECU Testing Bench**: Performed failsafe testing on ECUs for a Japanese automotive major company. Gained exposure to HIL testing tools such as CANoe, CANape, and Dspace System. Simulated various real-world scenarios and validated the functionality of the ECUs in a controlled and safe environment.

Relevant Projects

- **Automated Vehicle System-Level Simulation and Testing Environment::Aug 2023 Project**: Designed and implemented a system-level vehicle simulation environment, using Python to simulate complex behavior modeling. Created virtual Battery Management System (BMS) and actuators for real-world mimicry, and C/C++ firmware for imitating an actual vehicle's firmware responses. Buit a user friendly dashboard for real-time data display.
- **Hyperloop pod**: Worked in the Electronics and Control team, responsible for the operation of BLDC motors and use of hardware such as Jetson TX2, Raspberry PI, telemetry, and IMU. Contributed to the development of a backend in Python
- **EasyNN library for Academic project**: Developed EasyNN library with Neural Network algorithm and its applications in python & created C++ interoperation tool with Numpy arrays, designed to support matrices/tensors.
- **Smart Plug Simulator**: Contributed to the development of a smart hub dashboard for an academic project focused on IoT, utilizing a full-stack web application. Collaborated with a team to develop the dashboard's features, including grouping and controlling IoT devices through a Restful API. Utilized skills in C++ and JavaScript to develop an backend. Designed and implemented an IoT simulator to communicate with the IoT hub using open protocols such as HTTPS and MQTT, ensuring seamless integration and functionality.

Education

- **Illinois Institute of Technology** Chicago, IL
  Master of Science in Computer Engineering; GPA: 3.44 *Aug. 2019 – May. 2021*
  Related Course: Object oriented programming & Machine learning, Application-Software Design, Computer Vision, Hybrid electric vehicle drive

- **Oriental Institute of Science and Technology** Bhopal, India
  Bachelor of Engineering in Electrical and Computer Engineering; GPA: 7.89/10.0 *Aug.2012 – May. 2016*