# SYED TAQI HAIDER

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Engineer with a strong technical background in software development and proven experience in delivering high performance systems in the automotive industry. Actively looking to transition to a full-time software development role.

## SKILLS

**Programming Languages:** C, C++ (11/14/17), Python, MATLAB, HTML, CSS, JavaScript
**Tools/Frameworks:** Linux, Git, Subversion, Gitlab CI, Tensorflow, Keras, Numpy, Scikit-learn, Eigen, Bootstrap, Flask, Artifactory, Google Test, ROS, SQLite, OpenCV
**Computer Science:** Data structures, Algorithms, Operating Systems, Compilers, Object Oriented Programming, High Performance Computing, TCP/IP Networking
**Embedded Systems:** Microcontrollers, FPGAs, OS Development, Drivers. freeRTOS
**Project Management:** Agile, Scrum, Waterfall, JIRA
**Languages**: English, Hindi, Urdu

## WORK EXPERIENCE

**SEPTEMBER 2019 – PRESENT**
### DRIVER INFORMATION PRODUCTS ENGINEER, JAGUAR LAND ROVER
GAYDON, UNITED KINGDOM

- Software product owner for instrument clusters on vehicles such as the 2020 Land Rover Defender and the upcoming 2022 Range Rover, totalling over 500,000 customer vehicles so far.
- Delivered complex new software features such as cybersecurity, software-over-the-air etc. by working across the SW development lifecycle, from gathering user requirements to delivery, validation, and signoff.
- Fixed over 800 software defects by leading defect reviews, tracking JIRA issues, analysing vehicle logs, and reproducing issues on test rigs using CANalyser.
- Delivered 2 quality improvement projects – reduced the end-to-end system latency through pipeline optimisation, introduced stress testing to improve menu related testing.

**SEPTEMBER 2017 – SEPTEMBER 2019**
### GRADUATE ENGINEER, JAGUAR LAND ROVER
GAYDON, UNITED KINGDOM

- Joined the Electrical & Software Engineering department and completed placements in the following areas:
- ADAS Pre-Development: developed the perception subsystem for an ADAS level 3 simulation & test platform. Created a sensor library for radar and camera sensors by modelling real-world sensors. Worked with MATLAB, IPG Carmaker and Subversion.
- Vehicle Domain Controller: produced high performance C/C++ software components such as CAN decoders for an electronic control unit running multiple Linux-based operating systems. Achieved 100% test coverage on these components by writing unit tests using Google Test. Automated system test activities using Gitlab CI. Worked with C, C++, Python, Linux, Gitlab, JIRA, Artifactory, Google Test and RESTful APIs.
- Electrical Vehicle Architecture: created a proof-of-concept for a new distributed service-oriented architecture. Developed a real-time scheduler and C++ wrapper for porting legacy Simulink models to the new architecture. Confirmed that system performance met timing/resource requirements by testing on Hardware-in-the-Loop test rigs. Worked with C++, Simulink (Embedded Coder), freeRTOS, TCP/IP, Git and JIRA.

**JUNE 2016 – SEPTEMBER 2016**
### FPGA DEVELOPMENT INTERN, MATHWORKS
GLASGOW, UNITED KINGDOM

- Developed Simulink examples and documentation for FMCW radar, FM receiver and other applications using Simulink and Xilinx Zynq SoCs. The SoC integrated an ARM Cortex-A9 processor and FPGA programmable logic.

## EDUCATION

**SEPTEMBER 2013 – JUNE 2017**

### **MENG (HONS) ELECTRICAL AND ELECTRONIC ENGINEERING,** UNIVERSITY OF BRISTOL

BRISTOL, UNITED KINGDOM

- Graduated with top marks (First Class Honours). Overall mark: 77%.
- Received the Paul Dirac scholarship in Electrical and Electronic Engineering in my 1st year.
- 3rd year group project: developed a semi-autonomous buggy that navigated an obstacle course to find and interrogate targets. Finished as part of the winning team in our cohort.
- 4th year individual research project: GPU architecture overlay on an FPGA SoC. Benchmarked open-source GPU architectures on a Zynq SoC for highly parallel computing applications such as image/video processing.

**MARCH 1999 – MARCH 2013**

### **CBSE (INDIA),** INDIAN SCHOOL AL GHUBRA

MUSCAT, OMAN

- Year 12 result: 94%. Subjects: Physics, Chemistry, Mathematics, Engineering Graphics, English.
- Head boy (year 12).

## PROJECTS

- MorphiOS: created my own operating system from scratch in C++. Developed the kernel and drivers for mouse, keyboard and graphics. Implemented support for interrupts, multi-threading, dynamic memory allocation and more.
- Stock Trading App: a basic stock trading web app written in Flask (Python). Allows the user to create an account, look up live quotes using the IEX API, and buy/sell stocks. Deployed the application to Heroku.
- Behavioural Cloning: built and trained a convolutional neural network in Python (Keras/Tensorflow) to predict a vehicle's steering angle using camera images as input. Employed normalisation, dropout, data augmentation and other ML techniques to improve accuracy. Used Python generators to reduce memory consumption.

## CERTIFICATIONS

- CS50x: Introduction to Computer Science, Harvard University
- Self-Driving Car Engineer Nanodegree, Udacity
- Technical Accreditation Scheme – Robust Automotive Embedded Systems, University of Warwick