VINUSH VIGNESWARAN

Automation Test Engineer

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EXPERIENCE

Automation Test Engineer Placement
The Software Institute
Nov 2021 - May 2022

`C#` `SpecFlow` `Selenium`

- Developed a BDD framework and conducted regression tests on the NHS Covid Pass web-app using SpecFlow and Selenium.
- Closely worked with NHS and Qualitest clients to create user stories and implement scenario outlines/step definitions.

Control Systems & Software Summer Intern
UK Atomic Energy Authority RACE
July 2020 - Sept 2020

`Beckhoff TwinCAT 3` `QML` `Python`

- Developed the control system of a MIG Welder attachment for the Octant 1 Boom (a robotic articulated arm), used on JET fusion reactor.
- Integrated the PLC control system with a human-machine interface, developed using Python and QML.
- Simulated server-client communications by integrating UaExpert with Python project.

Head of Vehicle Dynamics
Formula Student
Sept 2019 - June 2020

`MATLAB` `Simulink` `CATIA` `Solidworks`

- Led a sub-team to design and build steering, power transmission and suspension system for the electric Formula Student competition.

EDUCATION

MSc in Artificial Intelligence (Distinction)
The University of Edinburgh
Sept 2020 – Sept 2021

- Applied Machine Learning, Deep Learning, Reinforcement Learning, Algorithmic Game Theory, Natural Language Understanding, Generation, and Machine Translation.

BEng in Mechanical Engineering (First Class Honours)
University of Birmingham
Oct 2016 – Aug 2020

- Computing for Engineers (Python & C), Engineering Mathematics (MATLAB), Electronics, Mechatronics & Control Engineering.

ABOUT ME

I am a focussed and driven software engineer with over 3+ years of experience in programming and machine learning. I have industry experience in software testing, designing, and conducting complex test cases and scenarios for projects such as the NHS Covid Pass. My passion lies in building robust software for automation and understanding the underlying architecture of cutting-edge technologies. I am excited to develop my current skillset and actively contribute to new and challenging projects.

SKILLS

Programming Languages:

`C#` `Python` `Java` `MATLAB`
`Beckhoff TwinCAT 3 (LL & ST)`

Technologies:

`MySQL` `React` `Spring` `AWS` `Git`

Testing Tools:

`SpecFlow` `Selenium` `Cucumber`

Machine Learning Libraries:

`PyTorch` `TensorFlow` `Keras` `NLTK`
`pandas` `Numpy` `Scikit-learn`

Languages:

`English (native)` `French (advanced)`

CERTIFICATIONS

ISTQB Certified Tester | 2021
Foundation level qualification for software testing fundamentals.

PROJECTS

Full-Stack Web App: The Ad-hoc Chef
Web Dev Project
Nov 2021 - Dec 2021

`Java` `React` `MySQL` `AWS`

- Developed a full-stack scalable Cocktail Recipe website from back-end (Java, REST API, SQL, AWS Services) to front-end (React, JavaScript).
- Automated Unit and BDD testing process using Jenkins, to trigger JUnit, Cucumber and Selenium tests
- Analysed code coverage and code smells using SonarCloud.

Machine Learning for Visual Storytelling
MSc Dissertation at University of Edinburgh
Jan 2021 - Apr 2021

`Python` `PyTorch` `NLTK` `Facebook Detectron`

- Integrated state-of-the art deep learning techniques such as object detection (Faster-RCNN), and transformers for the Visual Question Answering (VQA) segment of the system.
- Developed a sentence embedding model, and utilised the embeddings to extract relevant portions of stories.
- Evaluated the complete pipeline via user studies and proposed automated metrics to evaluate the lexical diversity, coherence and fluency of this open-ended text generation task.

Intelligent Energy Management Control for Plug-in Hybrid Electric Vehicle
BEng Final Year Project at University of Birmingham
Sept 2019 - May 2020

`MATLAB` `Simulink`

- Built an intelligent energy management method for plug-in hybrid electric vehicle (PHEV) based on Fuzzy Logic and Particle Swarm Optimisation (PSO), to increase fuel economy.
- Developed Particle Swarm Optimisation algorithm to optimise Fuzzy Logic Controller (FLC).
- Simulated and analysed drive cycle performance, compared with different FLC optimisation techniques, such as Genetic Algorithm and Simulated Annealing.

Virtual Assistant and Home Automation
IoT Project
Oct 2016 - Oct 2017

`C++` `Python`

- Designed GUI (tkinter) and integrated Google's Cloud text-to-speech and speech-to-text API.
- Included rule-based commands and NLP techniques such as vector representation to account for similar natural language inputs.
- Integrated Arduino with virtual assistant to control blinds, lights and radiator.

ACTIVITIES

Head of Vehicle Dynamics, UBeRacing | 2020
Developed a formula-style electric vehicle for the Formula Student EV competition representing University of Birmingham.

AI Virtual Summer Program, R42 Group | 2020
Devised a project outline for a stock market predictor using Reinforcement Learning.

2nd Prize Winner Speak out for Engineers Challenge, IMechE | 2019
Presentation titled "From the Brain in the Machine to the Machine in the Brain" exploring AI in brain-computer interface for prosthetic limb control.

Volunteer at Ghana, VSO | 2017
Worked with Volunteer Services Overseas (VSO) for a community development program in rural Ghana.

The Challenge Youth Club, NCS | 2015
Campaigned to bring awareness of youth clubs, to reduce youth crime & homelessness in parts of London.

HOBBIES

`Hiking` `Reading` `Travelling` `Electronics & Automation Projects` `Podcasts` `Swimming` `Chess`