

VINUSH VIGNESWARAN

Software Engineer

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EXPERIENCE

Graduate Automation Test Engineer

The Software Institute (Qualitest)

Nov 2021 - Present

C# SpecFlow Selenium

- Developed a testing framework and conducted regression tests on the NHS Covid Pass web-app using C#, .NET5, SpecFlow and Selenium.
- Closely worked with NHS and Qualitest clients to create user stories and implement test scenarios.
- Increased test efficiency by 40% through code optimisation and introduced parallel cloud testing into current strategy.

Control Systems & Software 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 focused and driven engineer with over three 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 skill set and actively contribute to new and challenging projects.

SKILLS

Programming Languages:

C# Python Java MATLAB

Beckhoff TwinCAT 3 (LL & ST)

Technologies:

MySQL ReactJS Spring AWS

Git Django

Testing Tools & Management:

SpecFlow Selenium Cucumber

Jira

Machine Learning Libraries:

PyTorch TensorFlow Keras NLTK

pandas Numpy Scikit-learn

Engineering Design software:

SolidWorks CATIA CES EduPack

ANSYS CFX ABAQUS (FEA & CFD)

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