

VINUSH VIGNESWARAN

Software Engineer

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EXPERIENCE

QA Automation Engineer

V-Nova Ltd

Jan 2023 - Present

Python Flask FFmpeg GitLab MongoDB Appium

- Engineered and implemented a Flask-based backend for a web tool, utilising MySQL and Appium, to efficiently test video codec configurations on multiple mobile devices.
- Developed a fast batch video encoding and decoding testing framework using Python and behaviour driven testing methodologies.
- Reduced the testing process of ~400 tests from 22+ hours to under 2 hours using parallelisation, and caching techniques.
- Implemented CI/CD pipelines with Jenkins, and employed dockerisation, enabling quick and consistent deployment across various machines and environments.
- Collaborated closely with stakeholders to identify and address crucial requirements for video analysis, including the validation of video frame drops, pixel mismatch, and bitrate control.

Graduate Automation Test Engineer

Qualitest (The Software Institute)

Nov 2021 - Jan 2023

C# SpecFlow Selenium

- Developed a BDD 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.
- Improved Azure DevOps CI/CD pipeline and increased test efficiency by 40% through code optimisation and introducing parallel cloud testing.
- Utilised Jira and Confluence to track project progress and organise documentations.
- Developed Intelligent Automation testing strategy to integrate into current workforce.

Control Systems & Software Intern

UK Atomic Energy Authority RACE

July 2020 - Sept 2020

Beckhoff TwinCAT 3 QML Python UAExpert

- 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.

ABOUT ME

I am a focused and driven engineer with over three years of experience in programming and machine learning. I currently develop software that test the performance and functionality of video codecs enhanced with Low Complexity Enhancement Video Coding (LCEVC). 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:

Python C# Java MATLAB

Beckhoff TwinCAT 3 (LL & ST)

Technologies:

Git Jenkins MySQL ReactJS

AWS Django FFmpeg

Android Studio

Machine Learning Libraries:

Cohere PyTorch TensorFlow

Keras NLTK pandas Numpy

Scikit-learn

Testing Tools & Management:

Behave Allure Reporting SpecFlow

Selenium Cucumber

Languages:

English (native) French (advanced)

CERTIFICATIONS

ISTQB Certified Tester | 2021

Foundation level qualification for software testing fundamentals.

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.

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

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.
- Simulated and analysed drive cycle performance, compared with different FLC optimisation techniques, such as Genetic Algorithm and Simulated Annealing.

ACTIVITIES

2nd Prize Winner of Hackathon, Cohere | 2022

An AI-system capable of debating complex topics using advanced NLP models.

Sustainability Challenge, BCG | 2022

A recommender system that will optimise your AWS cloud resources strategy.

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.

Volunteering in Ghana Africa, 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 & Trekking Reading non-fiction

Travelling Podcasts Swimming

Electronics & Automation Projects

Chess