VINUSH VIGNESWARAN

Automation Test Engineer

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EDUCATION

MSc in Artificial Intelligence

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.
- Achieved Distinction

BEng in Mechanical Engineering (Honours)

University of Birmingham
Oct 2016 – Aug 2020

- Computing for Engineers (Python & C), Engineering Mathematics (MATLAB), Electronics, Mechatronics & Control Engineering.
- Achieved First Class (4.0 GPA)

EXPERIENCE

Graduate Automation Test Engineer

Qualitest/ Software Institute
Nov 2021 - Present

Java | React | MySQL | REST API | AWS

- Training: Developed a scalable cocktail drinks website and database using Java, REST API, React, MySQL and AWS.
- Automated testing process using Jenkins, to trigger JUnit, Cucumber and Selenium tests.

Control Systems & Software Summer Intern

UK Atomic Energy Authority RACE
July 2020 - Sept 2020

Beckhoff TwinCAT 3 | QML | Python | UaExpert | C

- 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.

ABOUT ME

I am a passionate machine learning engineer, recently graduated from the University of Edinburgh with a master's in Artificial Intelligence. I am specialising in Machine Learning, Deep Learning and Natural Language Processing. I enjoy building robust software for automation and implementing statistical machine learning solutions to solve intriguing data science and control problems. My passion lies in finding patterns and making sense of large unstructured data, whether textual or numeric.

CERTIFICATIONS

ISTQB Certified Tester | 2021

Foundation level qualification for software testing fundamentals.

SKILLS

Programming Languages:

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

Technologies:

React | Java Spring | MySQL | AWS | Git | Jenkins | Selenium | Cucumber

AI Tools:

PyTorch | TensorFlow | Keras | NLTK | pandas | Numpy | Scikit-learn | matplotlib

Engineering Design software:

SolidWorks | CATIA | CES EduPack | ANSYS CFX | ABAQUS (FEA & CFD)

Languages:

English (native) | French (advanced) | Tamil (spoken)

PROJECTS

Collaborative Question-Guided Visual Storytelling

MSc Dissertation at University of Edinburgh
Jan 2021 - Apr 2021

Python | PyTorch | NLTK | Facebook Detectron

- Built an application for automated story generation with multi-turn user interaction, whereby the user guides the generated storyline.
- 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.
- Used sequence-to-sequence encoder-decoder framework with attention mechanism for story generation.
- 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.
- Modelled simulation of PHEV energy management and control system based on 2014 BMW i3 PHEV data, on MATLAB Simulink.
- 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

Personal 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 | Martial Arts | Chess