Abdul Hazim

https://abdulhazim.wordpress.com/

Email : abdhazim4343@gmail.com
Mobile : +60-10-463-8306

EDUCATION

University of Malaya Kuala Lumpur, Malaysia
Master of Computer Science (Applied Computing); N/A *Sep. 2018 – July 2020*

University of Nottingham Nottingham, England, United Kingdom
BSc (Hons) Computer Science with Artificial Intelligence; First (70%) *Sep. 2017 – Jul. 2018*

University of Nottingham Malaysia Campus Semenyih, Selangor, Malaysia
BSc (Hons) Computer Science with Artificial Intelligence; First (77%) *Sep. 2015 – Jul. 2017*

EXPERIENCE

BoomGrow Farms Taman Tun Dr Ismail, Kuala Lumpur, Malaysia
Machine Intelligence Engineer *Jan. 2019 - Present*

- **Imaging Solutions**: 3D scanner using laser line triangulation. It's purpose is to scan seedlings to study and pick the ones that grow the fastest. Plant phenotyping chamber which utilises Structure from Motion concepts (SfM) to capture a 3D model of a plant.
- **Embedded Development, IoT**: Various prototypes developed for various use cases. Familiar with I2C, UART, Ethernet communication. Also, worked with various sensors and actuators.
- **Optimisation Algorithms**: Used Simulated Annealing to optmise the placement of LED chips on the board for optimal light distribution.
- **MEAN Stack Backend**: RESTful API built using Node JS, Express JS, Mongoose and Postgresql for the various micro-services that will be deployed.

Crops for the Future Research Centre (CFFRC) Semenyih, Selangor, Malaysia
Student Placement in the form of a Group Project *Oct. 2016 - Apr. 2017*

- **Google Cloud Platform**: The Google Cloud Platform is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products. At CFFRC, I mainly utilised the Google Maps API.
- **LAMP Stack: Linux, Apache HTTP Server, MySQL, PHP**: LAMP is a web service/application model. At CFFRC, I utilised it to build 2 web applications which are part of the automated data-gap filling system.
- **Soft Skills**: Being elected team leader allowed me to experience the real-world conditions in a Software Development team. It also was the opportunity to practice Software Engineering methodologies.

PROJECTS

- **Inception v3 Transfer Learning to 10-Classes from PASCAL VOC [Apr 2019]**: Performed transfer learning on Inception v3 Convolutional Neural Network (CNN) that was trained on ImageNet dataset. This is to adapt the model to 10-Classes picked from the PASCAL VOC 2012 dataset.
- **Artificial 'Bokeh' using Binocular Stereo Vision [Nov 2018]**: 'Bokeh' is a term used by photographers to produce out-of-focus style effects to enhance the aesthetic value of an image. It is used selectively, blurring the background to enhance the importance of the subject in images. I developed a Python 3 programme in the form of a Jupyter Notebook that could produce the same effect without the use of expensive lenses and cameras.
- **Accelerating Optimisation using Machine Learning [Sep 2017 - May 2018]**: Research project to learn whether Machine Learning can be used to accelerate the optimisation of policies for the Online Bin Packing problem which is a toy problem with links to real-world logistical issues. The findings were inconclusive but led to the creation of more accurate research questions. C++ with embedded R instances were used.
- **Comparisons of Stereo Correspondence Algorithms [Apr 2018]**: Used MATLAB to implement and compare the quality and time complexity of various algorithms that produces depth map of a scene from stereo images.
- **Distributive Foraging Reflexive Multi-Agent System [Apr 2018]**: Used Java to implement a Multi-Agent System to play a game of waste collection and disposal. The agents using the algorithm I developed were able to effectively cooperate and avoid competition to further enhance the performance of waste disposal in the game which led to higher scores.

- **Foraging Reflex Agent with Pseudo-deliberation [Mar 2018]**: Used Java to implement a Single-Agent System to play a game of waste collection and disposal. The agent using the algorithm I developed was able to effectively explore the environment whilst maintaining enough fuel to survive in the game. It also remembers areas which had high density of waste generators. These features led to high scores.
- **Klang Valley KTM Komuter e-Schedule for Android [Sep 2017]**: A simple Android application to allow users to easily find out the departure or arrival time of a train. It's graphical user interface (GUI) is optimised for quick operations with a feature to save important routes to the user. This is accomplished with easy gestures, large text and large buttons. For the sake performance, only a locally stored database is used.

Programming Skills

- **Languages**: C, C++, Java, Python, MATLAB, SQL, Javascript, CSS, HTML, PHP, Haskell, R, Arduino, ARM mbed

- **Imaging Technologies**: OpenCV, PointClouds, MATLAB Computer Vision and Image Processing Toolbox

- **Application Technologies**: LAMP Stack, MEAN Stack, Google Cloud Platform, Microsoft Azure

- **Embedded Technologies**: Arduino, Raspberry Pi, ARM

- **OS Technologies**: Ubuntu/Debian, Windows

- **Data Technologies**: R via RStudio, Python via Jupyter Notebook, Microsoft Excel

- **Development Technologies**: Git, Microsoft Visual Studio, Jupyter Notebook, MATLAB, Postman