Aaron Low Weng Soon

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TECHNICAL SKILLS

Programming Languages: Python • C++ • C#

Deep Learning Frameworks: PyTorch • TensorFlow • Keras

Data Science Tools: Pandas • SQL

Cloud Development: Serverless • AWS Services • Terraform

Web Development: HTML • CSS • JavaScript

Build Tools: CMake • Bazel

Operating Systems: Windows • Linux

Other Tools: Git • Jenkins • ROS • Docker • Bash • Unity

WORK EXPERIENCE

Motional   2020 - 2024
Senior Research Engineer (Sensor Calibration) • *2023 - 2024*   Singapore
Research Engineer (Sensor Calibration) • *2020 - 2023*

• Developed solutions for sensor (cameras, LIDARs, radars, IMU) calibration and validation of autonomous vehicles.

• Researched deep learning solutions for sensor calibration as well as implementing the infrastructure for training and evaluation.

    • **UniCal: a Single-Branch Transformer-Based Model for Camera-to-LiDAR Calibration and Validation** is a novel architecture for carrying out camera-to-LiDAR calibration and validation leveraging self-attention mechanisms using a Transformer-based network.

• Built and maintained cloud-based systems for continuous validation of vehicle sensor data.

    • Our automated system ran daily on a fleet of hundreds of vehicles allowing data-driven calibrations.

• Automated dataset generation and curation for algorithm research.

• Worked on vehicle hardware to deploy online sensor calibration algorithms.

Aptiv   2020
Autonomous Vehicle Intern (Sensor Calibration)   Singapore

• Researched deep learning solutions for camera-to-LiDAR calibration for autonomous vehicles.

• Deployed a **RegNet** based model into production with TensorRT.

Materialise   2016
Software Engineer Intern   Kuala Lumpur, Malaysia

• **Designed and developed a Microsoft Paint inspired application.**

Accenture   2015
Solution Architect Intern   Kuala Lumpur, Malaysia

• Development of front end retail system dealing mainly with system analysis and testing.

EDUCATION

Imperial College London   2018 - 2019
PhD in Machine Learning and Computer Vision (discontinued)

• **Supervisors:** **Kim Tae-Kyun** and **Loy Chen Change**

• **Research area:** 3D Pose Estimation

Imperial College London   2014 - 2019
Electrical and Electronic Engineering MEng

• **First Class Honours**

- Dean's List (top 10% of class) Year 2
- Thesis: <u>Depth to Colour Translation for 3D Hand Pose Estimation From Monocular RGB With Generative Adversarial Networks</u>
- **Selected modules:** Linear Algebra • Probability and Stochastic Processes • Machine Learning • Computer Vision • Algorithms and Complexity • Parallel Computing • Optimisation

HELP Academy   2013 - 2014
Edexcel A-Levels
- **4 A*** Chemistry • Physics • Mathematics • Further Mathematics

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TEACHING

<u>HELP University</u>   2019 - 2020
Lecturer, Faculty of Computing and Digital Technology
- <u>**Lectured introductory programming**</u>
- <u>**Presented deep learning tutorials to both staff and students**</u>

Imperial College London   2016
Undergraduate Teaching Assistant, Introduction to Computer Architecture
Taught ARM assembly during programming tutorials

Imperial College London Game Development Society   2015 - 2018
Co-founder and Secretary
Provided tutorials on game development using C# and Unity

PROJECTS

<u>Distance to Space 1000</u>   2024
Unity/C# Developer
- Entry to the SpeedJam 5 2024 game jam. A 2D card-based puzzle game written in Unity with C#.

<u>Without Abandonware</u>   2021
Unity/C# Developer
- Entry to the Game Off 2021 game jam. A 2D platformer written in Unity with C#.

<u>Autonomous Snack Delivery Android (ASDA)</u>   2017
Development of Robot Navigation
- Autonomous robot that is capable of manoeuvring a building and taking an elevator to obtain and deliver snacks.

<u>Emocoaster</u>   2017
C# Developer
- **Runner-Up ("Best Game")** Emotion matching game built using Microsoft Cognitive Services

<u>ParkWare</u>   2016
Web Developer
- **Prize Winner ("Best use of Amazon Web Services")** Parking space detection web service using machine learning to detect cars in parking lots.

LEARNING

<u>Data Science Nanodegree (Udacity)</u>   2021
- <u>Dog Breed Classifier Project Article</u>

<u>Deep Learning Specialization by Andrew Ng (Coursera)</u>   2018

LANGUAGES AND INTERESTS

Languages: English (Native) • Malay (limited working)

Interests: Game Development • Bouldering • Movies