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 of 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:** **Depth to Colour Translation for 3D Hand Pose Estimation From Monocular RGB With Generative Adversarial Networks**

• **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

HELP University **2019 - 2020**

Lecturer, Faculty of Computing and Digital Technology

• **Lectured introductory programming.**

• **Presented deep learning tutorials to both staff and students.**

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

Distance to Space 1000 **2024**

Unity/C# Developer

• Entry to the SpeedJam 5 2024 game jam. A 2D card-based puzzle game written in Unity with C#.

Without Abandonware **2021**

Unity/C# Developer

• Entry to the Game Off 2021 game jam. A 2D platformer written in Unity with C#.

Autonomous Snack Delivery Android (ASDA) **2017**

Development of Robot Navigation

• Autonomous robot that is capable of manoeuvring a building and taking an elevator to obtain and deliver snacks.

Emocoaster **2017**

C# Developer

• **Runner-Up ("Best Game")** Emotion matching game built using Microsoft Cognitive Services.

ParkWare **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

Data Science Nanodegree (Udacity) **2021**

• **Dog Breed Classifier Project Article**

Deep Learning Specialization by Andrew Ng (Coursera) **2018**

LANGUAGES AND INTERESTS

Languages: English (Native) • Malay (Limited Working)

Interests: Game Development • Bouldering • Movies
