

# Aaron Low Weng Soon

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## Work Experience

### Motional

Research Engineer (Sensor Calibration)

2020 - 2023

Senior Research Engineer (Sensor Calibration)

2023 - Present

- Research and development of solutions for sensor (cameras, LIDARs, radars, IMU) calibration and validation for autonomous vehicles
- Developed tools in C++ to enable users to visually inspect sensor calibration and run calibration algorithms
- Developed deep learning infrastructure with PyTorch as well as training and evaluating models
- Implemented data pipelines for analyzing metrics, collecting deep learning datasets leveraging SQL databases and cloud solutions

### Aptiv

2020

Autonomous Vehicle Intern (Sensor Calibration)

- Implemented deep learning based methods for sensor (cameras, LIDARs) calibration for autonomous vehicles based on RegNet
- Processed and curated datasets to train and evaluate deep learning models
- Deployed models into production with TensorRT

### Materialise

2016

Software Engineer Intern

- Designed and developed a Microsoft Paint inspired application
- Contributed to the development of 3D modelling software

### Accenture

2015

Solution Architect Intern

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 - 2018

Electrical and Electronic Engineering MEng

First Class Honours

Dean's List (top 10% of class) Year 2

Selected modules: Linear Algebra • Probability and Stochastic Processes

• Machine Learning • Computer Vision • Algorithms and Complexity •

Parallel Computing • Optimisation

Thesis: DEPTH TO COLOUR TRANSLATION FOR 3D HAND POSE ESTIMATION FROM

MONOCULAR RGB WITH GENERATIVE ADVERSARIAL NETWORKS

HELP Academy

2013 - 2014

Edexcel A-Levels

4 A\* Chemistry • Physics • Mathematics • Further Mathematics

## Projects

UniCal

2023

Researcher

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.

<u>Without Abandonware</u> Game Developer Entry to the <u>Game Off 2021</u> game jam A 2D platformer written in Unity with C#	2021
<u>Autonomous Snack Delivery Android (ASDA)</u> Development of Robot Navigation Autonomous robot that is capable of manoeuvring a building and taking an elevator to obtain and deliver snacks	2017
<u>Emocoaster</u> Game Developer Runner-Up ("Best Game") Emotion matching game built using Microsoft Cognitive Services	2017
<u>NeuroSpell</u> Python Developer Low-cost brain computing interface that allows motor impaired people to type by looking at an on-screen keyboard	2016
<u>ParkWare</u> Web Developer Prize Winner ("Best use of Amazon Web Services") Parking space detection web service using machine learning to detect cars in parking lots	2016

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## Technologies

Programming: Python • C++ • C# • SQL

Web Development: HTML • CSS • JavaScript

Deep Learning: PyTorch • TensorFlow • Keras • Pandas

Cloud Development: Serverless • AWS Services • Terraform

Other tools/frameworks: Jenkins • Ixc • ROS • docker • Bash • git • Unity

Operating Systems: Windows • Linux

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## Teaching

<u>HELP University</u> Lecturer, Faculty of Computing and Digital Technology <ul style="list-style-type: none"><li>• <u>Lectured introductory programming</u></li><li>• <u>Presented deep learning tutorials to both staff and students</u></li></ul>	2019 - 2020
Imperial College London Undergraduate Teaching Assistant, Introduction to Computer Architecture Taught ARM assembly during programming tutorials	2016
Imperial College London Game Development Society Co-founder and Secretary Provided free tutorials on game development using C# and Unity	2015 - 2018

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## Learning

<u>Data Science Nanodegree (Udacity)</u> <u>Dog Breed Classifier Project Article</u>	2021
<u>Deep Learning Specialization by Andrew Ng (Coursera)</u>	2018

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## Additional

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

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