ZIYI ZHU

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EDUCATION

University of Cambridge, Christ's College — **Cambridge, United Kingdom**
Master of Engineering — Expected 2022

- Results: First class; Top 4% and awarded College Scholarship
- Modules: Information and Computer Engineering, Electrical and Information Sciences, Instrumentation and Control
- Coursework: Python programming, MATLAB programming, data structures and algorithms, CAD with SolidWorks, structural project, conceptual product design, integrated mechanical and electrical design, hand-drawing skills
- Awards: Winner of Christ's College Art Prize 2021, Winner of CUES Hackathon 2021

Hwa Chong Institution — **Singapore**
GCE A levels — Jan 2016 – Nov 2017

- Grade A in Physics, Chemistry, Mathematics, Art, General Paper and Project Work
- Awards: Silver Award in Singapore Physics Olympiad**,** First Prize in Sovereign Art Foundation Students Prize

WORK EXPERIENCES

Ocado Technology — **London, United Kingdom**
Machine Learning Intern — Jul 2020 – Sep 2020

- Collaborated with 4 engineers to design an autonomous robot navigation and control system using end-to-end imitation learning
- Streamlined the dataset collection process (35,000+ data points) for training machine learning models in Python and TensorFlow
- Designed goal-conditional imitation learning network and devised custom loss function to enhance model performance by ~80%
- Benchmarked machine learning models in urban simulation using Unreal Engine 4 to discover optimal training parameters

University of Cambridge — **Cambridge, United Kingdom**
Research Intern — Jul 2019 – Sep 2019

- Independently designed and engineered a system with standard DSLR cameras, Arduino and Raspberry Pi to competently capture a 3D representation of a scene in the form of HDR light field for stereoscopic vision
- Assembled and calibrated the HDR Multi-Focal Stereo Display in collaboration with 4 postdoctoral researchers
- Formulated an algorithm for dividing an HDR film into clusters of scenes using MATLAB

HY M&E Consultancy Services — **Singapore**
Assistant Engineer — Mar 2018 – May 2018

- Explored the use of Computational Fluid Dynamics (CFD) simulations for precise evaluation of site-specific fan performance
- Developed an architectural visualization software in Unity Engine for in-depth evaluation of lightning protection in buildings
- Streamlined the diagnosis of faulty transformers (20+ clients) by coding a Windows application with custom diagnostic metrics
- Conducted industry research and shadowed an engineer on-site performing electrical circuit examinations

ACTIVITIES

Hack Cambridge 101 — **Cambridge, United Kingdom**
Team Leader — Jan 2020 & Jan 2021

- Designed trading algorithms using dual listing arbitrage and competed on virtual platform to achieve top 5 in total P&L
- Conceptualized and spearheaded a smart bin initiative that united a team of 4 engineers and aims to improve energy efficiency
- Integrated machine learning and IoT for waste sorting (~90% accuracy) and efficient planning of garbage truck routes

Cambridge University Robotics Society Rescue Major — **Cambridge, United Kingdom**
Member — Oct 2018 – Jun 2019

- Cooperated with a team of undergraduates to design and construct rescue robot which can be controlled using ROS
- Experimented with 2D mapping for autonomous driving and navigation of the robot using LiDAR and infrared sensors

Personal Projects

- Authored blog posts highlighting 10+ personal projects and academic studies with 1000+ views and 500+ unique visitors
- Implemented GANs to generate realistic-looking Pokémon and CNNs with logistic regression to classify the types of Pokémon
- Designed and coded an Augmented Reality browser game that utilizes selective colour detection with OpenCV

SKILLS & INTERESTS

Languages: Chinese (Native), English (Fluent), Japanese (Elementary)
Programming: Expert in Python, JavaScript and HTML; Experienced in C++, C#, Java, PHP and MATLAB
Computing: Proficient in machine learning and computer vision; Expert in software and web development (Linux/Windows); Experienced in game development (Unity/Unreal Engine), microcontrollers (Arduino/Raspberry Pi), robotics and CFD simulations
Software: Proficient in SolidWorks and Photoshop; Experienced in TensorFlow, OpenCV, AutoCAD and SketchUp
Hobbies: Guitar, piano, drum set, oil painting, sketching, photography, pool, tennis, table tennis and travel