

EDUCATION

University College London

Master of Engineering in Computer Science

London, UK
09/2019 — Present

- an overall score of 77.9 in Year 3 and 75.9 in Year 2.
- Machine Learning for Visual Computing, Machine Learning and Neural Computing, Robotic System, Computer Graphics, Computer System, Research Methods 09/2019 - 06/2021
- Reinforcement Learning, Multi-Agent Artificial Intelligence, Virtual Environment 09/2022 - 06/2023

UCL Chinese Students and Scholars Association Debating Team

09/2020 — Present
03/2022 — Present

- Associate Team Leader
- won the "Best Debater" prizes many times

Nanjing Dongshan Foreign Language School

Nanjing, China
09/2017 — 06/2019
07/2018
03/2019

- A-Level 4 A* (Mathematics, Further Mathematics, Chemistry, Physics)
- IELTS 7.5
- Gold Award in UK Chemistry Olympiad

RESEARCH EXPERIENCE

Robotic System for Identifying and Watering House Plants

10/2021 — 04/2022

Supervised by Prof. Simon Julier at University College London

- Proved the possibility of an autonomous robotic system to water houseplants by creating one in a simulated environment in ROS Noetic, with a group of 6 people working in different aspects including SLAM, Control, Path Planning, Classification & Detection and Exploration. Available on Github repository <https://github.com/Aashvin/COMP0031-PlantBot>.
- **Classification & Detection:** Conducted a literature review on detection and segmentation methods as well as the plant identification networks. Integrated Darknet_ROS package into our project. Modified the package to support different YOLO versions including YOLOv4. Available on Github repository <https://github.com/t1mkhuan9/yolov4-ros-noetic>.
- **Score:** 81 in individual literature review, 72 in group report and 80 in individual report

Learning 3D Point Cloud Segmentation by Aggregating 2D Image Semantics

08/2021 — 12/2021

Self-motivated Research Project

- Projected each 3D point to corresponding image pixels in different frames and used image semantics information to generate 3D point segmentation. Explored two possible approaches: (1) directly using the result produced by image segmentation by choosing the mode among them (2) removed the final layer of the image segmentation network and use the features to get 3D point information.
- Conducted experiments based on the KITTI-Odometry dataset using the ground truth value from SemanticKITTI dataset. Used and adapted Nvidia Segmentation (DeepV3WPlus Network) as the image segmentation method. Trained a simple neural network based on the image semantics features to predict the 3D point semantic label.
- Available on Github repository: <https://github.com/t1mkhuan9/image-based-pointcloud-segmentation>

INTERNSHIP EXPERIENCE

UCL Computer Science Robotics Internship

06/2022 - 08/2022

Supervised by Prof. Simon Julier, Prof. Dimitrios Kanoulas and Dr. Francisco Porto Guerra E Vasconcelos

- **Robot:** myAGV developed by ElephantRobotics and Huawei, which is the smallest 6 DOF compound robot with Mecanum wheels.
- **Environment:** ROS Noetic. Created a simulated environment in Gazebo.
- Wrote related course materials for UCL module COMP0128, COMP0129 and COMP0130. Read and visualized sensor data (camera, lidar,...). Explored related algorithms including moving the robot in a pre-defined trajectory and moving the arm to a pre-defined location in robot coordinates. Provided demonstration code and comprehensive explanations and tutorials for all of those algorithms.

Recycl.one Mobile App Team Leader

10/2020 — 05/2021

Supervised by Mr. Hardwick James at University College London and Mr. Fergus Kidd at Avanade

London, UK

- **Technology:** We used Flutter & Dart to build the mobile app and the backend is written in Java using Spring Boot deployed at Azure providing RESTful APIs. Azure MySQL server and Azure Computer Vision API is also used by the backend.
- **Team Work:** This project was to build a demo app for the client at Avanade to encourage people recycle more materials. We were working as a team of 3 people and our idea is to build an app that can identify the items that people want to recycle and show the drop-off point that collects the corresponding items. Once an item has been recycled, they will receive points on their app account.
- **Personal Contribution:** As I am familiar with both Flutter and Spring Boot, I became the team leader and focus on implementing the backend while helping my teammates with the app development as well.

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Kefeng Huang

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Citrix Summer Intern

07/2020 — 08/2020

- **Description:** My main work is to use JavaScript to write an chrome extension that can capture events such as pop up windows and visualize the past data under the supervision of a senior engineer. Personally I got the Campus Star Award.

China Mobile AI Department Intern

04/2020 — 06/2020

- **Description:** I was assigned as an intern in a team focus on extract company seals from the contract. My job was to learn to use the openCV library and implement the ELSDc algorithm to extract circles from the images.

UCollege X Mobile App

01/2020 — 05/2020

- **Description:** This is personal project where python is used to scrape data from websites like QS and Times ranking and then a mobile app written in Flutter visualized the data for a clearer comparison between universities and degrees.

SKILLS

Programming Languages	Python, C, Java, Dart, x86-Assembly
Libraries	Pytorch, Numpy, Pandas, Flutter
Communication	Chinese (Native), English (Fluent)