

# Kefeng Huang

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## EDUCATION

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### University of York, United Kingdom

11/2024 – 11/2028

Ph.D. in Electronic Engineering

Robot-Assisted Living Laboratory (RALLA), [Dr. Jihong Zhu](#)

*Topic:* A Robot Chemist that can Learn from Human Demonstrations

### University College London, United Kingdom

09/2019 – 06/2023

M.Eng. in Computer Science, First Class Honors

*Core Modules:* Machine Learning for Visual Computing, Advanced Topics in Machine Learning, Reinforcement Learning, Multi-Agent Artificial Intelligence, Robotic System

*Thesis:* Model-Free Reinforcement Learning with Robot Self-Model

## RESEARCH INTEREST

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My research interests lie in the broad area of robot learning, with a particular focus on robotic manipulation and perception. I am particularly interested in exploring imitation learning and developing methods to enable robots to perceive and perform complex tasks that are difficult to model explicitly. My work aims to advance intelligent and adaptive robotic systems.

## PUBLICATIONS

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- [1] **Kefeng Huang\***, Tingguang Li\*, Yuzhen Liu\*, Zhe Zhang, Jiankun Wang, Lei Han. "VLM-TDP: VLM-guided Trajectory-conditioned Diffusion Policy for Robust Long-Horizon Manipulation" (Under Review) *IEEE International Conference on Robotics & Automation (ICRA 2025)* .

## AWARDS

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**Campus Star Award & Silver Prize**, Citrix Systems Summer Camp, 2020

**Gold Award**, UK Chemistry Olympiad, 2019

## INDUSTRY

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### Tencent Robotics X, Shenzhen, China

05/2024 – 10/2024

Research Intern, Intelligent Agent Group

Developed a method to bridge high-level planning using VLMs with low-level control policies. The work

*VLM-guided Trajectory-conditioned Diffusion Policy* has been submitted to ICRA 2025.

### Avanade & UCL, London, United Kingdom

10/2020 – 05/2021

Software Engineer

Developed and led a team of three to create an AI-driven mobile app designed to promote recycling practices.

The app identifies recyclable items and incentivizes recycling through a reward system.

### Citrix Systems, Beijing, China

07/2020 – 09/2020

Software Engineer Camp

Campus Star Award & Silver Prize

Developed an application to monitor and manage virtual machine pop-up windows, improving the security and operational efficiency of the virtualization platform.

## PROJECTS

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### **Robotic System for Identifying and Watering House Plants, UCL** **10/2021 – 04/2022**

- Led a 6-person team working in various domains, including SLAM, Control, Path Planning, Classification & Detection, and Exploration, to successfully demonstrate the possibility of an autonomous robotic system capable of watering houseplants by implementing a simulated environment using ROS Noetic
- Available on Github repository <https://github.com/Aashvin/COMP0031-PlantBot>.
- Spearheaded the Classification and Detection component of the project by conducting a literature review on detection and segmentation methods, along with plant identification networks. Integrated Darknet\_ROS package into the project and customized it to accommodate various YOLO versions.
- Available on Github repository <https://github.com/kefhuang/yolov4-ros-noetic>.

### **Learning 3D Point Cloud Segmentation by Aggregating 2D Image Semantics** **08/2021 – 12/2021**

- Developed a novel 3D point cloud segmentation approach by leveraging image semantic information from different frames. Explored two distinct methodologies: (1) Utilizing the output of image segmentation by selecting the mode among the results and (2) extracting features from the final layer of the image segmentation network to obtain 3D point information
- Conducted rigorous experiments using the KITTI-Odometry dataset, with ground truth values obtained from the SemanticKITTI dataset. Incorporated and adapted Nvidia Segmentation (DeepV3WPlus Network) as the image segmentation method and trained a simple neural network based on the image semantics features to predict 3D point semantic labels.
- Available on Github repository:  
<https://github.com/kefhuang/image-based-pointcloud-segmentation>

## SKILLS

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<b>Programming Languages</b>	Python, C++, Matlab, C, Java
<b>Communication</b>	Chinese (Native), English (Professional, IELTS 7.5(2018))
<b>Interests</b>	Landscape Photography, Snowboarding, Badminton

## SERVICES

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### **Teaching Assistant, UCL, London, United Kingdom** **09/2022 – 05/2024**

- COMP0095 Data Mining and Analysis
- COMP0128 Robotic Control Theory and Systems
- COMP0129 Robotic Sensing, Manipulation and Interaction
- COMP0202 Mathematics for Robotics and Artificial Intelligence