

CUI Haozhe Eric

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EDUCATION

Hong Kong University of Science and Technology (HKUST)

MPhil in Individualized Interdisciplinary Program (Robotics); Supervisor: Prof. YANG, Jinglei

Hong Kong

Feb 2023 – Now

University of Vienna

Summer Exchange Program, A1 and A2 Level German Certificate

Vienna, Austria

Jul 2019 – Sep 2019

Hong Kong University of Science and Technology (HKUST)

B.Eng. in Electronics and Computer Engineering

Hong Kong

Sep 2017 – Dec 2022

PUBLICATIONS

[J1] A kinetics-mass transport model for CO₂ electroreduction reactor to investigate performance limitation factors

Yuanxin Fang, **Haozhe Cui**, Bo Chen, Wanting Chen, Xuehua Ruan, Xuemei Wu, Fujun Cui, Minggang Guo, Gaohong He
Chemical Engineering Science, Year: 2022, Vol: v. 262, Period: November 2022

[J2] A Modelling and Optimization Methodology for High-Throughput Synthesis Automation Systems

Co-first Author

Under preparations for IEEE Robotics and Automation Letters (RA-L)

RESEARCH EXPERIENCES

VR in Chroma Key Filming Project

Co-op Final Year Project, HKUST, Supervisor: Prof. Bertram SHI

Hong Kong

Sep 2020 – Mar 2021

- Designed a 2D to 3D reconstruction system targeting human upper body with Open Pose and Blender. Achieved overall accuracy of 0.8, decreased latency by 10%.

Locomotion Robot Control Project

Research Assistant, HKUST, Advisor: Prof. Ling SHI

Hong Kong

Mar 2021 – Sep 2021

- Developed a STM32 based 4G communication system with SIM800L GMS. Implemented an Android App, a MySQL database and a Django-based backend server. Realized remote surveillance, control, data collection and analysis.

High-throughput Lab Automation Platform

MPhil Research Project, HKUST, Supervisor: Prof. Jinglei YANG

Hong Kong

Sep 2023 – Now

- Designed an automation platformed for material science experiments with 5 times the efficiency of human. Multiple modules including spinning, heating and characterizing were implemented using ESP32-based microcontrollers, sensors and robotic arm.
- Performed data analysis, mathematical modeling and optimization upon the system. Submitted a paper and is under review.

INTERNSHIP EXPERIENCES

Technical Internship at ICRC VR Division

Technical Intern, ICRC VR Division, Supervisor: Mr. Christian Rouffaer

Bangkok, Thailand (Remote in Hong Kong)

Jul 2020 – Jan 2021

- Familiarized and applied industrial level VR tools including Blender, Unity and UE4. Studied and applied CV frameworks including OpenPose.

F&E Internship at On Semiconductor

Field Application Intern, SCG Hong Kong SAR Limited, Supervisor: Mr. Kelvin Tsiang

HKSTP, Hong Kong

Aug 2021 – Jul 2022

- Implemented a STM32-based portable double-pulse tester for IGBT devices. Achieved pulse resolution of 10ns.
- Developed a chipset management system with Django backend and MySQL database.

Epoxy Flooring Automation Project at HKCRC

Entrepreneur Project, HKCRC

HKSTP, Hong Kong

Jun 2022 – Aug 2023

- Lead a 4-man team on the design and development of an epoxy flooring robot. Built a prototype that could operate at 8 times the speed of a human.
- Performed multi-sensor data fusion including lidar, IMU and odometer, further implemented gmapping-based SLAM navigation stack. Developed a RF-signal-based remote control system. Designed a ROS and ESP32 based central control system.

AWARDS

HKSAR Government Scholarship Fund - Talent Development Scholarship, 2019	Hongkong
The 16th National Challenge Cup, Nov 2019, Second Prize	Beijing
The 5th Hong Kong University Student Innovation and Entrepreneurship Competition, Second Prize	Hong Kong
The 8th “Winning in Guangzhou” and Guangdong-Hong Kong-Macao Greater Bay Area Entrepreneurship Competition for College Students, Sep 2019, Second Prize	Guangzhou
The 12th Challenge Cup National Business Plan Competition, Nov 2020, Third Prize	Harbin
The 3rd IEEAC Entrepreneurship & Innovation Challenge, Dec 2020, Second Prize	Beijing

SKILL SET

Languages:	Mandarin (Native), Cantonese (Primary), English (TOEFL 100), German (A2)
Skills:	Microcontrollers and Embedded System (STM32, ESP32 and Arduino - C and C++)
	Robot Operation System (ROS) (Control - C++ & Python)
	SLAM Navigation Stack (Gmapping and Cartographer - C++)
	VLSI Design (Synopsys VCS and Cadence - Verilog)
	Android Development (Android Studio - Java)
	Web Development (Django, Vue, MySQL and MQTT - JS, CSS and Python)
	Experienced Photographer (Images and Videos)