Hin-Chi (Haley) Kwok

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A proactive learner with projects in Machine Learning, Human-Robot Collaboration (HRI/HCI), and Software Engineering.

Education

Hong Kong Polytechnic University (PolyU), Faculty of Engineering HKSAR, CN
BSc in Enterprise Engineering with Management, Minor in Computing; GPA: 3.7/4.3, Rank 1/37 *2020/08-2025/06*
Courses: Calculus, Information Technology, Enterprise Computing, Systems Modeling and Design, Operation Research I

Shanghai Jiao Tong University (SJTU), SEIEE, Computer Science and Engineering Shanghai, CN
Exchange Program in Computer Science and Technology *2023/8-2024/01*
Courses: Discrete Mathematics, Data Structure, Information Theory

- INNOVATION: 21st APICTA Winner in Tertiary Level (Only 1 in Asia Pacific Region); Internet+ Gold Award (Top 0.009% National); HKICT Student Innovation Grand Award and Gold Award (Only 1 & Top 0.3% in HK)
- ACADEMIC: Innovation & Technology Sch. (Presented by HKSAR Chief Executive); Canada Mitacs Research Sch. (worldwide); HKSAR Govt. Sch. (Top 1 in Prgm.); HK FOF Sch. (1/15); PolyU Dean's list 2021-2023
- LEADERSHIP: Outstanding HK Tertiary Student (1/10), Presidential Student Leader Award (Only 1 in Dept.)

Research Experience

PolyU Research Group of AI for Industrial Digital Servitization, led by Ir Dr Pai Zheng HKSAR, CN
Research Assistant *2021/07-2023/06*
- Research: Focus on Human-Robot Collaboration using MAML, DRL, and other AI techniques

McGill Software Technology Lab, led by Profs. Martin Robillard & Jin Guo Montréal, CA
Research Assistant *2023/05 - 2023/08*
- Research: Focus on using Large Language Model for Code and Documentation in the field of Software Engineering and create tools with React.js

SJTU Information and Computing Lab, led by Prof. Fan Cheng Shanghai, CN
Research Assistant *2023/08 - 2024/01*
- Research: Work on Mean Field Theory method in Deep Learning to improve information security and cloud computing

Work Experience

Massachusetts Institute of Technology HK Innovation Node HKSAR, CN
IoT and ultra-wideband (UWB) Positioning development | C++, Python *2022/06 - 2022/07*
- Developed 3D-aware localization system with radiation ray collision method, 3D model printing and create GUI

Selected Research Projects

Meta-Reinforcement Learning Based Control Approach for Assisting HRC in Personalized Production
Model diagnostic meta-learning, Proximal policy optimization deep reinforcement learning, Robotics Perception, ROS
- First author of awarded paper by HKIE and accepted by CASE 22'
- Designed self-learning robotic assisted systems (SLRAS) with self-adapt DRL algorithms to assist human operators
- Enhanced the performance by about 75% on average

Mutual Cognitive Human-Robot Collaborative Manufacturing System
Deep Reinforcement Learning, Augmented Reality, HRC
- Awarded HKICT Student Innovation Grand Award and Gold Award and APICTA Award
- Integrated virtual and realistic task planning and dynamic guidance of visual data to enhance the intelligence of robots and to facilitate information sharing with Augmented Reality
- Conducted human-in-the-loop control approaches

Skills

Languages: SQL, Python (including Machine Learning libraries), C++
WebDevelopment/Design: HTML/CSS/JavaScript, Hexo, Flask, Postman, Figma, Procreate
Frameworks: Tensorflow, ROS, Keras
Utilities: Jupyter Notebook, VSCode, PyCharm, IntelliJ, Git, Docker, LaTeX, Linux (Ubuntu), CoppeliaSim 2
Electronics/ Machines: Arduino, 3D Printer, Welding