

# C H E A H Y E O K T A T T

*Deep Learning and Data Engineer*

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## EDUCATION

*09/2018 - 07/2022*

*The Hong Kong Polytechnic University*

*Bachelor of Engineering, Electronic and Information Engineering*

- **Hong Kong Jockey Club Full Entrance Scholarship**, including tuition fee and stipend.
- **Best Semester GPA Award** for both semesters in Year 4, CGPA 3.23 | Year 4 GPA 3.86
- Relevant Technical Subjects: Deep Neural Networks, Computer Vision and Pattern Recognition, Multimodal Human Computer Interaction, Digital Signal Processing, Data and Communications, Database Systems, Perceptual Robotics.

## PROFESSIONAL EXPERIENCE

*Hong Kong Centre for Logistic Robotics • Engineer*

*09/2022 - Present*

- Develop robotic software in C++ (ROS), Python (Pytorch) for cluttered object segmentation, pose estimation, singulation for palletizing and depalletizing workflows.
- Develop reinforcement learning environment and agent in a collaborative project with UC Berkeley researchers.
- Derive model for novel manipulators and develop multi-objective topology optimization algorithms.
- Frequent communication with vendors, draft grant proposals and patents in both English and Mandarin.

*The Hong Kong Polytechnic University • Research Assistant*

*05/2021 - 07/2022*

Member of Prof. Joanne Yip's team on AI-enabled biofeedback sportswear. [[Link](#)]

- Developed End-to-end Deep Neural Network and data pipeline for multimodal data in Tensorflow.
- Developed machine learning solution to predict muscle fatigue induced task failure. (AHFE 2022, first author)
- Developed and maintain lengthy semi-automated data pipeline and GUI program in MATLAB to perform data cleaning, pre-processing, manipulation, and segmentation on the high dimensional dataset of SEMG and IMU signals collected from multiple sensors on different locations of the body. Processed over 5TB raw data.

*Mini-circuits • Intern*

*12/2020 - 02/2021*

Intern in the MNC's R&D lab on data-driven radio frequency solution on object identification [[Link](#)].

- Conduct experiments, optimize TI CC1120 chip's register config, improved real-time transfer rate by 10x
- Develop GUI application for real-time computer-MCU communication and data collection (Java).

*Affinex • Intern*

*02/2020 - 07/2020*

Worked closely with a SME company owner [[Link](#)]

- Develop ESP32 and Firebase based IoT products, set up IoT software and hardware infrastructure.
- Maintain 3D printers, industrial laser cutter and write standard operating protocols.
- Design, direct and coordinate the *100-Day Young Engineer's Makerthon* for over 85 participants and arrange networking event for engaged parties.

## AWARDS AND TECHNICAL PROJECTS

### *ManiSkill 2 Challenge by UCSD • 2nd Runner Up*

07/2023

Global benchmarking competition on generalizable robotic manipulation policy across multiple tasks. [\[Link\]](#)

- Improved DAPG (reinforcement learning) and Imitation Learning (supervised learning) agents using pretrained PointNet++, multi-camera images, and privileged simulator information during training, achieving higher sample efficiency (therefore performance) with the 4 million+ demonstration frames.
- Specific Skills: Pytorch, data-driven robotics, point-cloud segmentation, SAPIEN simulator, Docker

### *Modified Car Engine Recognition with Deep Neural Networks • Final Year (Honors) Project A+, Technical Excellence Award (Top 3 in department)*

09/2021 - 05/2022

- Develop Tensorflow pipeline to train, transfer learn, do data augmentation, visualize, and perform real-time inference, resulting in 85% recognition accuracy over 6 classes in noisy urban environments. [\[Link\]](#)

### *6 DOF Motion Simulator • 2nd Runner Up at EIE MCAD Design Competition 2022*

03/2022

- First open-sourced Python inverse kinematics controller and detailed tutorial for Stewart Platforms [\[Link\]](#)
- Hardware, software for a mannequin on a 6DOF robot that replicates VICON human motion capture data.

### *Rescue Robot Stabilizer for IC382 Multidisciplinary Project*

01/2021 – 05/2021

Complete development including CAD, electronic and PCB design, programming, and visualization. [\[Link\]](#)

## COMMUNICATION AND WRITING

- Published article on Inscribe: Considering a shared future between humans, post-humans and AI [\[Link\]](#)
- Employed by PolyU OSSL as writer and photographer in Rwanda & Cambodia [\[Publication\]](#) (05/2019 – 09/2019)
- Employed by PolyU GEO as writer and photographer for on campus events [\[Link\]](#) (09/2018 – 09/2021)
- Participant in Reinforcement Learning Reading Club, hosted by Prof Edward Chung [\[Link\]](#) (May 2021 – Nov 2021)
- Participant in the highly selective MIT Entrepreneurship and Maker Skills Integrator [\[Link\]](#) (Jan 2021)
- High Potential Award at HKU-SCMP Innovation and Entrepreneurship Challenge 2019
- Founder, Ex-president, Ex-coach English Debating Club, Chung Ling Private High (2015 - 2018)
- Native proficiency in English (IELTS 8.5), Mandarin, fluent in Cantonese and Malay
- GRE Score: Verbal Reasoning 163 | Quantitative Reasoning 163 | Analytical Writing 5.0

**References available on request**