ZHANG Pei Ning

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EDUCATION

City University of Hong Kong   Sep 2021 - Jun 2025 [anticipated]

- Bachelor of Engineering in Intelligent Manufacturing (ITME) - cGPA: 3.88/4.30 (2/22)   Hong Kong
- Attained Deans List (2021-2024); CityU Scholarship for Outstanding Students (H/KD$30,000); Fung's ADSE Scholarships for Outstanding Students (HKD$20,000); ASM Pacific Technology Scholarship (HKD$12,500); SYE Student of the Year Award;
- Relevant coursework: Machine Learning, Automation Technology, Mechanics

Peking University - **Academic Exchange Programme**   July- Aug 2023

- Relevant coursework: Machine Learning Algorithm, Project Management   Beijing
- Received Special Fund for Non-local Outbound Exchange Students

RESEARCH/ PROJECT EXPERIENCE

KTH Royal Institute of Technology, School of Electrical Engineering and Computer Science - Visiting Research

                                                                     May - Aug 2024

- Focused on robotic remanufacturing of electric vehicles, leveraging large foundation models   Sweden
  and behavior cloning, with training and testing conducted from a simulation perspective.
- Developed a basic simulation environment and implemented the mobile-aloha protocol using ROS2.
- Conducted literature reviews on RFUniverse, VAE, Mujoco, and multi-physics simulation for embodied intelligence, replicating relevant simulation tasks.
- Designed a simple EV battery pack and bimanual robotic arms in SolidWorks, which were imported into Mujoco to generate demonstration data.
- Modified the mobile-ALOHA ACT code and trained the model with the collected data, evaluating its robustness and generalization capabilities.
- Currently preparing for a industrial conference for this research result.

City University of Hong Kong, System Engineer Department - Technical Assistant - Part Time   Mar - Dec 2023

- Published a 10-pages literature review about digital twin for civil infrastructure in   Hong Kong
  the Journal of Infrastructure Intelligence and Resilience
  Liu, Cheng*. , Zhang, Peining. & Xu, Xuebing. (12 Jul 2023). Literature Review of Digital Twin Technologies for Civil Infrastructure. *Journal of Infrastructure Intelligence and Resilience*. doi:doi.org/10.1016/j.iintel.2023.100050
- Used Abaqus to construct a virtual bridge model. The model includes simulated damage, which is applied through random forces based on the information given in a research paper. And also learned to establish a model using Python scripts without running the ABAQUS CAE interface.
- A deep learning model was built and Transfer Learning with finetuning was used to classify the damage scenario of the bridge model.
- Assisted the professor in drafting a review on aviation composite materials and contributed to creating a poster on the professor's research on flaw detection in aviation composite materials.

City University of Hong Kong, Automation Course in Mechanical Engineer Department - Student   Sep - Dec 2023

- Employed the Particle Filter algorithm to estimate the location of a robot based on   Hong Kong
  sensor readings and a map of the environment.

- Developed a Python program to enable the particles to converge with the agent's motion and predict the agent's location based on sensor readings and motion updates.
- Improved the code by introducing an additional parameter, "random_ratio," in the resampling process to control the proportion of particles generated at random positions, thereby preventing degradation and exploring more states.

INTERNSHIP EXPERIENCE

Hebei King Ceramic Electronic Technology Co., Ltd. - Design Department - Summer Intern May - Jun 2022
- Enhanced Auto CAD skills through designing ceramic substrates, understanding   Hebei, China
  CAD's role in chip packaging, and deepening knowledge of Moore's law.
- Used SolidWorks for 3D modeling, gaining enthusiasm for part design and comprehending the software's capabilities.
- Practiced in a ceramic substrate production, acquiring hands-on experience and insights into the production processes.
- Studied Quickfix test for hole connectivity and dedicated over a week to enhance programming skills by learning C++.

LEADERSHIP EXPERIENCE/ OTHER ACHIEVEMENTS

BENG ITME Programme Committee, CityU - Student Representative Dec 2022 - Present
- Addressed students' needs to the department administration and provided assistance in formulating professional strategies and plans for the department's development.
- Conveyed student feedback regarding a particularly challenging course to the department, resulting in the course being canceled after departmental discussion.

College Validation and Monitoring Committee (CVMC), CityU - Student Representative Sep 2022 - Present
- Reviewed undergraduate program proposals from academic units three to four times a year, either through meetings or paper circulation.

JPMorgan 2024 Asset and Wealth Management Challenge - Team Leader March 2024
- Led a team of 4 in a case competition organized by JPMorgan, conducting asset allocation for a client and delivering a 20-minute presentation.

Mainland Student Association, CityU - Vice-president Sep 2022 - Sep 2023
- Established the association's regulations and led a team of 22 in crafting the annual plan while tracking its progress in weekly meetings.

ADDITIONAL INFORMATION

Languages: Native Mandarin, Proficient English, Elementary Cantonese

IT Skills: Python, C++, SolidWorks, gazebo, CAD, Minitab, Abaqus

Interests: Deep learning, Machine learning, Statistics, Robotic arms, Basketball, Fitness