

# Pang-Chi (Sean) Lo

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## Education

### Carnegie Mellon University

MASTER OF SCIENCE IN COMPUTER VISION

Pittsburgh, US

Aug. 2025 - Present

### National Taiwan University

B.S. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING

Taipei, Taiwan

Sept. 2020 - Dec. 2024

- Enrolled as a freshman in 2020 after transferring from HKUST due to the COVID-19 pandemic.
- Overall GPA: 4.02/4.30, Major GPA: 4.22/4.30, Last 2-year GPA: 4.26/4.30
- Relevant Coursework: Operating System, Discrete Math, Linear Algebra, Probability, Data Structure and Algorithms, Software Design\*, Machine Learning, Introduction to Artificial Intelligence, Security and Privacy in Machine Learning\* (\* denotes Graduate-level courses)

### The Hong Kong University of Science and Technology

BENG IN COMPUTER SCIENCE

Kowloon, Hong Kong

Sept. 2019 - Jun. 2020

- Overall GPA: 3.70/4.30
- Relevant Coursework: Calculus, Introduction to Computer Science, Exploring and Visualizing Data

## Research Experience

### Embodied Artificial Intelligence Lab, National Taiwan University

UNDERGRADUATE RESEARCH ADVISED BY PROF. TSUNG-WEI KE

Taipei, Taiwan

Sept. 2024 - Present

- Researched the challenge of reconstructing 4D scenes with 3D pointmap prediction and scene flow estimation based on monocular videos in an ongoing project in collaboration with Prof. Katerina Fragkiadaki at Carnegie Mellon University.

### Communication and Multimedia Lab, National Taiwan University

UNDERGRADUATE RESEARCH ADVISED BY PROF. WINSTON H. HSU AND PROF. YI-TING CHEN

Taipei, Taiwan

Sept. 2022 - Jan. 2025

- Explored the challenging error detection task for few-shot imitation learning and cooperated in developing a cross-domain benchmark and proposing a pattern extractor that surpassed strong baselines by an average of 5% performance shift across 21 scenarios.
- Investigated reward generation for reinforcement learning in long-horizon robotic manipulation tasks and designed a reward model that trained with action-free videos with language instructions to provide accurate guidance for agents and achieved a 43% improvement in success rates.

## Publications

[1] Jia-Fong Yeh, Kuo-Han Hung\*, **Pang-Chi Lo\***, Chi-Ming Chung, Tsung-Han Wu, Hung-Ting Su, Yi-Ting Chen, Winston H. Hsu, "AED: Adaptable Error Detection for Few-shot Imitation Policy," *Neural Information Processing Systems (NeurIPS) 2024*

[2] Kuo-Han Hung\*, **Pang-Chi Lo\***, Jia-Fong Yeh\*, Han-Yuan Hsu, Yi-Ting Chen, Winston H. Hsu, "VICtoR: Learning Hierarchical Vision-Instruction Correlation Rewards for Long-horizon Manipulation," *International Conference on Learning Representations (ICLR) 2025*

## Work Experience

### Genenet Technology Ltd.

DATA ENGINEER INTERN

Stevenage, UK

Jul. 2024 - Nov. 2024

- Contributed to building an online platform to deploy the genetic circuit service with genetic sequence analytical tools for lab researchers.
- Implemented three different computer vision algorithms, including boundary detection and segmentation models for measuring the cardiac organoid beating rate from lab videos and reached over 70% accuracy.
- Constructed an automated and cloud-storage-based video validation pipeline for the cardiac cell beating detection on over 450 lab videos.

### Stats-Insight Inc.

FULL-STACK DEVELOPER & DATA ANALYST

Taipei, Taiwan

May 2022 - Jun. 2024

- Developed the first online platform for scouting and statistical visualization for Taiwanese baseball and provided customized analytical services for teams in the Chinese Professional Baseball League (CPBL).
- Devised customized scouting platform and play-by-play data collection software for the scouting team of the Chinese Taipei National Men's Baseball Team in the World Baseball Classic and winning the World Champion in Premier 12.
- Led the project on retrieving defensive player positioning and player movement tracks from bird-eye view cameras in the stadium with YOLOv8.

## Teaching Experience

### Dept. of Computer Science and Information Engineering, National Taiwan University

Taipei, Taiwan

TEACHING ASSISTANT OF CSIE 1000 INTRODUCTION TO COMPUTER, INSTRUCTOR: PROF. WINSTON H. HSU

Sept. 2024 - Dec. 2024

- Conducted the introduction course on programming and development tools about Python and Git.
- Coordinated the programming term project in Python game agent design about the Four-in-a-row game.
- Developed an interactive GUI for the term project for students and implemented an automated grading system.

## Honors & Awards

2024	<b>Vysioneer Outstanding Thesis Award</b> , CSIE Undergraduate Thesis Competition, National Taiwan University	Taipei, Taiwan
2024	<b>Appier Promising Thesis Award</b> , CSIE Undergraduate Thesis Competition, National Taiwan University	Taipei, Taiwan
2023	<b>Vysioneer Outstanding Thesis Award</b> , CSIE Undergraduate Thesis Competition, National Taiwan University	Taipei, Taiwan
2023	<b>Bigstack Second Prize</b> , CSIE Undergraduate Thesis Competition, National Taiwan University	Taipei, Taiwan
2021	<b>Best Innovation Award</b> , Hackathon Taiwan Junior 7th	Taichung, Taiwan
2019	<b>Dean's List</b> , School of Engineering, The Hong Kong University of Science and Technology	Kowloon, HK
2019	<b>Admission Scholarship</b> , The Hong Kong University of Science and Technology	Kowloon, HK

## Extracurricular Activity

### CSIE Student Council, National Taiwan University

Taipei, Taiwan

LEADER OF SPORTS DEPARTMENT

Sept. 2022 - Jun. 2023

- Arranged annual funding and registration affairs for the Inter-University Information Sports Competition for sports teams in CSIE department.
- Led the sports department to hold the Inter-Department competitions between CSIE and EE departments.

### Fast-pitch Softball Team, National Taiwan University

Taipei, Taiwan

TEAM MEMBER

Sept. 2020 - Jun. 2022

- Represented National Taiwan University to engage in the National Intercollegiate Fast-pitch Softball Cup and achieve second place.
- Operated the umpire and ballpark rental arrangement for the National Taiwan University Softball Cup competition.

### Taiwan Student Association, The Hong Kong University of Science and Technology

Kowloon, Hong Kong

SUBCOMMITTEE

Sept. 2019 - Jun. 2020

- Facilitated registration, member welfare distribution, and Taiwan Night promotion within the internal affairs department.
- Directed the event video for the Taiwan Night, encompassing script development, interview filming, and post-production editing.

## Selected Course Projects

### Adversarial Attacks on Language and Vision Model-Powered Robots

Taipei, Taiwan

COURSE: SECURITY AND PRIVACY IN MACHINE LEARNING

Spring 2024

- Investigated the vulnerability of vision-language model(VLM)-powered robots under targeted multimodal adversarial attacks across malicious prompts, perturbed goal images, and perturbed demonstration videos.
- Achieved a 40% targeted attack success rate shift with the projected gradient descent method on image perturbation.

### MeetSafe for Secure Dating and Events

Taipei Taiwan

COURSE: COMPUTER NETWORK LAB

Spring, 2023

- Designed and implemented a dating website using the ReactJS framework and Flask server, enabling users to connect with others who share similar interests or to host and join events.
- Integrated individual text messaging and meeting reservation services for users.
- Implemented a safety feature that allowed users to share dating details and real-time location tracking records with trusted individuals using Google Maps API integration.

## Research Interests

<b>Robotics</b>	Policy Learning for Robotic Manipulation, Motion Planning, Training with Digital Twins
<b>Computer Vision</b>	3D stereo reconstruction, Environmental Perceptions, Video Motion Tracking

## Skills

<b>Languages</b>	Native in Mandarin and Taiwanese, Proficient in English, Conversational in German
<b>Programming</b>	C/C++, Python, JAVA, JavaScripts
<b>AI &amp; Data</b>	PyTorch, Numpy, Scipy, Pandas
<b>Full-stack</b>	Docker, AWS, GCP, Nginx, REST API, Node.js, Express, Flask, FastAPI, React, HTML5, CSS