NG CIN SIANG

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STRENGTHS

C | C++ | Python | JavaScript | CSS | HTML | OpenCV | Pytorch | TensorFlow | ultralytics | NLP

SUMMARY

A senior in the Information Technology Engineering Division of the Department of Civil Engineering, possessing advanced skills in multiple programming languages and a passion for coding. Experienced in 2D and 3D computer vision and skilled in designing custom models with proprietary components, and my current research focuses on Machine Learning and Deep Learning. I am passionately seeking a challenging role where I can leverage my expertise in machine learning, natural language processing, computer vision, and software development to drive impactful solutions. I am eager to continue applying and expanding my knowledge in cutting-edge technologies.

EDUCATION

NATIONAL YANG MING CHIAO TUNG UNIVERSITY(NYCU) Feb 2024 - Present
MASTER OF SCIENCE MAJOR IN INFORMATION TECHNOLOGY ENGINEERING **4.075/4.3 GPA**
DIVISION OF THE DEPARTMENT OF CIVIL ENGINEERING

NATIONAL YANG MING CHIAO TUNG UNIVERSITY(NYCU) Sep 2019 - Jan 2024
BACHELOR OF SCIENCE MAJOR IN CIVIL ENGINEERING **3.63/4.3 GPA**

AWARDS

- **The Outstanding Overseas Chinese Student Scholarship for Graduate Students - 2024 Spring Semester (top 13** overseas Chinese graduate students chosen by Ministry of Education**)**
- **The Overseas Community Affairs Council Chairman's Award for Outstanding Graduating Overseas Chinese Students - 2023 (top 20** graduate overseas Chinese students chosen by OCAC**)**
- **The Fortune Youths Scholarship - 2022 Fall Semester (top 10** undergraduate students chosen by Chinese Taipei Tunnelling Association**)**
- **The Sinotech Engineering Consultants Scholarship - 2021 (top 50** undergraduate students chosen by Sinotech**)**
- **The Overseas Chinese Affairs Council Scholarship for Overseas Chinese Students with Outstanding Academic Performance - 2021 (top 20** overseas Chinese students chosen by OCAC**)**

PUBLICATIONS

- **Feasibility Study of Utilizing Artificial Intelligence in Determining Real-Time Inventory of Raw Materials**
  Undergraduate Research Project Scholarship, National Science and Technology Council, R.O.C.

PROJECT

- **Establishment of Synthetic Power Distribution Network Based on Object Detection Algorithm**
  - Utilized street view images to detect poles with a YOLO11x model, developed a self-adaptive constraints Line of Bearing (LOB) positioning method, incorporating grid division to enhance accuracy and efficiency.
  - Develops an automated system to download satellite images for any area at fixed intervals, detect poles using a YOLO11 model, and convert detections into geographic coordinates.
  - Fusing aerial and street view detections with DBSCAN for map integration.
- **Determining Real-Time Inventory of Raw Materials**
  - Use U-Net to segment RGB-D images, isolate stack regions, convert the depth map to a point cloud, extract stack points, and compute the convex hull volume for 3D size estimation.
- **Use D3.js to Visualize AlphaZero-like Tree Search in Go**
  - Tree structures with hover events and Fisheye zoom for local magnification.
  - Heat maps to display $P(s,a)$ or $PUCT$ scores, highlighting the best moves through colors.
  - Self-play replay to showcase AlphaZero-like Tree Search gameplay.
  - Analysis of specific states after 400 simulations or alternate moves using MCTS to explore different outcomes.
- **Genetic Algorithms on Deep Neural Network Transfer Learning**
  - Utilizes a CNN with VGG as a backbone, training custom layers via Genetic Algorithms (GA) with various mutation, crossover, and selection methods. Performance is compared to Evolution Strategies (ES) and gradient descent.