Hung-Po Cheng
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EDUCATION

NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY   **Taipei, Taiwan**
Master in Civil and Disaster Prevention Engineering   Sep 2019 – June 2021
Advisor: Dr. Lee-Kuo Lin
Thesis**:** Deep Learning-based Image Recognition for Disaster Prevention Application

EXPERIENCE

Research Assistant (Ph.D.)
Salt Lake City, Utah
University of Utah
August 2024- Present

Research Assistant (Ph.D.)   **Salt Lake City, Utah**
University of Utah   August 2024- Present
● Conduct research at the intersection of large language model and transportation engineering, developing advanced methodologies to analyze and improve traffic safety.
● Investigate Knowledge Graph construction techniques to integrate heterogeneous transportation datasets (e.g., crash reports, roadway geometry, and traffic flow) for more robust safety analysis.

Assistant Transportation Engineer   **Taipei, TW**
Top Hand International Inc. (THI Consultants Inc.)   June 2022 – June 2023
● Planned and designed diverse transportation projects, including applying AutoCAD in PS&E and roadway schematic design, creating compelling presentations, and drafting project proposals.
● Drafted a proposal for elevated railway construction to assist the Transportation Bureau of the Kaohsiung City Government in obtaining funding exceeding NT$13 million.
● Secured a roadway network improvement contract valued at over NT$8 million.
● Completed multiple projects, including transportation planning, cost assessment, and future projections
● Developed a program for automated web data scraping based on Python by using Selenium, Beautiful Soup, and Pandas. Improved productivity and reduced manpower costs.
● Collaborated with colleagues and engaged in cross-functional discussions to persuade government officials for better decisions.

Association Assistant   **Taipei, TW**
Taiwan Expanded Poly Styrene Civil Construction Method Association   Dec 2019 – Sep 2021
● Coordinated and facilitated professional association meetings and annual conferences.
● Collaborated with the Taoyuan municipal government to organize seminars promoting construction methods.
● Managed administrative operations of the association, including drafting meeting agendas, financial management, and document processing.
● Fostered effective communication and coordination among various stakeholders and association members.
● Organized and conducted a technical exchange event on EPS technology with the Japanese EPS Construction Method Development Organization.

Graduate Researcher   **Taipei, TW**
Department of Civil and Disaster Prevention Engineering, National Taipei University of Technology Sep 2019 – June 2021
● Conducted deep learning research, which involved gathering vehicle databases, analyzing influential factors, and using the YoloV3 framework for training with TensorFlow and Keras.
● Through the industry-academia collaboration, participated in the development of deep learning techniques to detect and identify pavement cracks that ultimately helped secure the Taipei City Public Construction Gold Safety Award.
● Guided undergraduate students to complete their independent studies.

- Served as an Administrative Assistant for the government training course for Worksite Directors of Construction Enterprise; provided support to more than 40 students in each class, assisting them with course-related and administrative matters.
- Worked as a Teaching Assistant for Construction Technology and Knowledge Management, assisting more than 20 students with course-related problems.
- Assisted more than 50 students with course-related problems as a Teaching Assistant for Construction Management.

PUBLICATIONS
- Jye-Hwang Lo, Lee-Kuo Lin, Hung-Po Cheng, Chu-Chun Hung, "Deep Learning-based Image Recognition for Disaster Prevention Application", Proceedings of International Exchange and Innovation Conference on Engineering & Sciences (IEICES). 8 (2022): 400-406. https://doi.org/10.5109/5909124
- Chu-Chun Hung, Lee-Kuo Lin, Chih-Hao Liao, Jye-Hwang Lo, Hung-Po Cheng, "Application of Virtual Reality to the Safety Protection Research of EPS in Elevator Shaft", 2020 International Conference on Developments and Applications of New Technologies in Civil Engineering from 30th October to 1st November 2020 in Taoyuan, Taiwan
- Mao-Chang Shih, Hung-Po Cheng, Pin-Jie Wu, "Analysis of Signal Interconnect Configuration at Urban Intersections", 2019 Conference of Civil Disaster Prevention and Environmental Sustainability, I-Shou University, 2019.06
- Deng-Fung Lin, Huan-Lin Luo, Qi-Jun Lin, Hung-Po Cheng, "Influence of Construction Conditions on Cement-Treated Subgrade Properties", 2017 ICSII, pp.C024-1~C024-9, I-Shou University, 2017.10
- Yi-Siang Syu, Deng-Fung Lin, Hung-Po Cheng, Pei Liu, "Preliminary Investigation of Mix Design for Asphalt Concrete with Furnace Slag", 2017 Conference of Civil Disaster Prevention and Environmental Sustainability, pp 228-232, National Quemoy University, 2017.06

RESEARCH TOPICS & INTERESTS
- Exploring deep learning through the implementation of the YOLOv8 detection algorithm for comprehensive object detection (self-learning). (Feb. 2023 – present) - https://github.com/K0e5v1i1n/Yolov8Developer.git
- Kaohsiung Nanzih Technology Industrial Park Road Network Evaluation Research Project. (June. 2022-present)
- Feasibility Assessment of Tamsui River Cross-River Road Network Balance (Including Guandu Bridge and Road System Integration). (Dec. 2022- present)
- Deep Learning-based Image Recognition for Disaster Prevention Application. (Dec. 2019 – Sep. 2021)
- Analysis of Signal Interconnect Configuration at Urban Intersections. (Jan. 2018 – June. 2019)
- Influence of Construction Conditions on Cement-Treated Subgrade Properties. (Jan. 2016 – Jan. 2018)
- Preliminary Investigation of Mix Design for Asphalt Concrete with Oxidized Slag. (Jan. 2016 – Jan. 2018)

OTHER ACTIVITIES
- During the pandemic, assisted the Taipei City Government in providing support and facilitating the COVID-19 vaccination efforts for the public.
- During my master's program, achieved second place in the table tennis competition within the Construction management group.
- Assisted in planning and hosting the Taiwan-Europe Intelligent Transportation System Forum.
- Leader of the orientation camp dancing group during the undergraduate period.
- Spontaneously beach cleanup with friends.

SKILLS
- Competent in Transportation Engineering, including Traffic Safety, Road Design, Disaster Prevention, Construction Management, and Transportation Planning.
- Proficient and interested in Data Science, with a focus on Big Data Analytics, Deep Learning, and Object Detection in vehicle recognition.
- Extensive experience in Pavement Engineering experiments, particularly road job-mix formula and material experimentation.
- Strong computer skills, including proficiency in Basic Python, R language, Yolo, CVAT, Bibliometrix, Label-studio, Photoshop, AutoCAD, Microsoft Word, PowerPoint, and Excel.