HSUAN-CHIH WANG

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EDUCATION

M.B.A. in Transportation and Communication Management Science   Aug. 2020
National Cheng Kung University (NCKU)   Tainan, Taiwan
• Overall GPA: 4.06/4.3
• Master's Thesis: "*A cooperative adaptive traffic signal control with transit signal priority*"; Advisor:
Prof. Wei-Hsun Lee; published in the *Journal of Advanced Transportation DOI: 10.1155/2022/2205292*

B.B.A. in Transportation and Communication Management Science   July 2018
National Cheng Kung University (NCKU)   Tainan, Taiwan
• Overall GPA: 3.67/4.3 (Last 60 credits: 3.95/4.3)

EXPERIENCE

Intelligent Transportation System Center, C.E. Consultants. Inc   **Oct. 2021 ~ Present**
Associate Researcher   Taipei, Taiwan
- Project: "Aberrant Driving Behavior Analysis and Driving Risk Level Assessment for Intercity Busses"
    - Collaborated with other researchers and the driving behavior data provider, Ho-Hsin Bus, one of the largest intercity bus service providers in Taiwan
    - Led four graduate-level interns in exploring dangerous freeway stretches by analyzing the driving behavior records of 101 drivers on ten intercity bus routes over a three-month period
- Project: "Technical Consulting and Management for Intelligent Transportation Systems (ITS) Development and Vehicle Safety Regulations"
    - Gathered and organized prominent ITS projects in the US and the EU, providing the results to the Ministry of Transportation and Communication of Taiwan

Research Center for Smart City Transportation and Network Services, NCKU   **Jan. 2021 ~ Sep. 2021**
    Tainan, Taiwan
Traffic Engineer
- Project: "V2X-based Multi-modal Traffic Signal Priority System in Tainan City"
    - Designed and implemented core signal priority strategies for 21 signalized intersections, reducing bus travel time by, on average, 12% and reducing emergency vehicle stop times by 51%, according to the field survey
    - Led a group in developing a traffic simulation in SUMO to evaluate traffic impact; the complete evaluation results were presented at the *2022 SUMO User Conference* (link)
    - Received the *Highest Distinction Award* and *Outstanding Transportation Project Award* out of 20+ ITS projects in Taiwan from the Ministry of Transportation and Communications and the Chinese Institute of Transportation, respectively

Mandatory Military Service   **Aug. 2020 ~ Dec. 2020**
Tainan, Taiwan

Research Center for Smart City Transportation and Network Services,   **July 2018 ~ July 2020**
NCKU   Tainan, Taiwan
Master's Student, Research Assistant (Part-time)

- Project: "V2X-based Emergency Vehicle Signal Preemption (EVSP) System"
    - Built a SUMO simulation model to evaluate traffic impacts before and after the implementation of the EVSP system
    - Planned and organized three field test scenarios ([link](#))

Vehicular & Roadside Networking Management Laboratory (V&R   **July 2017 ~ July 2018**
Lab), NCKU   Tainan, Taiwan
Undergraduate Student, Research Assistant (Part-time)

- Project: "Tainan City Signal Phase and Timing (SPaT) Service"
    - Developed an Android mobile application ([link](#)) providing the SPaT information of 1000+ signalized intersections via a traffic signal timing database from the Tainan City Bureau of Transportation
    - Led a group in a start-up program and was selected from 80 teams to win the *High Distinction Award* from the Ministry of Science and Technology (Taiwan)

- Project: "A Seamless Spatiotemporal Traffic Information Collection Framework by Intelligent Vehicle Probing"
    - Developed an Android mobile application for scanning Bluetooth CoD (Class of Device) information to improve the accuracy of the transportation mode classification while using wireless sniffing techniques to collect traffic information
    - Established a MySQL database to store 300GB of sniffed data and performed data pre-processing using SQL and Python
    - Related article: "An Innovative and Cost-Effective Traffic Information Collection Scheme Using the Wireless Sniffing Technique" published in the journal *Vehicles* ([DOI: 10.3390/4040054](#))

YCT Regional Transport Development Research Center, NCKU   **July 2017 ~ July 2018**
Undergraduate Student, Research Assistant (Part-time)   Tainan, Taiwan
- Administered and maintained a MySQL database for traffic accident data

PUBLICATIONS

Journal Papers

- Wei-Hsun Lee, **Hsuan-Chih Wang*** (2022). "A Person-Based Adaptive Traffic Signal Control Method with Cooperative Transit Signal Priority", *Journal of Advanced Transportation*, vol. 2022, 1–17, 2022. (DOI: 10.1155/2022/2205292)
- Wei-Hsun Lee, Teng-Jyun Liang, and **Hsuan-Chih Wang*** (2022). "An Innovative and Cost-Effective Traffic Information Collection Scheme Using the Wireless Sniffing Technique" *Vehicles*, 4(4), 996–1011. (DOI: 10.3390/4040054)

Conference Papers

- Chun-Cheng Liang, **Hsuan-Chih Wang***, Wei-Hsun Lee and Ming-Te Wang (2022). "Evaluating the Traffic Performance of Transit Signal Priority using SUMO Simulation: A Real-World Case". *2022 SUMO User Conference".* Jun 2022. (Abstract)
- Kuan-Yao Wang, **Hsuan-Chih Wang***, Ming-Chih Tsai, Shi-Sheng Sun, Wei-Hsuan Wang, Ya-Feng Hsu, Mu-han Wang, and Shia Li (2022). "A Preliminary Study about Impact Assessment of ITS Projects in Taiwan". *The 2022 International Conference and Annual Meeting of the Chinese Institute of Transportation* (Accepted)
- **Hsuan-Chih Wang*** (2022). "A Study of Applying Eco-Driving Speed Advisory System on Transit Signal Priority". *2021 SUMO User Conference Proceedings*, vol. 2, pp. 67–80, Jun. 2022. (DOI: 10.52825/scp.v2i.92)
- **Hsuan-Chih Wang***, Wei-Hsun Lee, and Ming-Te Wang (2021). "Analyzing Traffic Performance of Emergency Vehicle Signal Preemption System with Traffic Simulation", *Proceedings of the 2021 International Conference and Annual Meeting of the Chinese Institute of Transportation,* Taipei, Taiwan, 2-3 Dec 2021

Reports
- Yung-Hui Chou, Wei-Kuo Chou, Wen-Chien Yeh, Chen-Chieh Lu, Ming-Chih Tsai, Kuan-Yao Wang, KuoYi Hung, Yang Hong, **Hsuan-Chih Wang***, Chia-Hsing Chu, Wei-Hsuan Wang, and Sheng-Chih, Huang. "Technical Consulting and Management for Intelligent Transportation Systems Development and Vehicle Safety Regulations (1/4)". *Taipei City: C. E. Consultants, Inc,* 2021

PATENTS

Wei-Hsun, Lee; Chien-Ming, Chou; **Hsuan-Chih, Wang.** "Vehicle Driving Assistance Device", Taiwan Patent, No. M589660, filed January 23, 2019, and issued January 6, 2020

AWARDS AND HONORS

- 2019 Ding-Xin Liu Dean's Award (four students awarded per academic year)
- 2019 Academic Excellence Award (top 5% in academic performance among 50 students per academic year)
- 2018 Outstanding Graduate Commendation Award (two department graduates recognized per year for excellent academic performance and outstanding contributions to department affairs)

TEACHING EXPERIENCE

Teaching Assistant, Special Topics on Intelligent Transportation Systems   **2020 Fall**
Department of Transportation and Communication Management Science, NCKU
- Guided students in preparing and presenting research findings

Teaching Assistant, Introduction to Computer Systems   **2019 Fall**
Department of Transportation and Communication Management Science, NCKU
- Assisted Professor Wei-Hsun Lee in teaching computer programming to 60 freshman and sophomore undergraduates
- Planned two lessons and two assignments, graded mid-term and final exams, and explained challenging concepts during TA hours

LANGUAGES AND SKILLS

Languages	Mandarin (Native), English (Advanced, TOEFL 102/120)
Software	Simulation of Urban Mobility (SUMO)
Programming	Python, R, MySQL, Java
Skills	Mathematical Programming (Mixed-Integer Linear Programming), Data Mining, Machine Learning

REFERENCES

Wei-Hsun Lee, Professor and Director of the Research Center for Smart City Transportation and Network Services
Department of Transportation and Communication Management Science
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