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 (Scholaro GPA Conversion: 3.97/4.0)
• 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 (Scholaro GPA Conversion: 3.58/4.0)
• Last 60 credits: 3.92/4.3 (Scholaro GPA Conversion: 3.78/4.0)

EXPERIENCE

Transportation Research Center, National Yang Ming Chiao Tung University **Jan. 2023 ~ July. 2023**
Taipei, Taiwan
Research Assistant
- Project: "A Study on Freeway Traffic Accident Prediction and Emergency Management in Taiwan"
  - Collaborated with other research assistants to analyze the freeway traffic crash data and found out root cause.
  - Developed statistical methods to predict the likelihood of traffic accidents on freeways.

Intelligent Transportation System Center, China Engineering Consultants. Inc **Oct. 2021 ~ Jan. 2023**
Taipei, Taiwan
Associate Researcher
- 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 U.S. 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, NCKU **July 2018 ~ July 2020**
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 Lab), NCKU **July 2017 ~ July 2018**
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

- Lee, W.-H., and **Wang, H.-C**.*, (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)
- Lee, W.-H., Liang, T.-J., and **Wang, H.-C.*,** (2022). "An innovative and cost-effective traffic information collection scheme using the wireless sniffing technique". *Vehicles*, 4(4), 996–1011. (DOI: 10.3390/vehicles4040054)

Conference Papers

- Liang, C.-C., **Wang, H.-C**.*, Lee, W.-H., and Wang, M.-T., (2022). "Evaluating the traffic performance of transit signal priority using SUMO simulation: A Real-World Case". *2022 SUMO User Conference*. Virtual, Online. 09-11 May. (Abstract)
- Wang, K.-Y., **Wang, H.-C**.*, Tsai, M.-C., Sun, S.-S., Wang, W.-H., Hsu, Y.-F., Wang, M.-H, and Li, S. (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.* Keelung, Taiwan, 1-2 Dec. (Accepted)
- **Wang, H.-C.*** (2022). "A study of applying eco-driving speed advisory system on transit signal priority". *SUMO Conference Proceedings*, 2, 67–80. (DOI: 10.52825/scp.v2i.92)
- **Wang, H.-C.***, Lee, W.-H., and Wang, M.-T., (2021). "Analyzing traffic performance of emergency vehicle signal preemption system with traffic simulation", *the 2021 International Conference and Annual Meeting of the Chinese Institute of Transportation.* Taipei, Taiwan, 2-3 Dec

Reports

- Chou, Y.-H., Chou, W.-K., Yeh, W.-C., Lu, C.-C., Tsai, M.-C., Wang, K.-Y., Hung, K.-Y., Hong, Y., **Wang, H.-C.***, Chu, C.-H., Wang, W.-H., and Huang, S.-C,. "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 are 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 are 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