

# Yuan-Hsi Chien

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## Education

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### National Taiwan University (NTU)

Taipei, Taiwan

*M.S. in Civil Engineering, Computer-Aided Engineering (CAE) Division*

Sep. 2022 - Jan. 2025

- **Advisor:** Prof. I-Yun Lisa Hsieh Ph.D.
- **Thesis Title:** Enhancing Urban Energy Resilience: Vehicle-to-Grid (V2G) Strategies within Electric Scooter Battery Swapping Ecosystems

### National Yang Ming Chiao Tung University (NYCU)

Hsinchu, Taiwan

*B.S. in Civil Engineering*

Sep. 2018 - Jun. 2022

- **Cross-Disciplinary Specialty:** Trans-disciplinary Design and Innovative Technology

## Journal Publications

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1. **Chien, Y. H.**, Hsieh, I. Y. L. (2025). Enhancing Urban Energy Resilience: Vehicle-to-Grid (V2G) Strategies within Electric Scooter Battery Swapping Ecosystems. *Sustainable Cities and Society* (IF = 10.5), 118, 106004.
2. **Chien, Y. H.**, Hsieh, I. Y. L., & Chang, T. H. (2023). Beyond personal vehicles: How electrifying scooters will help achieve climate mitigation goals in Taiwan. *Energy Strategy Reviews* (IF = 7.9), 45, 101056.
3. **Chien, Y. H.**, Hsieh, I. Y. L. (2024). Green Transformation of Bus Shelters: Implementation and Benefits of Solar Photovoltaic. *Journal of Taiwan Energy*, 11(4), 1-22 (in press).
4. Tseng, J. S., **Chien, Y. H.**, Chen, R. W., & Hsieh, I. Y. L. Costs and Carbon: Evaluating the Trade-offs in Taiwan's Shift Towards Electric Vehicles. *International Journal of Sustainable Transportation* (IF = 3.1) (under review).

## Conference Participation

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1. **Chien, Y. H.**, Hsieh, I. Y. L. Enhancing Urban Energy Resilience: Vehicle-to-Grid (V2G) Strategies within Electric Scooter Battery Swapping Ecosystems. Poster presentation will be delivered at *Board A121, Event 2047 (Mon., Jan. 6, 8:00 AM – 9:45 AM ET, Convention Center, Hall A)*, the 104th Transportation Research Board (TRB) Annual Meeting, Washington, DC, Jan. 2025.
2. **Chien, Y. H.**, Hsieh, I. Y. L. Smart Grid Integration via Vehicle-to-Grid: Enhancing Urban Energy Resilience with Electric Scooter Battery Swapping Stations. Poster presentation delivered at the 2024 International Conference and Annual Meeting of the Chinese Institute of Transportation, Taichung, Taiwan, Dec. 2024. *Nominated for Best Paper Award consideration.*
3. Yeoh, J. H., Hu, Y. S., **Chien, Y. H.**, Hsieh, I. Y. L. Smart Battery Swap Systems with Vehicle-to-Building Integration: Pathways to Sustainable Energy and Net-Zero Emissions. Poster presentation delivered at the 21th Taiwan Power Electronics Conference & The 45th Symposium on Electrical Power Engineering, Tainan, Taiwan, Nov. 2024.
4. **Chien, Y. H.**, Hsieh, I. Y. L. Empowering Grid Stability and Carbon Mitigation: Vehicle-to-Grid (V2G) Strategies for Electric Scooter Battery Swap Stations. Oral presentation delivered at the 34th KKHTCNN Symposium on Civil Engineering, Pattaya, Thailand, Nov. 2023.
5. **Chien, Y. H.**, Hsieh, I. Y. L. How Much Do E-Scooters Really Cost? Life Cycle Assessment and Costing Tool Development. Oral presentation delivered at the 2022 International Conference and Annual Meeting of the Chinese Institute of Transportation, Keelung, Taiwan, Dec. 2022.
6. Tseng, J. S., **Chien, Y. H.**, & Hsieh, I. Y. L. Assessment of life cycle carbon emissions and costs of passenger vehicle electrification. Oral presentation delivered at the 2022 International Conference and Annual Meeting of the Chinese Institute of Transportation, Keelung, Taiwan, Dec. 2022.
7. **Chien, Y. H.**, Hsieh, I. Y. L. Life Cycle Environmental and Cost Comparison of Scooters in Taiwan. Oral presentation delivered at the 43rd IAEE International Conference, Tokyo, Japan, Jul. 2022.

## Research Engagement

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### Vehicle-to-Building (V2B) Strategy Optimization for E-Scooter Battery Swapping Stations

Research Collaboration

Sep. 2023 - Present

### Implementation and Benefits of Solar Photovoltaic on Bus Shelters

Department of Transportation, Taipei City Government

Feb. 2024 - Jun. 2024

### Vehicle-to-Grid (V2G) Strategies within E-Scooter Battery Swapping Ecosystems

Master's Thesis

Sep. 2022 - Jun. 2024

### How Much Do E-Scooters Really Cost? Development of a Life Cycle Analysis Tool

2021 NTU CAE Internship Program

Jun. 2021 - Sep. 2022

### Carbon Footprint Calculator for Delivery Services (Honorable Mention)

2021 Taiwan Clean Energy & Tech Creative Contest

Aug. 2021 - Oct. 2021

### Panorama Image Stitching and Modeling for Buildings in NYCU

B.S. Independent Research | Advisor: Prof. Tee-Ann Teo Ph.D.

Mar. 2021 - Jul. 2021

## Teaching Experience

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### TA, Energy Systems Engineering and Economics | NTU

Fall 2024

- Class of 94 junior / senior undergraduate or graduate students.
- Conducted problem-solving and instruction sessions.

### TA, Engineering Economics (English Taught Course) | NTU

Spring 2024

- Class of 60 junior / senior undergraduate students.
- Conducted problem-solving and instruction sessions in English.

### Speaker, GitHub Pages Workshop | 2024 NTU CAE Internship Program

Aug. 2024

- Delivered a speech and hands-on tutorial on building websites using GitHub Pages.

### Advisor, 3 B.S. Independent Research Projects | NTU

Spring 2023 - Fall 2024

- Fall 2024: Hydrogen Storage & Supply Chain Economics
- Fall 2023 - 2024: V2B Strategy Optimization for E-Scooter Battery Swapping Stations
- Spring 2023: Analysis of Vehicle Kilometers Traveled (VKT) for E-Scooters in Taiwan

## Other Experience

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### Webmaster | E3 (Energy, Economics, & Environment) Center, NTU

Sep. 2022 - Present

- Designed and launched an interactive website for the lab, boosting engagement.
- Managed regular updates and site maintenance to ensure smooth operation.

### Organizing Staff | 2023 NTU CAE Internship Program

Summer 2023

- Developed and launched a dedicated NFT minting site for interns.
- Coordinated events, promoting collaboration among interns.

### Vice Club President | Darts Club, NYCU

Jun. 2021 - Jun. 2022

- Organized the official darts competition for the 2021 Meichu Games.

### Member | NYCU International Volunteer Project in ASEAN

Summer 2019 & 2020

- Built a classroom for a rural school in Oddar Meanchey, Cambodia, supporting education access.
- Constructed a wooden platform in Hualien, Taiwan, enhancing local communal space.

## Skills

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**Languages:** Mandarin Chinese (Native Fluency), English (Excellent Fluency).

**Programming:** Python (Matplotlib, Pandas, Numpy), Frontend Development (Vanilla CSS & JS, D3.js, SEO, ARIA).

**Other Skills:** LaTeX, Autodesk Revit, Autodesk Fusion360, SketchUp, Rhino, Grasshopper, Adobe Illustrator, Adobe Photoshop.