Wei-Chen Li

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Education

Georgia Institute of Technology *Aug 2025 – present*
PhD in Robotics

National Taiwan University *Sept 2022 – Aug 2024*
MS in Mechanical Engineering

- GPA: 3.93/4.0
- Thesis: Extension of compressive sampling for eddy current 3D reconstruction DOI: 10.6342/NTU202400686

National Taiwan University *Sept 2017 – June 2021*
BS in Mechanical Engineering

- GPA: 3.96/4.0 (Rank: 3/142)

Publications

- **W. C. Li** and C. Y. Lin, Eddy current defect tomography using a hybrid binary vector recovery algorithm,'' *IEEE/ASME Transactions on Mechatronics*, vol. 30, no. 4, pp. 3072-3080, 2025. DOI: 10.1109/TMECH.2025.3565800
- **W. C. Li** and C. Y. Lin, Extension of compressive sampling to binary vector recovery for model-based defect imaging,'' Under review. DOI: 10.48550/arXiv.2412.01055
- **W. C. Li** and C. Y. Lin, Sparse magnetic array for the imaging of defects in multilayer metals,'' *IEEE Sensors Journal*, vol. 24, no. 9, pp. 14082-14092, 2024. DOI: 10.1109/JSEN.2024.3381623
- **W. C. Li** and C. Y. Lin, Unit interval vector recovery from sparse measurements for eddy current defect imaging,'' In *The 21th International Conference on Automation Technology*, 2024. PDF

Research Experience

Full-time Research Assistant *Aug 2024 – present*
Mechatronics and Intelligent Automation Research Lab, National Taiwan University

- Implemented discrete elastic rod model with convex formulation of compliant contact to simulate the manipulation of ropes and other slender objects.
- Developed a comprehensive framework to solve the NP-hard problem of recovering binary vectors from underdetermined systems of linear measurements.

Research Assistant *July 2022 – June 2024*
Mechatronics and Intelligent Automation Research Lab, National Taiwan University

- Proposed an algorithm based on variational inference for binary vector recovery from linear measurements.
- Apply the method to model-based eddy current defect imaging, improving sampling efficiency.
- Implemented a mixed integral-differential method called distributed current source'' to model eddy currents.

Student Researcher *July 2020 – Jan 2021*
Robotics Lab, National Taiwan University

- Port monocular SLAM to an Android phone.
- Integrated camera and IMU data for navigation in GPS-denied environments.

Awards and Honors

- HIWIN Best Master's Thesis Award (10000$ prize)
- Best Paper Award (Second Prize), The 21th International Conference on Automation Technology

- Professor Lung-Wen Tsai Memorial Scholarship
- Presidential Award (top 5% in grades) for 5 semesters, Department of Mechanical Engineering, National Taiwan University