







Wei-Chen Li

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Education

- 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](https://doi.org/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*, early access, 2025. [DOI: 10.1109/TMECH.2025.3565800](https://doi.org/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](https://doi.org/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](https://doi.org/10.1109/JSEN.2024.3381623) 

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.
- Independent Researcher** Mar 2022 – May 2022
Independent study
- Self-study control theory and complete personal projects during the transition period between completing mandatory military service and starting my Master’s program.
- Student Researcher** July 2020 – Jan 2021
Robotics Lab, National Taiwan University
- Port monocular SLAM to an Android phone, integrating both camera and IMU.

Awards and Honors

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| HIWIN Best Master’s Thesis Award (10000\$ prize) | 2024 |
| Best Paper Award (Second Prize), The 21th International Conference on Automation Technology | 2024 |
| Professor Lung-Wen Tsai Memorial Scholarship | 2024 |
| Presidential Award (top 5% in grades) for 5 semesters, Department of Mechanical Engineering, National Taiwan University | 2017 – 2021 |