








# 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 title: Extension of compressive sampling for eddy current 3D reconstruction [PDF](#) 
- National Taiwan University** Sept 2017 – June 2021  
*BS in Mechanical Engineering*
- GPA: 3.96/4.0 (Rank: 3/142)

## Publications

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- W. C. Li and C. Y. Lin, “Extension of compressive sampling to binary vector recovery for model-based defect imaging,” Under review. [PDF](#) 
  - W. C. Li and C. Y. Lin, “Eddy current defect tomography using a hybrid binary vector recovery algorithm,” *IEEE/ASME Transactions on Mechatronics*. [PDF](#) 
  - 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. [PDF](#) 
  - 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](#) 

## Experience

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- Full-time Research Assistant** Aug 2024 – present  
*Mechatronics and Intelligent Automation Research Lab, National Taiwan University*
- Implemented the discrete elastic rod model with convex formulation of frictional contact to simulate rope and slender structure manipulation.
  - 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

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|---|-------------|
| HIWIN Best Master’s Thesis Award (3000\$ 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 |