

# Yixin Chen (Ztang, Yit Xiaang)

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## EDUCATION

**University of Minnesota – Twin Cities, Minneapolis, MN, USA**

*B.S. in Data Science, Minor in Mathematics*

**Sep 2024 – Present**

*GPA: 4.0/4.0*

**Hefei University of Technology, Hefei, Anhui, China**

*B.Eng. in Vehicle Engineering (Transferred out)*

**Sep 2020 – Jan 2024**

*GPA: 3.75/4.3*

## PUBLICATIONS

- Chen Y., Fan B., Li J., *et al.* “An Automated Storage and Retrieval System Optimization with MILP Methods.” *Proc. 5th Int. Conf. on Computer Information Science and Artificial Intelligence (CISAI)*, SPIE, 2023, 12566: 744–752.
- Chen Y. “Application of Nanomaterials for Improving Zinc-ion Batteries Performance.” *J. Phys.: Conf. Ser.* 2798 (2024): 012004.

## RESEARCH EXPERIENCE

**Independent Study — Sketching & Sampling Algorithms (ML Theory)**

**Jan 2026 – Present**

*Supervised Independent Study    Supervisor: Swati Padmanabhan    University of Minnesota Twin Cities*

- Studying randomized sketching and sampling methods for large-scale linear algebra and machine learning, following CMU-style curriculum (e.g., leverage scores, subspace embeddings, CountSketch, SRHT).
- Analyzed theoretical guarantees for regression, low-rank approximation, and norm preservation using probabilistic bounds.
- Implementing and benchmarking sketch-based algorithms in **Python** to evaluate accuracy–efficiency tradeoffs on high-dimensional datasets.

**Towards Tactile Intelligence: Inverse Neural Modeling and Magnetic Field Sensing for MIMMS**

**Jun 2025 – Aug 2025**

*Undergraduate Research Intern    Supervisor: REN Hongliang    The Chinese University of Hong Kong*

- Implemented reverse computation on a multi-head neural network for magnetically induced metamorphic materials via continuum simulation.
- Visualized soft linear MIMMS shape and position tracking through annular magnetic sensor arrays.
- Designed AnySkin visualization for distributed force detection on tactile skin layers.

**Neural HVAC Cycle Network-Enabled Optimal Control of Closed-loop Fluid Infrastructure System**

**Dec 2024 – Sep 2025**

*Undergraduate Research Assistant    Supervisor: Shancong Mou    University of Minnesota Twin Cities*

- Performed high-fidelity thermal–fluid simulations of HVAC heat exchangers using ANSYS FLUENT.
- Developed regression-based predictive control models in Python, achieving a 17% improvement in energy simulation accuracy.

**Intelligent Battery Recycling Bin Based on Arduino**

**Apr 2023 – Jan 2024**

*Undergraduate Research Assistant    Supervisor: Bofu Wu    Hefei University of Technology*

- Led team design of an intelligent recycling bin with LabVIEW-based human–computer interaction.
- Designed the external shell via AutoCAD and implemented control logic and homing functions.

**Milli-Newton Force Transducer Based on Leaf Cantilever and Capacitive Sensor**

**Sep 2022 – Nov 2023**

*Undergraduate Research Assistant(Independent)    Supervisor: Yang Xu    Hefei University of Technology*

- Modeled structural components in Autodesk Inventor and conducted size optimization through finite-element simulations in ANSYS.
- Developed a LABVIEW interface for automated data acquisition and real-time visualization from the experimental test bench.

**Radar–Camera Fusion for Autonomous Driving**

**May 2021 – Apr 2022**

*Undergraduate Research Assistant(Team Leader)    Supervisor: Junzhao Jiang    Hefei University of Technology*

- Developed multimodal fusion algorithms using OpenCV, PyTorch, and MMDetection on Linux.
- Built experimental setups with CATIA V5 for radar–camera calibration and debugging.

## INDUSTRY EXPERIENCE

**Zhejiang Aborn Automotive Sensor Co., Ltd, Ruian, China**

**Feb 2024 – May 2024**

*Operator & Experimenter*

- Conducted experimental testing and calibration for automotive sensors to ensure product reliability.
- Optimized workbench setups to improve testing efficiency and streamline production.

**East China Engineering Science & Technology Co., Ltd, Hefei, China**

**Jul 2022 – Sep 2022**

*Structural Engineer Intern*

- Performed finite-element analyses and parameter optimization for pressure-vessel designs in ANSYS.
- Improved structural integrity and material utilization for mechanical systems.

## LEADERSHIP & ACTIVITIES

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**Teaching Assistant – CSCI 2081: Introduction to Software Design (UMN)**

**Sep 2025 – May 2026**

- Assisted in syllabus redesign to integrate data science content, including NumPy–Java bridge and Docker labs.
- Provided technical guidance during lab and office hours on Java programming and algorithm design.

**Welcome Week Leader – Orientation & Transition Experience Office, UMN**

**Aug 2025 – Sep 2025**

- Guided 50+ new students during orientation events and large-scale campus activities.

**Director, New Media Center – Communist Youth League, HFUT**

**Aug 2021 – Jul 2023**

- Managed media production and campus promotion, leading workshops on photography and creative design.
- Contributed to the center’s recognition as a *National New Media Demonstration Base*.

**Volunteer Service**

**2014 – 2024**

- Teaching Support at Xinyingpan Village Primary School (7 days).
- Information Desk Volunteer at Rui’an Hospital of Traditional Chinese Medicine (96 hours).
- Book Sorting Volunteer at Rui’an Library (84 hours).

## AWARDS & HONOURS

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- Dean’s List, College of Science and Engineering, UMN 2024-2026
- “Car Safety Test” Alumni Scholarship May 2023
- National Scholarship Apr 2021
- Merit Student May 2021
- Bronze Award, “Internet+” Innovation & Entrepreneurship Competition Jun 2021
- Second Prize, Mathematics Competition, HFUT Apr 2021

## TECHNICAL SKILLS

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- **Programming:** Python, R, Java, C++, MATLAB, MySQL
- **Tools:** PyTorch, ANSYS, Inventor, AutoCAD, LabVIEW, Docker
- **Concepts:** Neural Networks, Regression, Optimization, Natural Language Processing
- **Languages:** Wenzhounese (Native), Mandarin (Native), English (Professional), Cantonese (Fluent), Korean (Elementary)