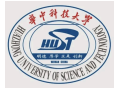




Xiaoyu Fan

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Educational background



**Huazhong University of Science and Technology -
School of AI & Automation - Intelligent Medical
Engineering, Second Year of Undergraduate Studies**
| *Sep. 2024 - present*

Rank: 1 / 11 (Last Semester), 3 / 11 (Overall)

Core Courses: Data Structures and Algorithm Analysis, Databases,
Computer Networks, **Machine Learning, Pattern Recognition,
Computer Vision**, Medical Digital Signal Processing, Medical Image
Processing, Anatomy and Physiology.

Research Experience



**Shanghai Jiao Tong University, School
of Artificial Intelligence, DeepDelta Lab**
- **Prof. Shaobo Cui, RA** | *May. 2026 -*

present

Research Topic: **Causal World Model** - from perception to
prediction, fault analysis and intervention.

What I focus on: Filling in the missing counterfactual pairs from
human&robot data.



**Union Hospital Affiliated to Tongji Medical
College, HUST - Prof. Xiangdong Chen & Dong
Yang's Group (Neuroscience-AI Interdisciplinary
Direction), Scientific Collaboration** | *Dec. 2025 -*

present

In Feb 2026, I collaborated on the design of an algorithm
for extracting features from **neural electrical signals**;
Currently involved in the design of algorithms for **a patent
relating to a quantitative pain prediction model in
mice**, as well as the research and development of a
**peripheral nerve electrical stimulation device based on
an embedded AI chip**.

Skill

Language: C++, Python, Java,
Matlab

Tools & Skills: Git, Vibe Coding,
OpenCV, Transformer,
Fine-tuning

Writing: Latex, Markdown,
HTML

Honours and Awards

Huazhong University of
Science and Technology

2024-2025 Self-Reliance and
Endeavour Scholarship

Mastery of language

English (CET-6: 542)

Chinese (Mandarin, Level 2
Grade A)



DeepKW
Innovation Works
地普开物

**DeepkW Student Innovation Team,
HUST, guided by Prof. Ran Wang** | *Nov.
2025 - present*

Research **Multi-Agent Social Simulation** and **MoE**;
Joined the team for the **2025 SMP**;
Involved in **ACL 2026 Rebuttal**;

A paper currently under review for **EMNLP 2026**, focusing on the generation of personalised popular science content; Served as a primary reviewer for a paper at **IJCAI 2026**.



School of AI & Automation, HUST - Prof. Yang Xiao's Group (MLLM), Research Internship | Jul. 2025 - present

Conducted **MLLM intent understanding** research; Standardized eye-blinking behavior annotation for MLLM training during the summer holidays of 2025.

Project Experience

"Omission-based Deception" Fake News Detection Dataset |

Apr. 2026

- Construction of a benchmark dataset (approximately 4,000 samples) for detecting "omission-based deception" in LLMs, featuring a hierarchical labelling system and six fine-grained categories; implementation of data generation scripts and evaluation workflows, supporting various modelling approaches such as SFT and prompting.

Image Segmentation and Region Coloring System (C++ / OpenCV) | Mar. 2026 - Apr. 2026

- Project Theme: Developed an end-to-end image processing pipeline, covering seed generation, watershed segmentation, and region graph coloring.
- Core work:
 - Designed a constraint-based sampling method to generate seed points with controlled minimum distance
 - Constructed a Region Adjacency Graph (RAG) to model relationships between regions
- Achievements:
 - Achieved second-level runtime on 600×600 images with ~1000 seeds
 - Maintained high coloring success rate

2026 MCM (Leader & Programmer), M Prize | Feb. 2026

- Project Theme: Dynamic Simulation and Prediction of Mobile Phone Lithium-Ion Battery Power Consumption Driven by Multiple Factors.
- Core work: Developed a continuous-time battery model with bidirectional thermo-electrical coupling based on the **Arrhenius Equation**; Implemented numerical solvers and utilized **Markov Chains** to quantify user behavior uncertainty, achieving dynamic SOC prediction.

2025 CUMCM (Leader & Programmer) | Sep. 2025

- Project Theme: Optimisation of NIPT Testing Timing Based on **Clinical Data** and Intelligent Assessment Model for Foetal Chromosomal Abnormalities.
- Core work: Data cleaning using Python (Pandas, Scikit-learn), constructing **LightGBM** models, and coordinating the team to complete the entire workflow from modelling and programming to

paper writing.

C Language Course Design — Resume Design Assistance System (Team Leader) | Jan. 2025 - Apr. 2025

- Project Theme: A Modular CV Design Assistance System Based on C Language and the Borland C++ 3.1 environment.
- Core work: Architected a **GUI engine from scratch** using BGI library; implemented 16/24-dot matrix Chinese rendering and structure-based data/display decoupling.
- Achievements: Implemented multi-format export functionality (plain text, simulated .doc), alongside integrated user registration and login systems, and a file-based local database management module.