ktwu@utexas.edu
(+1) 737-420-8027

Koutian Wu

GitHub: ktwu01
LinkedIn: ktwu01

ML Modeling, AI Agent Development/Test/Evaluation, Full-Stack Engineering
2+ Years work experience; **4+** Years research and programming experience with Python and MATLAB.

Education

PhD Student AI for Geosciences, University of Texas at Austin 2024 – expected May 2029
Teaching Assistant for 260+ students, instructor rating ~ 4.5/5

B.S. in Geosciences (Honors Class) University of Science and Technology of China 2020 – 2024
Nominee of the **Highest Honor** for USTC undergrads (one of the two ESS School nominees)
Founded one of the largest student clubs, grew from 0 to 1,200+ members [News]

Work Experience

AI Intern, AI Agent Knowledge Base Evaluation **PineAI (Singapore)** | Remote | Jul. 2025 – Aug. 2025
- Tech Stack: Python, Data Sanitization, Evaluation Dataset Creation, Prompt Engineering.
- Built an evaluation system from scratch for multi-dimensional assessment of PineAI Agent's knowledge base.
- Developed a data sanitization module achieving 70%+ accuracy on 1,000+ call sessions.
- Implemented a Q&A extraction module to reach 80%+ knowledge extraction accuracy for evaluation dataset.
- Designed a multi-dimensional evaluation engine using LLM-as-a-judge method with concurrent processing.

Full-Stack Intern, AI Text Processing System **ZaiwenAI** | Beijing, China | Jun. 2025 – Jul. 2025
- Tech Stack: FastAPI, Celery, Redis, React/Vue.js, LLM API | [Code] [Demo] (Example, non-company business)
- Managed the full product lifecycle, from design to full-stack implementation and cloud deployment.
- Designed the MVP of AI-footprint detection, removal, and plagiarism checking for students and researchers.
- Built a RESTful backend with FastAPI and an asynchronous task queue with Celery/Redis, +65% efficiency.

Research Assistant, ML Model Development **UT-Austin** | Austin, TX | Aug. 2025 – Present
Project Admin, High Performance Computing Allocation **NSF NCAR** | Remote | Aug. 2025 – Present
- Tech Stack: Physics-based hydrology model development; machine learning parameter calibration.
- Applied for and funded by the NSF NCAR's 1k GPU hrs, 22k CPU hrs high performance computing allocation.
- Developed a testing framework in validating model outputs against observation data and traditional models.
- Architecting a model framework delivering AI-powered precision, physics-powered interpretability.

Full-Stack Developer, UT01 Navigation Page **Independent** | Hybrid | Jun. 2025 – Present
- Tech Stack: Jekyll, JS/HTML/CSS | Impact: 10,700+ visits | [Code] [Website]
- Created a unified resource platform for UT Austin's fragmented campus services based on user research.
- Applied SEO methods to enhance the exposure rate; optimized frontend for cross-device compatibility.

Visiting Scholar, High Altitude Observatory **NSF NCAR** | Boulder, CO | Jul. 2023 – Dec. 2023
- Tech Stack: MATLAB, Fortran, Earth System General Circulation Model, continuous wavelet transform | [Code]
- Demonstrated global propagation of atmospheric waves in the high-resolution simulation.
- First-authored presentation at the NASA DRIVE Science Center Workshop and AGU Meeting [Abstract].

Core Skills

- **AI/ML**: LLM Integration, AI Agent Development, ML Model Research, Prompt Engineering
- **Programming**: Python, JavaScript, React, FastAPI, Node.js, PostgreSQL, Redis

Academic Publications

1. **Wu, K.**, Yi, W.*, Xue, X.*, Reid, I., & Lu, M. (2024). Diurnal and seasonal variations of meteor speed and arrival angle observed by Mengcheng meteor radar. *JGR: Space Physics*. [Paper] [Data]
2. **Wu, K.***, Xu, X., Jiang, J., & Shen, A. (2024). A Summary Report on the Space Physics Practical Education in 2022. *Rev Geophys and Planetary Phys*. [Paper] [News]

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