

CHEN ZHU

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EDUCATION

Nanjing University

Nanjing, China

B.S. in Physics; GPA: 4.53/5.00 (Rank: 2/33)

2022.09 – 2026.06

- Concurrently completed an extensive Computer Science and Mathematics curriculum alongside Physics degree requirements.
- **CS Coursework:** OS, Data Structures, Computer Architecture, NLP, Computer Vision, Advanced Machine Learning, Heuristic Search & Evolutionary Algorithms, Intelligent Application Development, Blockchain.
- **Mathematics:** Probability & Mathematical Statistics, Stochastic Processes, Information Theory, Random Processes, Introduction to AI, Statistical Physics (Theory).

Nankai High School

Tianjin, China

High School Diploma

2019.09 – 2022.06

PROJECTS

Aura OS: AI-Native Agent Operating System

2025.09 – Present

- Architected an AI-native OS treating the filesystem as extended memory, enabling file-based reasoning beyond linear prompt history and allowing agents to autonomously create, test, and explore tools during execution.
- Developed a **Ruby Kernel** daemon to orchestrate multi-runtime processes (Python, Shell) and enforce security for active tool directories via manifest validation.
- Engineered a **State Metabolism** engine using SQLite to manage persistent context and prevent prompt inflation based on configurable character limits.
- Implemented a **Context Discovery System** using .hint files and AURA_README to dynamically inject project-specific knowledge into agent context.

Autonomous Multi-Agent Research System

2025.04 – 2025.08

- Engineered a pipeline for automated scientific discovery using literature synthesis and "Hypothesis Flipping" to generate novel research plans and scientific ideas.
- Orchestrated specialized agents via **LangGraph** in a simulated academic conference for iterative refinement of research proposals using arXiv integration.
- Developed a **ReAct-based Code-Agent** for autonomous development and shell-based debugging of research software projects.

Feynman Tutor: AI-Driven Education Platform

2025.03 – 2025.06

- Built a full-stack platform based on the Feynman Technique, using AI for active probing and document-grounded questioning to facilitate deep learning.
- Awarded **3rd Place** (Group Leader) in Alibaba Tianchi Cup AI Innovation Competition; developed automated quiz generation and adaptive note-taking logic.

AWARDS & HONORS

National Award, China Undergraduate Physics Tournament (CUPT)

2023.09

3rd Place (Group Leader), Alibaba Tianchi Cup AI Innovation Competition

2025.05

Xiaomi Scholarship (Top 10% of the college)

2023.11

Yeung Wing Man Scholarship & University Merit Scholarship

2022 – 2025

Special Scholarship for Fundamental Sciences and Humanities

2023 – 2025

SKILLS

Programming : Python (FastAPI, PyTorch, LangGraph), Ruby, JavaScript (React), HTML/CSS, C, SQL

Tools & AI : Docker, Cursor, Claude Code, GitHub Copilot, LaTeX, Shell, Linux