Xinyuan Zhang

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Education

Tsinghua University |Department of Computer Science and Technology 2023.09—2027.06 (Expected)

Overall GPA: 3.86/4.0 (Top 20%), **Recent Semester GPA: 3.95/4.0 (Top 8%)**.

Hengshui No.1 High School 2020.09—2023.06

Gold Medal in the 36th China Chemistry Olympiad (Final) (8th place nationwide).

Technical Skills

- **Programming Languages**: Language-agnostic programming skills. Proficient in Python, C/C++; skilled in Java, TypeScript/JavaScript.
- **Development Technologies**: Frontend (React, Vue), Backend (Spring Boot), Database (PostgreSQL), Machine Learning (PyTorch).
- **Other**: Proficient in using common tools such as Linux, Shell, (Neo)Vim, Git, GitHub, LaTeX, HuggingFace, Conda, Docker, etc. Rich experience in using cluster servers.

Research Experience

Xuetui Program| 《DART-Math: Difficulty-Aware Rejection Sampling Optimization for Enhanced Math Problem Solving》 |*Research Member* 2024.5—2024.7

- Participated in the optimization research of large language models (LLM) in solving mathematical problems, specifically responsible for setting up the experimental environment and data processing.

THUNLP Alignment and Safety Research Group |*Research Intern* 2024.7—2025.2

- **Ultrainteract Data Construction**: Designed and constructed high-quality test datasets for evaluating the multi-turn interaction capabilities of large models, improving data diversity and complexity.
- **Development of Multimodal Large Models in the Field of Chemistry**: Led the fine-tuning training of visual language models in the specialized field of chemistry, **independently completed the entire workflow from data collection, construction, preprocessing, training, and evaluation**, significantly improving the model's performance in chemical formula recognition.

Tsinghua Laboratory of Brain and Intelligence |*Research Intern* 2024.9—2025.2

- **NeuroSync: Universal Brain-Computer Interface System**
  - Designed and implemented an EEG signal input system based on the SSVEP (Steady-State Visual Evoked Potential) paradigm, achieving *brain-controlled typing*.
  - Responsible for the development of core frontend and backend functions, including signal acquisition, processing, and user interface optimization.
  - The project has obtained **National Copyright Administration Computer Software Copyright Certification** and is planned to be submitted to ACM Multimedia 2025.
- **Energy-guided Optimized Learning for Neural Decoding**
  - Developed a neural network training algorithm based on dynamic adjustment of EEG data quality.
  - Participated in experimental design and result validation, planned to be submitted to Nature Computational Science.

Knowledge Engineering Group |*Research Intern* 2025.3—Present

- **Software Engineering Agents based on Online Reforcement Learning**
  - Currently working on developing an intelligent agent system utilizing online reinforcement learning algorithms to autonomously analyze, prioritize and resolve real-world GitHub Issues, aiming to significantly reduce manual intervention in the software maintenance process.

Projects

SnakeFoP |*Introduction to Programming* 2023.10-2023.12

- Independently implemented a snake game with multiple game modes using C++.
- Implemented modules such as game engine, interface rendering, and user interaction.
- Participated in classroom demonstrations as an exemplary project.

News App Based on Java for Android |*Programming Training Summer Term* 2024.7

- Implemented features such as news browsing, category filtering, favorites management, history records, and personalized recommendations using Android SDK.
- Received full marks for the course project.

Tsinghua University Computer Science Course Guide |*Open Source Project Contributor* 2024.7-Present

- Actively participated in the maintenance of this open-source educational resource project, submitting high-quality course notes and study materials.

VSCode Plugin: Dark Theme Image View |*Personal Open Source Project* 2025.2

- Independently developed a VSCode plugin to solve the problem of blurry display of transparent background images in dark themes.

Yizhixuetang Online Education Platform |*Team Project* 2024.12-Present

- As a core development member, participated in the design and implementation of a complete online education platform frontend and backend system.
- Responsible for the development of the course management system and real-time online examination functions, ensuring system security and data consistency.

Papersgpt for Zotero With Sidebar |*Open Source Project Contributor* 2025.3

- Contributed to the development of a Zotero plugin that uses PapersGPT to generate summaries for academic papers, improving the experience of Zotero users.

Personal Summary

- **Language Skills**: Proficient in English (CET-4 score: 597), able to read English technical documents and academic papers fluently, with good English technical writing and communication skills.
- **Personal Traits**: Strong self-motivation, good at teamwork, efficient under pressure, with a strong curiosity and enthusiasm for learning new technologies.