JINGWEI ZUO

Tsinghua University, P.R. China
+86 159-5290-6186 | e: zuojw21@mails.tsinghua.edu.cn

EDUCATION

Tsinghua University Beijing, China
B.Sc. in **Mathematics and Physics** & B.Eng. in **Electrical Engineering (dual degree)** Sept. 2021 – June 2025

- GPA: **3.93**/4.00
- Exchange student to Northeastern University, MA, USA from Sept. 2023 to Dec. 2023
- Got an **A+** in *Fundamentals of Computer Program Design*, **A** in *Computer Organization and Architecture*, *Data Structures*
- Earn an award in courses such as *Software Programming Training*, *Android Programming*, and *Embedded System Design*.
- A- or more in *Calculus*, *Linear Algebra*, *General Physics 1,2 & 3*, and *Probability and Stochastic Processes*

PUBLICATIONS

AgentVerse: Facilitating Multi-Agent Collaboration and Exploring Emergent Behaviors
Weize Chen, Yusheng Su, Jingwei Zuo, Cheng Yang, Chenfei Yuan, Chen Qian, Chi-Min Chan, Yujia Qin, Yaxi Lu, Ruobing Xie, Zhiyuan Liu, Maosong Sun, Jie Zhou. *Proceedings of ICLR, 2024*

RESEARCH EXPERIENCE

Massachusetts Institute of Technology EECS (Hanlab) Cambridge, MA, USA
Research Assistant to Prof. Song Han Oct. 2023 –Present

- Now working on cutting-edge research of LLM pruning and efficient AI
- Advised by Ph.D. student Guangxuan Xiao

Tsinghua University (THU Natural Language Processing Lab) Beijing, China
Research Assistant to Prof. Zhiyuan Liu Mar. 2023 – Aug. 2023

AGENTVERSE: Facilitating Multi-Agent Collaboration and Exploring Emergent Behaviors

- A cutting-edge AI framework enabling *multiple agents* to *collaborate* like human teams, optimizing *problem-solving* in diverse fields such as text understanding and software development
- Implemented *dynamic role assignment*, inspired by human group dynamics
- Conducted *extensive experiments* in text understanding, reasoning, coding, tool utilization, and embodied AI to validate the framework's effectiveness
- Analyzed agent interactions within the framework, revealing *emergent sociological behaviors* such as volunteer behaviors and conformity behaviors
- Released the project code publicly on GitHub, facilitating further research and development in the field of autonomous agent collaboration

PROJECT EXPERIENCES

1. **NeRF Octree Optimization** June 2023

- Utilized *Octree* data structure to optimize the memory consumption and time efficiency of NeRF rendering
- Up to *4x* memory optimization compared to *voxel* storage and the rendering time is equivalent
- Got a better command of pytorch and the idea of how to make an AI model more efficient

2. Markov Chain Application in Tennis Competitions Dec. 2022

- Course project of *Probability and Stochastic Processes*, here is the report(in Chinese).
- Personally a tennis superfan and merged my passion for tennis with mathematical analysis.
- Utilized *Markov Chain* analysis to demonstrate the *stabilizing effect* of tennis's multi-game per set and multi-point per game rules on player performance.

3. **Wordinary: Comprehensive Learning Suite for Language Learners** July 2021 – Feb. 2022

- A multifaceted educational software tool designed to enhance *vocabulary building* for English learners, focusing on *high-frequency word extraction*, *quiz generation*, and *standard pronunciation audio creation*
- Engineered the software using Python 3 for backend processing and C# .NET for a user-friendly interface, ensuring compatibility with Windows systems
- Innovated by introducing customizable features for varied educational needs, such as setting benchmarks for word extraction adaptable for exams like CET-4, TOEFL, or GRE
- Actively managed and updated the project on GitHub, demonstrating continuous improvement and engagement with the user community

Selected Awards and Honors

- **Comprehensive Scholarship** (Excellent across academics, sports, arts, volunteer, and social practices) 2021–2022
- **Academic Excellence Scholarship** 2022–2023
- "TI Cup" Digital System Innovation Design Competition (Third Prize) Oct. 2022
  Designed self-tracking algorithms on microcontrollers and also intelligent algorithms to find the best route
- "Xindong" Vehicle Competition (Third Prize) Jan. 2022
  Developed a self-tracking mini-vehicle using a microcontroller, incorporating PID control methods and camera-based tracking for enhanced autonomous navigation

Skills

- High proficiency in Python with two years' experience of using numpy, matplotlib, and pytorch
- Advanced coding skills, proficient in developing complex algorithms and solutions across multiple programming languages such as C, C++, C#, Java, and Python
- Fluent in English and Mandarin (Native), enabling effective communication in diverse cultural and technical environments
- Two years of tennis playing experience