JIZHOU GUO

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Research Interests: Large Language Models, AI for Science.

EDUCATION

Shanghai Jiao Tong University • Shanghai, China   Aug 2022 – Present
Bachelor of Science • Zhiyuan College (**Honor, Top 10%**) • Mathematics and Applied Mathematics • GPA: 3.77
Relevant Coursework: Introduction to Computer Science A+, Ordinary Differential Equations A.

PUBLICATIONS

Submitted

- Zhihui Xie, **Jizhou Guo**, Tong Yu, Shuai Li. *Calibrating Reasoning in Language Models with Internal Consistency. arXiv, 2024*
- Jiaqi Wang, Zhengting Chen, Yifan Wu, Keyan Huang, Dian Zhang, **Jizhou Guo**, Xinglan Liu, Dan Peng, Weilong Zheng, Baoliang Lu. *Olfactory-EEG Paradigm: Emotion Elicitation and Cross-Stimulus Transfer Learning Analysis.*

RESEARCH EXPERIENCE

Xtra Group - National University of Singapore   Jun 2024 – Oct 2024
Advisor: Prof. Bingsheng He

- Developing innovative techniques for knowledge transfer from specialized domain expert models to large-scale server-side language models.

John Hopcroft Center for Computer Science - Shanghai Jiao Tong University   Oct 2023 – May 2024
Advisor: Prof. Shuai Li and Dr. Tong Yu

- Developed a novel "internal consistency" approach to calibrate reasoning in Large Language Models (LLMs).
- Conducted in-depth analysis of Chain-of-Thought (CoT) reasoning in LLMs through the lens of internal representations.

Zhiyuan Innovative Research Center - Shanghai Jiao Tong University   Dec 2022 - Jan 2024
Advisor: Prof. Bao-Liang Lu and Prof. Wei-Long Zheng

- Designed and executed experiments to predict human emotions from EEG signals under various olfactory stimuli.
- Implemented and compared multiple deep learning models (MLP, CNN, Transformer) with Domain-Adversarial Neural Networks (DANN).

Quantitative Biology Summer School - Center for Life Sciences, Peking University   Jul 2023

- Completed advanced courses in Systems Biology, Computational Neuroscience, and Bioinformatics, earning relevant certifications.
- Conceptualized and simulated a novel bio-responsive bandage using MATLAB, modeling drug diffusion processes for optimized wound healing.

Tencent Spark Project - Tencent Corporation   Aug 2022

- Engineered a robust palm liveness detection system.
- Integrated MediaPipe library to implement real-time palm movement validation.
- Developed an innovative screen detection algorithm using RGB to YCrCb color space conversion, successfully blocking palm images displayed on screens and improving overall system reliability.

COURSE PROJECTS

Frequency principle in deep learning   Oct 2023
PHY1226 Physics Laboratory II (tailored for mathematics class) (SJTU)

- Observed frequency principle: deep neural networks often fit target functions from low to high frequencies.
- Conduct experiment on frequency principle when fitting different functions or using different hyperparameters.

Fresnel Integral   May 2023
MATH1802 Numerical Analysis and Scientific Computing (SJTU)

- Test and compare the performance of various methods when calculating Fresnel Integral.

Van der Waals equation   Apr 2023
MATH1802 Numerical Analysis and Scientific Computing (SJTU)

- Compare the performance of Newton's method and fixed point iteration method when solving Van der Waals equation.
- Discuss the scope of application of the ideal gas equation.

HONORS AND AWARDS

Contest Prizes

- **Third prize** in Mathematics competition of Chinese College Students (Shanghai), Dec 2023
- **First prize** in Shanghai Collegiate Programming Contest, Sep 2023 (**Ranked 2nd in Shanghai**)
- **Gold medal** in Astar Programming Contest (Shanghai region), Aug 2023 (**Ranked 2nd in Shanghai**)

- **Gold medal** in 2023 China Collegiate Programming Contest (**CCPC**) National Invitational Contest (Hunan), May 2023
- **Gold medal** in 2023 International Collegiate Programming Contest (**ICPC**) Xi'an Invitational Contest, May 2023
- **Gold medal** in 2022 International Collegiate Programming Contest (**ICPC**) Asia Hangzhou Regional Contest, Dec 2022 (**Ranked 8th nationwide**)
- **Gold medal** in 2022 China Collegiate Programming Contest (**CCPC**) (Shanghai region), Sep 2022
- **Silver medal** in National Olympiad in Informatics (**NOI**), Jul 2021
- **Ranked 22nd nationwide** in National Olympiad in Informatics (**NOI**) Online Senior Group, Mar 2021

Scholarships
- Second-Class Academic Scholarship, SJTU (**Top 5%, ranked 2nd overall**)
- Zhiyuan Honors Scholarship (**twice**)

Technical Skills

- Programming languages: Python, C, C++, MATLAB, Linux Shell.
- Language: Chinese (Native Speaker), English (Proficient, TOEFL 105, CET6 648).
- Expertise & Hobbies: Piano (Amateur Level 10), Singing (Amateur Level 9), Music Theory (Amateur Level 5).