

# 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 – Aug 2024  
Advisor: [Prof. Bingsheng He](#)

- Working on knowledge transfer from domain expert models to server side large language models.
- Propose methodologies and implement experiments.

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

- Working on calibration of large language models.
- Investigate CoT reasoning in LLMs through the lens of internal representations.
- Propose internal consistency as a measure of the model's confidence and observed significant boost in performance.

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

- Use olfactory stimulation for emotion recognition.
- Use SVM, MLP and Transformer for three-class classification (positive, neutral, and negative emotion).

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

- Take courses concerning quantitative biology and receive relevant certificates.
- Proposed a kind of bio band-aid and used MATLAB to emulate the diffusion process.

**Tencent Spark Project - Tencent Corporation** Aug 2022

- Conduct liveness detection of palms.
- Use mediapipe library to detect the validity of the palm movement to block out paper palms.
- Convert RGB to YCrCb for screen detection to block out palms from the screen.

## 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%**)
- Zhiyuan Honors Scholarship (**twice**)

## TECHNICAL SKILLS

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- 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).