# JIZHOU GUO

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Research Interests: Large Language Models, Natural Language Processing.

## EDUCATION

**Shanghai Jiao Tong University** • Shanghai, China                              Aug 2022 – Present
*Bachelor of Science* • Zhiyuan College (**Honor, Top 10%**) • Mathematics and Applied Mathematics • GPA: 3.8
**Selected Courses:** Topic Course (Deep Learning) (A+, 100), Topic Course (Applied Mathematics) (A+, 100), Data Structure (Honor) (A+), Introduction to Computer Science (A+), Numerical Methods for ODE & PDEs (A+), Differential Geometry (A+), Introduction to Physics (Honor) (A+), Problem-solving and Practice (A+), Foundations of Data Science (A), Mathematical Analysis (Honor) (A), Ordinary Differential Equations (A), Partial Differential Equations (A), etc.

## PUBLICATIONS

*\* denotes equal contribution*

**Mining Intrinsic Rewards from LLM Hidden States for Efficient Best-of-N Sampling**

**Jizhou Guo**, Zhaomin Wu, Hanchen Yang, Philip S. Yu

*KDD 2026* [arXiv]

**Model-based Large Language Model Customization as Service**

Zhaomin Wu*, **Jizhou Guo**\*, Junyi Hou, Bingsheng He, Lixin Fan, Qiang Yang

*EMNLP 2025 main* [arXiv]

**PSG-Agent: Personality-Aware Safety Guardrail for LLM-based Agents**

Yaozu Wu*, **Jizhou Guo**\*, Dongyuan Li*, Henry Peng Zou, Wei-Chieh Huang, Yankai Chen, Zhen Wang, Weizhi Zhang, Yangning Li, Meng Zhang, Renhe Jiang, Philip S. Yu

*Under review* [arXiv]

**(Work on LLM Ensemble)**

Jizhou Guo (first author)

Manuscript in preparation

**Calibrating Reasoning in Language Models with Internal Consistency**

Zhihui Xie, **Jizhou Guo**, Tong Yu, Shuai Li

*NeurIPS 2024* [arXiv] [poster] [code]

**Cross-Stimulus Transfer Learning: Enhancing Emotion Recognition from Visual-Auditory to Olfactory Perception**

Jiaqi Wang*, Zhengting Chen*, Keyan Huang, Yifan Wu, Dian Zhang, **Jizhou Guo**, Xinglan Liu, Dan Peng, Baoliang Lu, Weilong Zheng

*EMBC 2025*

**LLM DNA: Tracing Model Evolution via Functional Representations**

Zhaomin Wu, Haodong Zhao, Ziyang Wang, **Jizhou Guo**, Qian Wang, Bingsheng He

*Under review* [arXiv]

**DeepResearchGuard: Deep Research with Open Domain Evaluation and Multi-Stage Guardrails for Safety**

Wei-Chieh Huang, Henry Peng Zou, Yaozu Wu, Weizhi Zhang, Yankai Chen, Dongyuan Li, Yangning Li, Angelo Zangari, **Jizhou Guo**, Liancheng Fang, Langzhou He, Chunyu Miao, Renhe Jiang, Philip S. Yu

*Under review* [arXiv]

**RECODE-H: A Benchmark for Research Code Development with Interactive Human Feedback**

RECODE Team

*Under review* [arXiv]

## RESEARCH EXPERIENCE

**BDSC Lab - University of Illinois Chicago**                                     Jun 2025 – Aug 2025
Advisor: Prof. Philip S. Yu

- Developed a highly parameter-efficient reward model leveraging the LLM hidden states, which systematically outperforms baselines with less than 0.005% of the parameters of baselines.
- Proposed PSG-Agent and a benchmark for personalized guardrail of LLM-based agents.

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

- Proposed a novel framework that facilitates LLM customization as a service for domain-specific applications. It achieved substantial performance improvements in domain-specific tasks, boosting accuracy by up to 26% while preserving privacy.

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

- Worked on training-free LLM calibration approach by leveraging hidden states.

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

- Implemented a Transformer-based Domain-Adversarial Neural Network (DANN) to transfer knowledge from visual to olfactory EEG data for emotion classification.

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

- Chosen from 50 candidates nationwide.

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

- Chosen from 50 high-school students with talents nationwide.
- Engineered a robust palm liveness detection system and successfully blocking palm images displayed on screens.

## SELECTED PROJECTS

**Deep Reinforcement Learning: Insights from AlphaGo** Spring 2024
Team leader, advised by Prof. Dan Hu (**Scored 100**)

**Spectral vs. Fourier Neural Operators in Parametric PDE Modeling: Analysis and Experiments** Spring 2025
Individual project, advised by Prof. Lei Zhang (**Scored 100**)  [PDF] [code]

**Vertical Federated Learning Challenge** Spring 2024
Individual project, advised by Prof. Bingsheng He  [code]

**LENS: Learning Ensemble Confidence from Neural States for Multi-LLM Answer Integration** Autumn 2024
Individual project, advised by Prof. Xiaoqun Zhang (Scored 95)  [PDF]

## SELECTED AWARDS

*Click here to view all certificates*

## Contest Prizes

- **Gold Award** and **First Runner-up** in the National College Students' Career Planning Contest (Shanghai), Jan 2025
- 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

## Honors

- Zhiyuan **First-Class** Overseas Research Scholarship
- Merit Student of SJTU (twice)
- Academic Excellence Scholarship, SJTU (Top 10%, ranked 2nd overall)
- Zhiyuan Honors Scholarship (three times)

## SERVICES

Invited as reviewer: ICLR 2026, EMBC 2025, AI4MATH @ ICML 2025

## SKILLS

- Programming languages: Python, C/C++, Matlab.
- Language: Chinese (Native Speaker), English (Proficient, TOEFL 110, TOEFL MyBest Score 113).
- Expertise & Hobbies: Piano (Amateur Level 10), Singing (Amateur Level 9), Music Theory (Amateur Level 5).