Guangyi Liu

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Education

- **Zhejiang University(ZJU)** *Electronic Information · Master Candidate* 06/2023 – 03/2026
  - Research Focus: **GUI Automation Agents Powered by Large Language Models**
  - Honors: Excellent Graduate Student of Zhejiang University, Excellent Student Cadre of Zhejiang University

- **China University of Mining and Technology(CUMT)** *Automatic Control · Bachelor* 09/2019 – 06/2023
  - Overall Ranking: **No.1/203** GPA Ranking: 88.25/100 (No.13/203) CET-6: 484 (CET-4: 552) Exclusive Interview Link
  - Honors: 2020 and 2021 **National Scholarship**, Campus Person of the Year (8 students/year, university-wide)
  - Major Courses: Automatic Control(96), Python Programming(99), C++ Programming (97), Fundamentals of Artificial Intelligence (94), Engineering Mathematics (98),Intelligent Optimization and Control(94)

Selected Research Achievements

- **LLM-Powered GUI Agents in Phone Automation: Surveying Progress and Prospects** *First Author*
  - Under review at **IEEE Transactions on Pattern Analysis and Machine Intelligence(CCF-A)** | Link | 机器之心
  - **First comprehensive review of Phone GUI Agents(47 pages long paper)** , proposed a unified methodology covering frameworks, models, datasets and benchmarks, and provided forward-looking insights into challenges and future directions.

- **Dataset Distillation-based Hybrid Federated Learning on Non-IID Data** *Student Second Author*
  - Under review at **IEEE Transactions on Mobile Computing (CCF-A)** | Link
  - Addressed **heterogeneity in non-IID data** by proposing **HFLDD**. Experiments on **MNIST** and **CIFAR-10** showed significantly improved accuracy under most severe non-IID conditions, with up to **10-fold reduction in communication cost**.

- **HW/SW Co-design of FPGA Accelerator to Detect Anomaly Attacks in Smart Grids** *Student Second Author*
  - Accepted by **2024 IEEE 33rd International Symposium on Industrial Electronics(CAA-A)** | Link
  - Proposed an FPGA-based accelerator with an efficient hardware/software co-design to tackle latency and energy challenges of deep learning models for anomaly attack detection in smart grids.

- **Patent: SCADA Data Imputation Method, Device, Equipment, and Medium** *Student First Author* Link

- **Patent: A Miner Violation Warning System for Crossing Conveyor Belts** *First Inventor* Link

- **Patent: A Multifunctional Underground Safety Inspection System** *First Inventor* Link

- **Software Copyright: Miner Violation Alarm System Based on Skeletal Information** *First Contributor*

Internship Experience

- **vivo AI Lab** *PhoneGPT Pre-Research* *Advisor: Hongsheng Li & Liang Liu* 05/2024 – 01/2025
  - Built **few-shot learning** datasets and benchmarks for *Phone GUI Agents*, contributed to a **general online evaluation framework** for GUI Agents, and explored privacy-preserving methods based on federated learning.
  - Conducted UI Tree data cleaning, construct instruction dataset and performed LoRA-based supervised fine-tuning on general multimodal LLMs to enhance the **global planning capability** of GUI Agents. Relevant modules have been deployed in the vivo PhoneGPT **Coffee-Ordering Agent**, achieving a task completion rate of **90%+**.

- **TruthAI Company**   *Jinshu Nuclear Industry Large Model R&D*   01/2024 – 05/2024

  - Took charge of training 3 AI plug-ins related to *nuclear-industry feedback*, successfully deployed on the *Yunzhong Jinshu* platform for nuclear industry LLMs. Leveraged multi-label and multi-classification nuclear-industry data provided by *Ningde Nuclear Power* to **fine-tune BERT**, achieved an **F1-score of 0.96**.

- **Wolong Holding Group Co., Ltd.**   *Low-Code Algorithm Platform*   07/2023 – 09/2023

  - Developed custom operators in a low-code algorithm platform for data preprocessing, feature engineering, machine learning, and deep learning. Implemented online monitoring and remote diagnostics for industrial equipment.

Research Projects

- **University Outstanding Thesis**   *Reconfigurable Data Acquisition System*   09/2022 – 05/2023

  - Developed a **QT-based system reconfiguration application** and a **field configuration tool** (UART-HMI) and completed on-site deployment at Zhejiang Wuxing Electric Power Engineering Co., Ltd.

- **National Innovation Project**   *System for Diagnosing Miners Irregular Operations*   10/2020 – 05/2023

  - Developed hardware for **human behavior data collection**, performed rapid **data acquisition** and **feature engineering**, optimized human behavior recognation algorithms, and built a *miner-violation diagnostic system* in QT.
  - **Lead the team** applied for **3 invention patents, 4 utility model patents, and 7 software copyrights**. The project earned five provincial/ministerial honors, including the Jiangsu Provincial *Challenge Cup* second prize.

- **StarVision Company Project**   *Registration System for Line-Scan Remote Sensing Images*   11/2023 – 01/2024

  - Used **VHDL** to implement RTL for high-resolution remote sensing image processing, including image downsampling, **2D FFT**, 2D IFFT, and cross-power-spectrum calculation. Achieved a registration error of within 1 pixel.

Selected Honors & Awards

- **China International *Internet+* Innovation and Entrepreneurship Competition –Silver Medal**   01/2024
- **2023 *Huawei Cup* China Postgraduate Mathematical Contest in Modeling –Second Prize**   11/2023
- **2021 and 2022 Mathematical Contest in Modeling (USA) –Honorable Mention**   05/2021
- **17th National University Student Transportation Technology Competition –Second Prize**   07/2022
- **2021 *China Telecom Scholarship* · *Fly Young Award***   *1 student at the entire university*   06/2022
- **Jiangsu Province Outstanding Graduate**   *Top 20 in the university*   06/2023
- **13th *Challenge Cup* Entrepreneurship Plan Competition in Jiangsu –Silver Award**   05/2022
- **18th May Day Mathematical Modeling Contest –First Prize**   05/2021
- **5th *Youth May 4th Medal* of China University of Mining and Technology**   *10 students/year*   05/2022
- **Xiaomi Special Scholarship, China University of Mining and Technology**   *10 students/year*   09/2022
- **Outstanding Student CPC Member, China University of Mining and Technology**   06/2022

Personality Traits

- **Strong Sense of Collective Responsibility**: Served as Deputy Secretary (Student) of the University Youth League Committee, Head of Student Party Station, Chair Group Member of College Postgraduate Student Association, and Class Monitor. Awarded as **Jiangsu Province Outstanding Student Cadre**.

- **Excellent Communication Skills**: Delivered speeches multiple times as an **Excellent Student Representative** during award ceremonies and opening ceremonies.