

# Yichi Zhang

Hangzhou, China | [yichics02@gmail.com](mailto:yichics02@gmail.com) | tel: +86-138-8430-8849 | [yichics.github.io](https://yichics.github.io)

## Education

**Zhejiang University**, B.S. in Information Engineering Sept. 2021 – Now

- **GPA:** 3.92/4.0
- Minor in Computer Science and Technology.
- **Honor:** Third-class Scholarship, Zhejiang University;

## Research Experience

**Research Intern**, Zhejiang Lab & Zhejiang University July 2023 – Mar. 2024  
Advisor: Prof. Xiaogang Xu Hangzhou, China

- Focus on **AI-generated content detection**, particularly images from diffusion models and GANs.
- Leveraging the denoising characteristic of diffusion models to amplify high-frequency differences between generated and real images, we designed a novel classification feature that achieves SOTA results on four datasets with excellent generalization performance and much faster extraction speed.
- First author of a paper currently under review at IJCV.

**Research Intern**, NESA Lab, Zhejiang University July 2023 – Now  
Advisor: Prof. Shouling Ji Hangzhou, China

- Focus on **backdoor attack in horizontal federated learning**.
- Revisiting defense mechanisms, we revealed the relationship between the distribution of user data and the success rate of backdoor attacks, and establish a theoretical attack boundary for defenses.
- Third author and main code contributor of a paper currently under review at IEEE S&P 2025.

**Research Intern**, ALPS Lab, Stony Brook University July 2024 – Sept. 2024  
Advisor: Prof. Ting Wang New York, United States

- Focus on security issues in LLM applications, particularly **LLM jailbreaking** and **poisoning RAG system**.
- To exploring vulnerabilities in the safety alignment mechanism, we use adversarial suffixes generated through controllable decoding to fine-tune a jailbreak prompt generator, achieving efficient LLM jailbreaking.
- Analyzing the security vulnerabilities of Graph RAG, we utilize instruction injection attacks on the LLM used for graph index construction to manipulate the graph index and achieve knowledge poisoning.

## Publications

**Diffusion Noise Feature: Accurate and Fast Generated Image Detection**

*Yichi Zhang, Xiaogang Xu.*

**Revisiting Defense Mechanisms in FL: Effective and Efficient Backdoor Attack via Trigger Pre-optimization**

Xi Chen, Rui Zeng, *Yichi Zhang*, Chunyi Zhou, Yuwen Pu, Qingming Li, Lu Zhou, Zhe Liu, Shouling Ji.

## Project

**Dynamic 3D Point Cloud Compression Technology Based on Neural Implicit Representation**

*Undergraduate Graduation Project*, Advisor: Prof. Qianqian Yang

**Parallel Solving for Power-Ground Network Simulation Based on Machine Learning**

*Student Research Training Project*, Advisor: Prof. Cheng Zhuo

## Skill

**Languages:** English, Chinese

**Programming Skills:** Python, C, C++, MATLAB, LaTeX

**Operating Systems:** Basic proficiency in Linux, Windows, MacOS