

# Chengrui Fang

Personal Website: [RyanEth](#)

Linkedin: [Chengrui F.](#)

Github: [RyanFer](#)

Email: [fcrryan173@gmail.com](mailto:fcrryan173@gmail.com)

Interests: Generative AI, Blockchain

## EDUCATION BACKGROUND

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### • Zhejiang University

Hangzhou, China

*Bachelor of Engineering (Honors) in Information Security*

*Sep. 2020 – Expected Jun. 2024*

- **Turing Class**: First honors class [Chu Kochen Honors College](#)
- **Overall GPA: 3.92/4.00** Major GPA: 3.95/4.00
- **Ranking: 1/31 Top 2%**
- **Relevant Courses**: AI Security (96) System Security (96) Computer System I & II (96) Machine Learning (94)
- **Minor**: Intensive Training Honors Program of Innovation and Entrepreneurship (ITP) at [Chu Kochen Honors College](#) (Top 40/5400)

## PUBLICATION

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[1] Sarisht Wadhwa, **Chengrui Fang**, Luca Zanolini, Aditya Asgaonkar, Francesco D'Amato, Fan Zhang, Kartik Nayak: ***Data Independent Order Policy Enforcement: Limitations and Solutions***, in submission to USENIX Security' 24.

## RESEARCH EXPERIENCE

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### • Implementation and Evaluation of AnimaguSwap

Yale University, USA

*Research Assistant*

*Jun. 2023 - Oct. 2023*

*Advisor: Prof. [Fan Zhang](#), Assistant Professor at Yale University*

- Collaborated with faculties from Duke University and advisors from ETH Foundation. Leveraged **Typescript**, **Solidity** and **Ethers.js** to independently implement AnimaguSwap, a protocol designed to counteract sandwich attacks by splitting transaction information and building distrust between parties using rational binding, on a forked Ethereum blockchain based on the **Hardhat** framework.
- Experimented, detected and evaluated the gas fee performance. Overhauled the whole system and complex data structures by employing BytesUtils library. Successfully reduced overall gas fees from 5x to **2.3x** of the baseline, striking a favorable balance between performance and defense.

### • A Method of Constructing Non-fungible Tokens from Physical Artworks

Hangzhou, China

*Research Assistant*

*Jun. 2022 - Jan. 2023*

*Advisor: Prof. [Bingsheng Zhang](#), ZJU100 Professor at Zhejiang University*

- Utilized the **SIFT algorithm**, **Gabor filter**, **Fuzzy extractor** and **Solidity** to construct a system for precise feature extraction from artworks, blockchain-based storage as Non-fungible Tokens and verification. Our extraction approach achieved higher accuracy, stable at around **95%** compared to previous state-of-the-art methods.

## INDUSTRIAL EXPERIENCE

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### • Prompts Lab [\[Github\]](#)

Hangzhou, China

*Founder*

*Jun. 2023 - Present*

*Advisor: Prof. [Junbo Zhao](#), director of the Turing Class, serial entrepreneur, over 16,000 citations*

- **Prompts Lego**: Led team to launch 'Prompts Lego', **a gamified prompt writing tool that assists users in crafting high-quality prompts as easy as assembling lego pieces**. Designed the front-end interaction, deployed **CRA** framework to develop it independently and integrated ChatGPT API to our back-end in a 24-hour hackathon. Secured the **highest prize** among 32 teams, being the only undergraduate team.
- Leveraged the **Vite** framework to reconstruct it. Optimized **CDN and CSS styles** to improve front-end response and rendering speeds. Launched an alpha test that successfully attracted over **1000** users. Won the **championship** at the 2023 National University Student Hackathon. Accumulated total \$5,000 in prize.
- **AI-Powered 'Who is the spy'**: Adapted Chinese party games 'Who is the spy' by integrating AI to generate game words that players can learn while playing. Built the front-end interaction design using **Next.js**. Developed an algorithm with ChatGPT API to generate well-playing entertaining game words within **48 hours**. Won the Alibaba YunXi Conference 2023 Hackathon the Best Zero to One Award(**1/18**), being only undergraduate team.

- **PLANET** [\[Github\]](#)

Founder

Hangzhou, China

Sep. 2022 - May. 2023

- Led team to launch PLANET, a digital copilot on the desktop like dynamic wallpapers. Employed gamified design to motivate users to learn. Completed product design, utilized the **Moralis** framework to develop the game assets in **Unity**, and integrate them with blockchain in **Solidity**. Developed a desktop launcher and intercepted mouse events to enable interaction like desktop wallpaper.
- Secured 1st prize in Tsinghua Blockchain Hackathon Metaverse Track and Alibaba's Ant Chain Hackathon (1/100+), plus a \$10k Alibaba cloud sponsorship at BNB Chain Hackathon. Accumulated a total of \$5,000 in prize money. Invited as a guest speaker at the Alibaba Yunxi Conference 2022.

- **NFTGo** [\[Website\]](#)

Intern

Hangzhou, China

Mar. 2022 - Sep. 2022

- Gathered users' requirements and issues and solve users' problems with solid debugging technique. Designed and deployed **React** to implement a Twitter plugin that reads user avatars and utilizes our API to locate corresponding crypto wallets on the blockchain, displaying the digital assets.
- Independently developed Python scripts for tracking new NFT projects, cataloging over 500 projects, and created a dashboard for data visualization, aiding the investment team in decision-making.

## ACADEMIC CONTEST

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- **Privacy-Preserving Lending Credit Security Assessment System**

Team Leader

Hangzhou, China

Apr. 2021 - Jun. 2021

Advisor: Prof. [Bingsheng Zhang](#), ZJU100 Professor at Zhejiang University

- Led a team to deploy **C++ and Python** to build a privacy-preserving lending credit assessment system using **multiparty computation algorithms** based on **decision trees and semi-trusted hardware** in the National University Information Security Competition. Achieved a **usable but invisible** effect to protect user's privacy.

## LEADERSHIP AND DIVERSITY

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- **ZJU Blockchain Association** [\[Twitter\]](#)[\[Linkedin\]](#)

President

Hangzhou, China

Jul. 2023 - Present

- Led the association in organizing the ETH Hangzhou Hackathon, Crypto VC Course... securing **\$30,000** in sponsorship from notable entities like ETH Foundation, Scroll, Mask Network... Accelerated community growth, exceeding **1,000** members and engaging over 5,000 participants. Increased our Twitter followers **10x**, from 100 to 1,000, boosting our international impact.

- **Influencer and Creator** [\[Bilibili\]](#)

- Established a personal channel on Bilibili (Chinese Youtube) and GitHub, sharing insights into cutting-edge technology, entrepreneurship, career planning, and study. Achieved **800,000** video views and **22,000** followers. Developed an AI knowledge document and blogs with over **300,000** total reads. Invited by Chinese well-known tech media to share about AI, and the relevant articles have reached **50,000** views.

- **Hackathon Hunter**: Participated in over 10 hackathons, including international events like ETH NYC, ETH Online, ETH Hangzhou, ETH HK... building over ten amazing projects and accumulating over **\$50,000** in prize money.
- **Artist**: Hip-hop lover, member of school's hip-hop club, member of campus streetwear brand called 'BUER', a name derived from a lyric in our school's anthem that signifies 'dialectical unity relationship' in Chinese.
- **Basketball Player**: Engaged in basketball since childhood, playing as the point guard for my college basketball team.
- **Volunteer Tutor**: Collaborated with students from China's top four universities to participate in a teaching volunteer program at a primary school in Jiuquan, China. Photographed, produced documentaries, and taught film appreciation classes. Recognized as an **Outstanding Team** in Zhejiang University 2021 (Top 10).

## AWARDS AND HONORS

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First-Class Scholarship for Outstanding Students (2% Students Awarded), ZJU

Oct. 2023/2022/2021

Top 10 Outstanding Students in the College of Computer Science & Technology (10/1500), ZJU

Jun. 2023

Zhejiang Provincial Government Scholarship (3% Students Awarded), ZJU

Oct. 2023/2022

Top 10 Outstanding Students in the College of Engineering YunFeng(10/1500), ZJU

Jun. 2021