

# Zhe YE

zhey@berkeley.edu | +1 (510) 977-3542 | GitHub: LEAFERx  
https://www.linkedin.com/in/zheye

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## RESEARCH INTEREST

Scalability and security of decentralized systems and applications.

## EDUCATION

**University of California, Berkeley, EECS Department**  
*Ph.D. Student, Computer Science* Advisor: Prof. Dawn Song

Berkeley, CA  
2022 – Expected 2027

**ShanghaiTech University, School of Information Science and Technology**  
*Bachelor of Engineering, Computer Science and Technology*

Shanghai, China  
2018 – 2022

**University of California, Berkeley, EECS Department**  
*Undergraduate Extension Student, GLOBE Program, Computer Science*

Berkeley, CA  
Aug., 2021 – May, 2022

## HONORS AND AWARDS

UC Berkeley EECS Departmental Fellowship

2022

Undergraduate Scholarship in ShanghaiTech University

2019

## PUBLICATIONS

1. **Ye, Z.\***, Misra, U.\*, and Song, D. (2023). Specular: Towards Secure, Trust-minimized Optimistic Blockchain Execution. *To appear in 45th IEEE Symposium on Security and Privacy.*
2. Qin, K.\*, **Ye, Z.\***, Wang, Z., Li, W., Zhou, L., Zhang, C., Song, D., and Gervais, A. (2023). Towards Automated Security Analysis of Smart Contracts based on Execution Property Graph. *In submission.*

## SELECTED PROJECTS

### **Specular**

2022 – Present

- Specular is an L2 system designed to scale Ethereum securely, with minimal additional trust assumptions. It is an EVM-native optimistic rollup, relying on existing Ethereum infrastructure both to bootstrap protocol security and to enable native compatibility for all existing Ethereum applications & tooling.
- I worked on fraud proof protocol design, bridging protocol design, rollup architecture design, and implementation and deployment of both L1 contracts and L2 nodes with peripheral services like the bridging application.

### **Clue**

2023

- Clue is a versatile dynamic analysis framework specifically designed for the Ethereum Virtual Machine (EVM). This comprehensive framework focuses on tracking contract executions, capturing valuable runtime information, while introducing and employing the Execution Property Graph (EPG) to propose a unique graph traversal technique that swiftly detects potential smart contract attacks.
- I worked on execution property graph model design and implementation, traversal (i.e. attack detection) design and implementation, and evaluation.

## TEACHING EXPERIENCE

### **ShanghaiTech University**

- **CS110 Computer Architecture I** *Teaching Assistant* March, 2021 – June, 2021
- **ARTS1303 Unity Game Development** *Teaching Assistant* July, 2020 – Aug., 2020
- **SI100B Introduction to Information Science and Technology** *Teaching Assistant* March, 2020 – June, 2020

## MISCELLANEOUS

**Language:** Chinese(Native), English(Fluent); CET-6, TOEFL: 105