

EDUCATION

Lanzhou University

• *Expected Ph.D. in Computer Science*

Lanzhou, China

2018 - 2026 (expected)

Lanzhou University

• *Bachelor of Computer Science*

Lanzhou, China

2013 - 2017

RESEARCH INTERESTS

Open-source license compliance, software supply chain security, program analysis, vulnerability detection, IoT security, and trustworthy software engineering

PUBLICATIONS

Conference Papers

[C1] *LiScopeLens: An Open-Source License Incompatibility Analysis Tool Based on Scope Representation of License Terms.*

Ziang Liu, X Liu, Y Zhang, Z Zhang, S Li, W Niu, Q Zhou, R Zhou, X Zhou

In 2024 IEEE 35th International Symposium on Software Reliability Engineering (ISSRE).

[C2] *ISGraphVD: Precise Vulnerability Detection for IoT Supply Chains Based on Identifier Sensitive Graph.*

Y Zhang, X Liu, Ziang Liu, S Li, N Li, W Niu, R Zhou, Q Zhou

In 2025 IEEE 36th International Symposium on Software Reliability Engineering (ISSRE).

Journal Papers

[J1] *Towards a Comprehensive Framework for Verifying Open-Source Software License Compatibility.*

Ziang Liu, X Liu, Y Zhang, S Li, W Niu, Q Zhou, R Zhou, X Zhou

Empirical Software Engineering.

[J2] *TCN enhanced novel malicious traffic detection for IoT devices.*

X Liu, Ziang Liu, Y Zhang, W Zhang, D Lv, Q Zhou

Connection Science.

[J3] *Design and Implementation of a Blockchain-based Medical Data Abuse Monitoring Platform.*

Ziang Liu, Y Huang, J Ma, R Zhou

Information Network Security.

[J4] *IoTGuardEye: A Web Attack Detection Method for IoT Services.*

X Liu, J Ma, Ziang Liu, R Zhou

Computer Science.

[J5] *A Survey of Vulnerability Detection Methods for Ethereum Solidity Smart Contracts.*

Y Zhang, J Ma, Ziang Liu, X Liu, R Zhou

Computer Science.

PATENT

[P1] *A Cross-Language, Multi-Scenario Open-Source License Compatibility Detection System.*

Chinese invention patent, CN119293757B, granted on 2025-05-13.

RESEARCH PROJECTS

- [1] Open-Source License Compatibility Detection Technology. Huawei Technologies Co., Ltd.; student lead; Dec. 2024 - Dec. 2025; completed; technology transfer achieved.
- [2] Research and Application of Digital Twin Technology for Auxiliary Decision-Making in New Energy Cluster Dispatch. State Grid science and technology project; student lead; 2020 - 2023; completed.
- [3] Research on the Application of XXXXXXXXX Technology for Informatization. "Huiyan Action" innovation outcome transfer and application project; participant; Mar. 2023 - Dec. 2024; completed.
- [4] Construction of a QoS Testing Platform for Network Equipment in the Dispatching Data Network of the Regional Control Sub-center. State Grid North China Branch; student lead; Mar. 2020 - Sep. 2021; completed.
- [5] Research on an AI-based Intelligent Monitoring Method for Malicious Attacks on Critical Service APIs. State Grid North China Branch; student lead; May 2022 - Sep. 2024; completed.
- [6] "Yongzin" Search Engine Architecture Iteration Project. Tibetan Information Technology Research Center of Hainan Tibetan Autonomous Prefecture; participant; Dec. 2023 - Sep. 2025; completed.
- [7] Collaborative Research on Key Technologies for Trustworthy Mixed-Source Software Component Analysis. National Key R&D Program of China (2024YFE0203800); 2024 - 2027; ongoing.

OPEN-SOURCE IMPACT & HONORS

- [1] *LiScopeLens: An Open-Source License Incompatibility Analysis Tool Based on Scope Representation of License Terms*. **ISSRE 2024 Best Paper Runner Up Reward**.
- [2] Application certificate for open-source license compatibility analysis technology (application unit: OpenAtom Foundation - OpenHarmony Community).
- [3] OpenHarmony Outstanding Contribution Team Award.
- [4] 2024 OpenHarmony Community Individual Contribution Award for Security Governance.
- [5] 2025 OpenHarmony Star of Compliance Contribution Award.

SELECTED SYSTEMS / TOOLS / OPEN-SOURCE OUTPUTS

Paper: "LiScopeLens: An Open-Source License Incompatibility Analysis Tool Based on Scope Representation of License Terms"

Repository: https://gitcode.com/openharmony-sig/compliance_license_compatibility

Developed LiScopeLens, an open-source license incompatibility analysis tool. Identified and validated multiple license-compliance conflicts on the OpenHarmony main branch, driving the adoption of upstream fixes.

Paper: "Towards a Comprehensive Framework for Verifying Open-Source Software License Compatibility"

Patent: "A Cross-Language, Multi-Scenario Open-Source License Compatibility Detection System" (granted)

Project: Open-Source License Compatibility Detection Technology (Huawei Technologies Co., Ltd.)

Led end-to-end development as student lead — from research and patenting to industrial deployment — delivering a cross-language, multi-scenario license compatibility detection system with successful technology transfer to Huawei.