

# Zeyu Lei

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## PROFILE

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6 years of experience in Security Research and Backend Software Engineering. Passionate about problem solving using first principles. Built and scaled an AI product from 0 to 20,000+ active users. Share AI technology insights and data analysis on X (formerly Twitter) with 7,500+ followers. First author of 2 research papers published in top-tier computer science conferences.

## EDUCATION

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**Purdue University – West Lafayette, IN**  
Ph.D. in Computer Science

**Aug 2019 – May 2025**

**University of Iowa – Iowa City, IA**  
BA in Computer Science

**Aug 2015 – Aug 2019**

## PUBLICATIONS

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**ScopeVerif: Analyzing the Security of Android's Scoped Storage via Differential Analysis**

Zeyu Lei, Güliz Seray Tuncay, Beatrice Carissa Williem, Z. Berkay Celik, and Antonio Bianchi

Proceedings of the Network and Distributed System Security Symposium (NDSS), 2025

**On the Insecurity of SMS One-Time Password Messages against Local Attackers in Modern Mobile Devices**

Zeyu Lei, Yuhong Nan, Yanick Fratantonio, and Antonio Bianchi

Proceedings of the Network and Distributed System Security Symposium (NDSS), 2021

## PROFESSIONAL EXPERIENCE

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**Purdue University - Graduate Research Assistant**

**Aug 2019 - Present**

- Developed a scalable, cloud-based static analysis framework for millions of apps, identifying critical security vulnerabilities in SMS authentication for popular apps such as Telegram and KakaoTalk, affecting over 133 million installations
- Developed an automated tool verifying scoped storage implementation on the latest Android, discovering 10 previously unknown issues, including high-severity vulnerabilities and earning a \$7,000 bug bounty from Google.
- Collaborated with Apple to validate the implementation of mDL in Apple Wallet, leveraging LLM technology to identify two vulnerabilities, assist in their resolution, and enhance usability for millions of users across six states.
- Contributed to the PurSec lab's collaboration with Google, earning the Google ASPIRE Award for three consecutive years. and delivered a talk on "Security Analysis of Three Emerging Pieces of Android OS" to the ASPIRE team at Google.

**Trasen Science & Technology Ltd. - Software Engineer**

**Aug 2020 - Aug 2021**

- Discovered a critical vulnerability in the internal employee system that allowed unauthorized password resets for over 1,000 employees, preventing potential leaks of company trade secrets and prompting a comprehensive security protocol redesign.
- Developed a security framework by encapsulating security-related algorithms, protocols, and critical business workflows, safeguarding core operations and boosting development efficiency across multiple departments.
- Led an R&D team to develop a no-code microservices platform that generated efficient, multi-language backend code from standardized flowchart designs, collaborating with multiple departments on internal deployment and product iterations.
- Collaborated with the investment department as a technical consultant, providing key technical insights that enabled more strategic and advantageous negotiations for an international acquisition.

## PROJECTS

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- **AI Video Summarization** | Developed and maintaining an video summarization application with 20,000+ active users in [Chrome Web Store](#), [Edge Add-ons Store](#), and [web app](#)
- **Data Analysis on AI Technologies** | Share data analyses of AI technologies on [X \(formerly Twitter\)](#), achieving over 5M impressions in the last three months and engaging with an audience of 7,500+ followers

## SKILLS

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- **Expertise:** Large-scale App analysis, Formal Verification, Differential Analysis, Reverse Engineering
- **Programming Languages:** Python, Java, Kotlin, C/C++, JavaScript, HTML
- **Tools:** Ghidra, Xposed, Frida, GDB, ProVerif
- **Other:** Data Analysis, Prompt Engineering, Software Engineering