

# Zeyu Lei

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## PROFILE

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6 years of experience in Security Research and Mobile Systems Analysis, specializing in both static and dynamic analysis of apps and operating systems. Expertise in automated vulnerability detection, security framework development, and collaboration with major tech companies (Apple, Google). Strong track record in identifying and reporting critical security issues across popular mobile applications and systems.

## 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

## RESEARCH EXPERIENCE

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### **Purdue University - Graduate Research Assistant**

**Aug 2019 - Present**

- Developed a cloud-based testing framework to automate the static analysis of millions of apps, identifying critical security vulnerabilities in SMS authentication for popular apps such as Telegram and KakaoTalk, affecting over 133 million installations
- Worked with Google to develop an automated tool that verifies scoped storage implementation on the latest Android, deployed on billions of devices worldwide, identifying "high-severity" vulnerabilities and earning a \$7,000 bug bounty offer
- Collaborated with Apple to validate the implementation of the mobile driving license in Apple Wallet, identifying and reporting two potential issues and assisting in their resolution, enhancing 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 Android Security and Privacy Research (ASPIRE) team at Google.

## PROJECTS

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- **AI Startup in Video Summarization** | Co-founder of AI startup in Shanghai, developed and maintaining an video summarization application “AI课代表” with ~20,000 active users in [Chrome Web Store](#), [Edge Add-ons Store](#), and [web app](#)
- **Data Analysis on Self-driving Technologies** | Utilizing large language models to conduct automated trend and sentiment analyses of self-driving technologies on [X \(formerly Twitter\)](#), achieving over 5M impressions in the last three months and engaging with an audience of approximately 7,000 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