

# Joshua Shinkle

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## INTERESTS

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I work in Software & Systems S&P. Specifically, I am interested in discovering vulnerabilities in mobile devices. My current research focuses on Android phones.

## EDUCATION

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- **Ph.D. in Computer Science advised by Antonio Bianchi**
  - Purdue University, *August '24 - May '29 (expected)*
- **B.S. in Computer Science - Cybersecurity**
  - Taylor University, *August '20 - May '24*

## EXPERIENCE

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### **Purdue University - Graduate Research Assistant - PurSec Lab** *August '24 - Present*

- Developing a side-channel for the Edge TPU on Android phones
- Android app analysis
- Android OS reverse engineering
- Frida, GDB, strace, Perfetto UI

### **Peraton Labs - Cybersecurity Research Internship** *Summer '25*

- Built an Android utility that leverages kernel tracing and interprocess communication introspection to trace messages between apps, telephony, Radio Interface Layer (RIL), and baseband firmware
- Frida, strace, eBPF

### **Peraton Labs - Cybersecurity Research Internship** *Summer '24*

- Trained a multitask deep learning recommender system to predict mobile app usage based on user demographics
- Worked as part of a team to repurpose mobile phone communication channels to enable secure communications
- TensorFlow, Keras

### **Peraton Labs - Cybersecurity Research Internship** *Summer '23*

- Built a python tool to schedule/generate Android automations to mimic human activity
- Worked as part of a team to repurpose mobile phone communication channels to enable secure communications
- AndroidViewClient

### **Lockheed Martin ATL - Cybersecurity Research Internship** *Summer '22*

- Reverse engineered Windows applications
- Windows kernel debugging
- IDA Pro, WinDbg, Fiddler