

ALIREZA KARIMI

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RESEARCH INTEREST

Software and System Security
Malware Analysis
Binary Analysis and Reverse Engineering
Fuzzing

EDUCATION

Arizona State University, Tempe, AZ January 2023, now
PHD in CyberSecurity , Funded by Sefcom , **GPA 4.0 / 4.0**

University of Genova, Genova, IT September 2019 , October 2022
Master of Computer Science (Software Security), **GPA 108/110**

Azad University Shahrood, IR January 2013 , September 2016
Master of Software engineering

Sadjad Institute of Technology, Mashhad, IR September 2009 , September 2012
Bachelor of Software engineering

PROFESSIONAL EXPERIENCE

Sefcom, Tempe, AZ January 2023 – Now
CyberSecurity Research Assistant

- Undertook research in software and system security, guided by Dr. Fish Wang and Dr. Yan Shoshitaishvili.
- Research Specialized in Linux kernel , driver, fuzzing, and system security.
- Competed in CTF challenges as part of the Shellphish team.

DeltaTre, Turino, IT September 2022 – December 2022
Software Engineer

- Development of an android industry-leading video streaming application , working closely with a cross-functional team to ensure optimal functionality and user experience.
- Regularly reviewed and verified the accuracy of analytic reports, ensuring user experience.
- Took on the responsibility of maintaining the custom video player library, addressing both minor and major bugs.

TSIT, Mashhad, IR March 2016 – September 2019
Android Engineer

- Designed and maintained a high-performance MQTT-based Android messenger , ensuring fast and reliable communication across web, mobile, and desktop platforms achieved 99.9% up-time.
- Implemented End-to-End encryption solution for messaging platform , ensuring secure communication and protecting user privacy.
- Identified and resolved complex technical issues through code reviews and refactored legacy code resulting in improved stability and performance to 99% crash free.

SELECTED PUBLICATION

Karimi, Alireza, and Mohammad Hosein Moattar. "Android ransomware detection using reduced opcode sequence and image similarity." 2017 7th International Conference on Computer and Knowledge Engineering(**ICCKE**). IEEE, April 2017.

Karimi, Alireza , and Giovanni Lagorio “ A survey of heap-exploitation techniques”. Master Thesis at the **University Of Genova** , October 2021.

SELECTED PROJECT

Gap Messenger

- Developed an android cloud base IM application using the MQTT protocol for enhanced communication.
- Research and implemented End-to-End encryption solution for messaging platform , ensuring secure communication and protecting user privacy.
- Working with android components like sensors and google play service.

Disassembler

- A simple experimental disassembler by the help of capstone and Ptrace.

Toppler Patch

- A sample code for pwn This repository is a Sample code for pwn tools The repository contains some cheat for the old toppler game.

Indoor Tracker

- Designed a tracking system using Node.js, MQTT, and React.js to monitor individuals in a building via Bluetooth tokens during COVID restrictions.
- Each room's scanner reports user movements to the server, which then evaluates occupancy levels and triggers alarms for overcrowded spaces.
- Developed a monitoring panel using React.js to visualize and manage room statistics

Capstone

- Constructed the platform using Node.js, MongoDB, and Angular to support local sales, enabling sellers to list items and buyers to make purchases.
- System architecture comprises two main components: a backend driven by Node.js and MongoDB, and a frontend crafted with AngularJS.
- Integrated Nginx for reverse proxy and web server capabilities, ensuring efficient request handling and SSL management.

SKILLS

- **Programming Language**
 - C, C++, Python, Java, Javascript, Kotlin, Assembly
- **Tools**
 - IntelPin, Frida, Pwntools , Ghidra, IDA, GDB, Apktools, AFL++, NYX, Snapchange ,ZAP, Wireshark
- **Other**
 - Nodejs, ReactJs, Ngnix, MongoDB, SQL, Bash, GDB Api, Linux, git
- **Knowledge**
 - Forensic , Cryptography , ML, Instrumentation , Static analysis, Reverse Engineering, Fuzzing, Linux Drivers , Malware Analysis, Android app Analysis, Debugging, Linux Kernel

ACTIVITIES
