

Jasper Rühl

24.07.1998

jasperruehl@protonmail.com
github.com/haxkor
linkedin.com/in/jasper-rühl-2650261b9/

EXPERIENCE

Working Student

May 2023 - Oct 2023

Guardsquare

- prototyped dependency detection feature for iOS AppSweep Python, C++
- + statically linked libraries are successfully detected
- + each symbol of the iOS app is matched to its origin (native or external library)
- + repository of libraries is automatically built and necessary information is extracted
- + feature will be deployed to AppSweep

Working Student

Mar 2022 - April 2023

Controlware

- DevOps for SOC teams *TheHive* Infrastructure, creating various tools Python
- + Incident importers for several XDR platforms (MS Defender/Azure, SentinelOne, Cortex XDR)
- + IntelCaching that periodically parses info Wikipage for the AutoSOC/MailTextGenerator
- + MailTextGenerator that uses easily editable text templates and fills them with incident info
- + AutoSOC that automatically resolves trivial MS Defender incidents
- + introduced function decorator to make our python programs significantly more fault resilient
- + created Jupyter Notebook for visualizing summaries presented to customers

Research Assistant

Jan 2021 - Dec 2021

Fraunhofer AISEC

- aided in development of an LLVM based MemSafety tool C++, Python
- developed PoC's for anti-ControlFlowIntegrity exploitation techniques (DOP, COOP, LOP)

Student Tutor

WS21-22 / WS22-23

Chair of IT Security

- hosted weekly tutorials on the IT Security lecture
- + presented and taught students about the fundamentals of IT Security
- + classes ranged from 5-25 students

PROJECTS

Congestion Control for Application Flows on Shared QUIC connections Master Thesis

in progress

- explore methods to enable lower latency for realtime communication Go
- + add a stream prioritization mechanism to quic-go
- + bitrates of stream classes are measured and adapted in realtime

Risotto: A DBT for Weak Memory Models Guided Research

published at ACM ASPLOS 2023

- improved emulation of x86 `cmpxchg` instruction on ARM architectures c
- + introduced a new CAS instruction for QEMUs TCG
- + appropriate ARM instruction is generated
- + dl.acm.org/doi/10.1145/3567955.3567962

Raspberry Pi VPN Endpoint Interdisciplinary Project

SS23

Gürtler & Roach Cybersecurity

- developed program to setup Raspberry Pi microcomputers
- + Pi's are a tailscale exit node
- + Access Control List ensures no outgoing connections from the Pi
- + *Ansible* is used to automatically setup the Pi

Forkever Bachelor Thesis

SS20

- GDB-like debugger for binary exploitation Python, C
- + create copies of program-state by injecting `fork` system calls
- + memory can be visualised and manipulated with a hexeditor
- + Forkever is used by the students of the binary exploitation lab course
- + github.com/haxkor/forkever

EDUCATION

MSc. Informatics <i>Technical University Munich</i> focus on security and computer architecture	2021 - 2024
BSc. Informatics <i>Technical University Munich</i> Minor: Mathematics Grade: 2.2	2016 - 2020
BSc. Computer Science - Exchange Semester <i>Malaysia Multimedia University, Cyberjaya</i>	2018 - 2019

SKILLS

<i>Programming Languages</i> <i>Technologies</i> <i>Languages</i>	Python, Go, C, C++, Bash, Java, R git, Linux, Docker, QEMU, Ansible German, English, Malay (basic)
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PERSONAL

MINGA Mentor for two international students at TUM	2017 - 2020
English tutor Assisted in teaching pupils	2013 - 2015