

András Gémes

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Summary

Embedded software engineer with 6 years of experience and a deep interest in cybersecurity, specifically in malware analysis. Certified in [Sec+](#), [CEH](#), [IMBT](#) and [PMAT](#) with [hands-on experience](#) in malware reverse engineering. Looking to apply my technical expertise and security skills in a focused malware analyst role.

Work experience

Rust Embedded Software Engineer

Feb 2023 – Present

HighTec EDV-Systeme GmbH - Budapest, Hungary

- Developing Rust and assembly tests for the Rust compiler, contributing to its ISO 26262 qualification process
- Implementing inline assembly features in the Rust compiler frontend
- Hardening the toolchain binaries against reverse engineering
- Creating customer-facing C and Rust examples for real-time operating system (RTOS) and bare-metal environments

Embedded Software Engineer

May 2018 – Jan 2023

Knorr-Bremse - Budapest, Hungary

- Integrated Advanced Driver Assistance Systems (ADAS) software across various Electronic Control Units (ECUs)
- Configured, automated and evaluated Static Application Security Testing (SAST) using PC-lint and Clang-Tidy tools
- Debugged and analyzed software issues at the assembly level
- Configured memory, real-time operating system (RTOS) and Controller Area Network (CAN) software modules

Skills

Languages: C, Rust, Python 3, Assembly (AMD64/x86-64, ARM64/AArch64), Bash

Malware analysis (static): Ghidra, IDA, capa, YARA, DIE, dnSpy, readelf, objdump

Malware analysis (dynamic): x64dbg, VirtualBox, Wireshark, Sysinternals, Regshot, Frida, GDB, eBPF, strace

Platforms and DevOps tools: Linux (Fedora, Ubuntu), Windows, Git, Docker, GitHub Actions, Jenkins

Embedded systems and protocols: STM32, ESP32, AURIX, Wi-Fi, CAN, SPI, UART, I2C

Certifications

Fundamental cybersecurity: [CompTIA Security+](#), [EC-Council CEH](#)

Malware analysis: [Invoke RE IMBT](#), [TCM Security PMAT](#)

Relevant projects

- [Ghidra](#): a custom Ghidra build with enhanced features, with contributions also submitted to [upstream](#)
- [shadow-shell](#): a cyber lab for shellcode analysis, built in Assembly and C
- [sys-stalker](#): eBPF tools in Rust and Python for dynamically analyzing malware

Education

MSc in Mechatronics Engineering

Feb 2016 – June 2018

Budapest University of Technology and Economics - Budapest, Hungary

- Master's thesis: Design and development of a solar energy utilization system

BSc in Mechatronics Engineering

Sept 2012 – Jan 2016

University of Pannonia - Veszprém, Hungary

- Thesis: Design and development of a multicopter-carried river sampling device