

# András Gémes

[shadowshell.io](https://shadowshell.io) [github.com/gemesa](https://github.com/gemesa) [linkedin.com/gemesa](https://www.linkedin.com/company/gemesa) [gemesa@protonmail.com](mailto:gemesa@protonmail.com)

## Summary

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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

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### 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

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**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

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

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

## Relevant projects

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- [Ghidra](#): contributing bug reports and patches 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

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### 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