Dimitrios Karnikis

dkarnik.is

Profile

Senior embedded developer with experience in production tooling, automated testing, certification support, and MCU driver development. Skilled in developing maintainable firmware with a focus on Bluetooth integration and system security.

Work Experience

Bang & Olufsen A/S **Kongens Lyngby, Denmark**
Senior Embedded Software Developer *December 2024 – Present*

- Improving firmware quality and production tooling for market-ready products.
- Supporting production-line testing for PCBAs and final assemblies.
- Leading Google Cast and Apple AirPlay certification processes.
- Developing tools, scripts, and documentation to streamline production workflows.
- Writing Zephyr OS drivers and utilities.

Bang & Olufsen A/S **Kongens Lyngby, Denmark**
Embedded Software Developer *October 2022 – November 2024*

- Developed robust Bluetooth firmware ensuring reliable device connectivity.
- Designed and implemented BLE protocols using Protobuf and GATT for remote control applications.
- Created low-level peripheral drivers for Zephyr OS.
- Developed standalone D-Bus services enabling remote SSH control and system recovery.
- Automated build and testing workflows using CMake and shell scripting.

Aarno Labs **Remote, US**
Freelance Software Engineer, TEE's, High-level Languages, CI/CD *February 2021 – April 2022*

- Developed security applications embedded based on Trusted Execution Environments (TEE).
- Provided a secure subset of instructions for high-level runtimes (QuickJS, Lua).
- Designed offloading techniques for low-end IoT devices.
- Developed automation scripts for PaSh's CI/CD infrastructure.

DiSCS Laboratory, FORTH-ICS **Heraklion, Greece**
Postgraduate Research Fellow, Intel SGX, Arm TrustZone *February 2019 – February 2021*

- Enhanced Lua language runtimes with TEE capabilities (Intel SGX).
- Introduced memory and type-safe operations for TEE applications.
- Offered high-level bindings to the underlying TEE native calls.
- Addressed challenges imposed by TEEs, including code signing, application re-compilation, manual re-partitioning, and dynamic module loading.

DiSCS Laboratory, FORTH-ICS **Heraklion, Greece**
Undergraduate Research Fellow, Intel SGX, Android *November 2016 – February 2019*

- Ported Intel SGX framework to the x86 port of Android.
- Enhanced Android Keystore and Secure Device Pairing with Intel SGX capabilities.
- Offered an embeddable API for integrating Intel SGX into programs.
- Provided a fully working toolchain cross-compiler compliant with Android and Intel SGX.

Education

University of Crete, Greece
Master of Science (MSc) in Computer Science *February 2019 – February 2021*

University of Crete, Greece
Bachelor of Science (BSc) in Computer Science *September 2013 – November 2018*

Advanced Technical Skills

- **Programming Languages:** C, C++, Lua, JavaScript, Python, Java
- **Development Tools:** Git, Docker, GitHub Actions, Protobuf, Yocto, D-Bus, CMake, Bash, Unix Tools, GDB, Latex, Qemu, Wireshark, Love2D
- **Systems:** Linux, Zephyr OS, Embedded Devices, Android AOSP
- **Other:** Bluetooth, GATT, Intel SGX, Arm TrustZone