ERIC SEALS

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Professional Experience

Guardsquare   Leuven, Belgium
Compiler Software Engineer   *May 2024 – Present*

- Developed and enhanced machine-code–level obfuscation techniques for iOS applications, contributing to iXGuard, a comprehensive mobile app protection solution
- Implemented new LLVM-based code transformations and optimizations to improve resilience against reverse engineering while maintaining performance and correctness
- Researched, prototyped, and productionized advanced obfuscation and compilation techniques using LLVM internals and compiler pipelines
- Debugged complex issues across the LLVM toolchain and generated machine code, providing fixes and technical support for client-reported problems
- Worked extensively with x86_64 and ARMv8 architectures, ensuring correctness and robustness of low-level transformations across platforms
- Wrote maintainable, high-performance C++ code, balancing algorithmic efficiency with clarity for long-term maintainability

GARMIN   Olathe, USA
Software Engineer   *Jul 2022 – Oct 2023*

- Developed advanced features in C++ for Garmin Dezl, including a high-performance weather map overlay utilizing OpenGL, enhancing real-time data visualization and user interaction
- Coordinated with a cross-functional team to enhance the weather map overlay, implementing a dynamic data querying approach that adjusted for zoom/grid size, significantly reducing data size requirements and improving application performance
- Engineered performant application code for Yocto-based embedded platforms, optimizing system-level performance and demonstrating a deep understanding of hardware-software integration
- Owned feature development, conducted code reviews, and managed weekly release builds to ensure high-quality deliverables
- Collaborated seamlessly with Project Managers, UX Designers, Hardware Engineers, and cross-functional Software Engineers

KU School of Engineering   Lawrence, USA
Graduate Teaching Assistant   *Aug 2020 – Dec 2021*

Teaching: Explained technical topics related to embedded systems and real time applications

GARMIN   Olathe, USA
Software Engineer Intern   *Nov 2020 – May 2021*

- Developed software in C++ for Garmin Tread, an Outdoor Adventure Product
- Wrote production code to enhance overall performance, resolve bugs, and refine the graphical user interface (GUI) of Tread
- Successfully revamped legacy satellite positioning pages, enabling their smooth operation on thousands of devices

Education

University of Kansas   Lawrence, KS
M.S. Computer Engineering, *College of Engineering*   *Aug 2020 – May 2022*

- Cumulative GPA: 3.76/4.00
- Thesis: Memory Bandwidth Dynamic Regulation and Throttling (Linux kernel module, Jetson Nano)

University of Kansas   Lawrence, KS
B.S. Computer Engineering, *College of Engineering*   *Aug 2017 – May 2020*

- Cumulative GPA: 3.72/4.00

Skills

Languages: C++, Python, C, JavaScript
Tools & Technologies: LLVM, Embedded Linux, CMake, Boost, CUDA, OpenGL, Git