ERIC SEALS

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Experience

GARMIN Olathe, KS
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, KS
Graduate Teaching Assistant *Aug 2020 - Dec 2021*

- Explained technical topics related to embedded systems and real time applications

GARMIN Olathe, KS
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

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

- Cumulative GPA: 3.72/4.00

Projects

- **Bandwatch (M.S. Thesis):** System-wide memory bandwidth regulation system, github.com/erjseals/bandwatch
  - Developed a real-time algorithm to dynamically regulate memory bandwidth between CPU and GPU tasks
  - Implemented the solution as a Linux Kernel module in C on NVIDIA's Jetson Nano platform
  - Utilized SD-VBS (San Diego Vision Benchmark Suite) and CUDA for rigorous testing and validation
  - Achieved significant performance improvements, reducing task slowdowns by up to 14.7x to 3.6x
- **AudioBud:** Audio Visualizer for Chrome, github.com/AudioBud-Chrome-Extension
  - Developed a Chrome Extension for real-time time and frequency domain audio visualization
  - Incorporated multiple digital audio filters (lowpass, highpass, bandstop) to modify audio output
- **Sharp Edges:** Client/Server to study the performance gains with 5G Edge Computing, github.com/sharp-edges-android
  - Established communication between the two entities via TCP/IP Sockets
  - Evaluated YOLOv3 Object Detection latencies by comparing computations on an Android app, a local server, and Google Cloud

Skills

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