






Ben Phillips

 jorbon.github.io
 github.com/Jorbon
 /in/ben-a-phillips

 ben.a.phillips@outlook.com
 913-213-8967

EDUCATION

Bachelor of Science in Engineering Physics (Computer Engineering)

• Minor in Film and Media, Honors student, Tau Beta Pi member, 3.99 GPA

University of Kansas

Expected May 2026

SKILLS

Languages: Rust, C / C++, Python, Java, Kotlin, JavaScript, VHDL, GLSL, x64 Assembly, WGSL, \LaTeX

Frameworks: Git, OpenGL, Linux, Android Studio, Jetpack Compose, ReactJS, WebAssembly

Technical Skills: Algorithms, Computer Graphics, Electronics Hardware, Math Modeling

WORK EXPERIENCE

Garmin Software Engineering Internship

Garmin

Software Architecture, Application Design, UX Systems, Physics Modeling, Python, Qt

May – August 2025

- Designed a new app architecture for a data analysis algorithm development tool with 10,000 line diff
- Added new graphical interaction systems, undo and redo, app session save files, an animation system, and data units tracking, while decreasing total code volume
- Refactored app repo to centralize state management, separate front and back ends, and use type checking
- Developed analytical models for fitness device sensor features, using Fourier analysis for PDE solutions

Quantum Computing Research

KUARQ Computing Research Group

Embedded Development, Quantum Simulation, Algorithms, Scientific Writing, CSL

May 2024 – May 2025

- Lead a project to develop quantum circuit simulators for Cerebras Wafer-Scale Engine (WSE)
- Implemented, profiled, and optimized algorithms for unique HPC architecture
- Collaborated with Cerebras and Argonne National Lab
- Created, published, and presented a poster as first author at the Supercomputing 2024 (SC24) conference

Condensed Matter Physics Research

KU Ovchinnikov Lab

Mathematical Model Development, Visualization Tools, Reverse Engineering, Rust

November 2022 – January 2024

- Developed a graphical visualization tool for Moiré patterns to predict material properties
- Reverse-engineered device communication protocols to plot and log data from an electron microscope

PROJECTS

Handheld Camera Embedded Device

CLIC Capstone Project

Embedded Development, Firmware, Linux, C, V4L2, OpenGL ES

January – May 2025

- Created a consumer-grade handheld digital camera in a team of 4 for my capstone project
- Software lead for system firmware and user interface on an embedded Linux platform
- Effectively allocated IO resources to simultaneously support a display, SDIO storage, USB, and six buttons

RESTful Calendar Coordination Platform

Rock Chalk Rendezvous

Application Architecture, REST APIs, Software Documentation, Software Testing, C++

February – May 2024

- Technical lead on team of 5, combining features from Outlook and When2Meet into a new app
- Created and applied design standards for networking and storage to achieve a RESTful architecture
- Verified implementations using unit tests defined in design documents

Low-Power Imaging Embedded System

GISP Recon Camera

Baremetal Programming, Hardware Interfaces, Real-Time Signal Processing, CAD, C++, Rust

January – August 2025

- Designed and constructed a three-camera capture device running on baremetal C++
- Programmed DMA (Direct Memory Access) to efficiently capture and multiplex live video signals
- Created an operational device within strict space, power, and budget constraints

Published Open-Source Minecraft Mod

Cool Elytra Roll

Open-Source Collaboration, Software Maintenance, Applied Math, Java

2021 – Present

- Added physics-based camera rotation to flight using matrix transformations
- Continuously maintained codebase and released updates, managing contributors' pull requests
- Over 160,000 downloads across multiple publishing platforms

CONFERENCE PUBLICATIONS

Towards Scalable Quantum Simulation on Wafer-Scale Engines

SC24 Poster

Phillips, Ben, Kneidel, D., Nobel, A., & El-Araby, E. (2024). The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC24), Atlanta, Georgia, USA, November 2024.