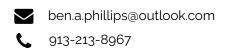
Ben Phillips

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



EDUCATION

Bachelor of Science in Engineering Physics (Digital Electronics Design)

· 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++, JavaScript, Python, Java, VHDL, GLSL, WGSL, CSL, LATEX

Frameworks: Git, OpenGL, Linux, WGPU, WebAssembly, ReactJS, Wwise

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

WORK EXPERIENCE

Garmin Software Engineering Internship

Garmin

App Architecture, Tools Development, 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

Quantum Simulation, Algorithms, Embedded Development, 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 Digital Camera - Capstone Project

[Project Poster Link] January - May 2025

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

· Software lead for system firmware and user interface on an embedded Linux environment

· Worked closely with hardware engineers to allocate SOC resources and maximize features under component, power, space, and budget constraints

Embedded Camera Recon System

[Project Post Link]

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

January – August 2025

- Designed and constructed a multi-camera capture device running on baremetal C++
- Given 2cm radius, 5W power, and \$150 budget design constraints
- · Used DMA (Direct Memory Access) and hardware configuration to capture and multiplex live video signals

Published Physics-Based Minecraft Mod

[CurseForge Link] | [Modrinth Link]

Applied Math, Open Source Collaboration, Software Publishing, Java

- · Uses physics calculations with matrix transformations to add physically accurate camera movement to flight
- · Continuously maintained and updated repo and binary releases, managing contributors' pull requests
- Over 140,000 downloads between publishing sites Curseforge and Modrinth

Online Desktop Calendar Application

github.com/delster1/RockChalkRendezvous

App Architecture, REST APIs, Software Documentation, C++

Technical lead on team of 5, combining features from Outlook and When2Meet into a new app

· Designed client and server for REST API architecture, using serialization patterns for networking and storage

CONFERENCE PUBLICATIONS

Towards Scalable Quantum Simulation on Wafer-Scale Engines

SC24 Poster [Poster Link]

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.