Joshua Johnson

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Education

Grand Valley State University May 2026

B.S.E. in Computer Science, Minor in Mathematics *GPA: 3.6/4.0*

- **Coursework:** Data Structures & Algorithms, iOS App Development, Web App Development, Discrete Structures, Database Management, Algorithm Engineering

Experience

Embedded Software Intern April 2025 – August 2025

Medallion Instrumentation Systems

- Engineered and validated production embedded software for boat displays, prioritizing long-term system stability and an intuitive end-user experience
- Rapidly prototyped a boat display front-end to visualize real-time telemetry, demonstrating a fast-learning and adaptable engineering approach
- Developed a robust Go backend interfacing with a C library for CAN bus data parsing, ensuring seamless hardware-to-software integration
- Took ownership of implementing a C-based NMEA 2000 address-claiming protocol, proactively preventing data collisions on third-party networks

Freelance Wedding Photographer & Consultant August 2024 – Present

Joshua's Photography (joshuasphotography.com)

- Act as a dedicated consultant for clients, providing transparent communication, setting clear expectations, and delivering a highly personalized, premium experience for their events
- Take full ownership of the production pipeline, from initial discovery and requirement-gathering consultations to live execution and final post-production delivery

Projects

MuscleMap iOS App | *Swift, SwiftUI, SwiftData, RealityKit, Blender* Fall 2025 – Present

- Engineered a comprehensive iOS fitness tracker using SwiftUI and SwiftData, featuring an interactive 3D anatomical model rendered via RealityKit to visualize muscle fatigue in real time
- Developed custom algorithms to calculate muscle fatigue decay and automate progressive overload, dynamically updating materials and emission shaders on the 3D model
- Implemented advanced analytics utilizing Swift Charts to visualize progress
- Enhanced UX by building a custom data-entry keyboard and integrating ActivityKit and UserNotifications for Lock Screen Live Activities and precise background rest timers

Self-Moving Chess Game | *C++, Arduino, Hardware Integration* | Video Fall 2024

- Invented an automated, IoT-inspired chess set that processes moves in real-time and physically drives pieces against the human player
- Constructed an 8x8 grid of magnet detectors wired to daisy-chained shift registers to accurately read physical piece locations
- Leveraged C++ and bit-shifting to manage an 8-byte real-time board state, triggering seamless physical counter-moves and showcasing a strong cross-disciplinary engineering curiosity

Technical Skills

App & Mobile Development: Swift, SwiftUI, Xcode, Human-Centered UI/UX Design, 3D Asset Integration (Blender)
Backend & Data: Go, Python, Neo4j, Cypher, SQL (postgre), Relational & Graph Database Management
Core Languages: Swift, Go, Python, C++, C
Developer Tools & Practices: Git, Agile Methodologies, Object-Oriented Programming, Google Cloud
Systems & IoT: Raspberry Pi, Arduino, ESP32 Microcontrollers, CAN bus, NMEA 2000

Interests

Bodybuilding & Nutrition, DIY Electronics, Automotive Repair, Travel, Photography, LEGO