

// PROFESSIONAL SUMMARY

Computer Science graduate from **Western Governors University** specializing in scalable backend services, real-time distributed networking, and audio/video automation pipelines. Strong foundation in algorithmic complexity, Linux input subsystems, and systems-level programming.

// EDUCATION & CERTIFICATIONS

B.S. Computer Science

Western Governors University

- Data Structures & Algorithms
- Operating Systems
- Network & Security
- AI & Machine Learning Optimization
- Software Engineering & QA
- Computer Architecture

Industry Certifications

Verified Credentials

- Linux Essentials (LPI)
- ITIL 4 Foundation

// EXPERIENCE & COMMUNITY LEADERSHIP

Audio / Video Production & Media Systems

Youth Ministry / Volunteer

Direct weekly audio engineering, and media delivery pipelines for weekly services and youth events.

- Operate and configure live digital video recording systems.
- Architected automated post-production workflows to reframe and publish sermon recordings to short-form social channels (TikTok, Shorts).

- OBS Studio
- Signal Routing
- Video Production
- Pipeline Automation

// TECHNICAL SKILLS

Languages & Frameworks

- Python
- Java
- Flask
- Bash
- GDScript
- Spring Boot

Systems & Infrastructure

- Linux Subsystems
- Docker
- TCP Sockets
- FFmpeg
- AWS Basics

Databases & Web

- MySQL
- SQLite
- MongoDB
- HTML5 / CSS3

// FEATURED ENGINEERING PROJECTS

Godot + Astron MMO Client & DC Protocol Parser

Networking / Distributed Systems

Engineered a client networking architecture connecting Godot to Astron cluster backends via variable-length binary datagrams and zone interest management.

- Custom runtime DC lexer/parser resolving multi-inheritance, atomic fields, and molecular groupings
- Stream-oriented TCP framing, binary serialization, and fixed-point value packing/unpacking
- DistributedObject lifecycle pipeline handling dynamic updates and state cleanups

- GDScript
- Astron
- TCP Sockets
- Binary Protocols
- Replication

Automated Video Tracking & Reframing Pipeline

Computer Vision / Signal Processing

Engineered an automated pipeline converting wide-angle church sermon recordings into dynamic, stabilized 9:16 vertical clips for social media distribution.

- Acoustic sync engine utilizing Librosa onset envelopes and SciPy signal cross-correlation
- VRAM-optimized SAM 2 visual tracking using proxy frames and 1D Gaussian smoothing trajectories
- Rawvideo subprocess streaming direct to FFmpeg pipes, avoiding intermediate disk I/O

Python PyTorch SAM 2 OpenCV FFmpeg SciPy

Automated Stem Separation & Multi-Track MKA Packager

Audio Engineering / Automation Pipeline

Engineered an automated end-to-end media pipeline in Python to ingest, isolate, and containerize full-album audio releases.

- Automated 4-stem ML source separation (vocals, drums, bass, other) using HTDemucs
- Dynamic FFmpeg subprocess multiplexing to map multi-stream audio and attach cover art
- Peak dynamic range normalization and automated metadata tagging for album-level batching

Python FFmpeg Demucs yt-dlp Audio Processing

BLE Peripheral Driver & Virtual Mouse Emulation Layer

Embedded / Linux Kernel Subsystems

Engineered a low-latency userspace Linux input driver to bridge unsupported BLE controllers into virtual system pointer devices.

- Decoded GATT notification streams with auto-reconnection and connection lifecycle logic via Bleak
- 60Hz continuous loop applying quadratic velocity ramping and sub-pixel accumulation
- Kernel-level input synthesis via Linux uinput/evdev for seamless event dispatching

Python Linux uinput BLE/GATT AsyncIO evdev