

SUMMARY

Creative, systems engineer, and game developer working across programming, 3D art, and music. I go deep in each discipline and synthesize unique cross-domain connections that let me move fast, produce higher-quality work, and pick up new tools quickly. Currently in the research phase for Quam Magnum's first game.

QUAM MAGNUM

Founder — December 2025–Present. Independent game studio, currently in foundational research ahead of engine and infrastructure work. Design philosophy centers on "perceptual realism": considering how an experience feels to inhabit, beyond standard photorealism. Building a custom engine instead of a licensed one to avoid vendor dependency and keep full creative control.

TECHNICAL PROJECTS

CORE: Limited Proof of Concept

OCT–DEC 2025

Small-scale tech demo, Unreal Engine 5 — 1 of 5 planned environments, single-semester window

- Solo-built a UE5 tech demo for Quam Magnum's flagship project CORE, integrating Unreal, TouchDesigner, Figma, and After Effects into one pipeline
- Built a custom equip/unequip inventory system via Control Rig wired into the first-person AnimBP state machine; modeled the equippable compass in Blender with always-north needle logic
- Built an ambient forest environment with wind-animated trees, distance-falloff bird audio, and footstep SFX synced to foot-ground contact using self-recorded foley
- Designed a dynamic main menu with a TouchDesigner-authored background video and a custom Niagara-driven UI cursor trail

OmniFolder

MAY–JUN 2025

github.com/caachr/OmniFolder

- Solo-conceived, designed, and built a self-hosted distributed backup suite in 7 weeks — ~5,800 lines of C++
- Built a client-server architecture from the socket level using TLS, a Protocol Buffer wire protocol, and custom message framing
- Implemented Argon2id credential hashing and ChaCha20-Poly1305 encrypted config storage
- Designed a GitHub Gists-based disaster-recovery beacon for full server-failure recovery

Core Meltdown

JAN 2025

Godot — Game Engine Design, Vanderbilt — github.com/caachr/cs3891-assignment1-core-meltdown — [gameplay video](#)

- First-person puzzle game; 5 levels built around a nuclear-meltdown theme with a 4-minute timer
- Modeled all assets from scratch in Blender: levers, a hinge-rotating hatch, caution tape, a password keypad
- Wrote a custom native C++ GDEExtension for a fading alarm-light effect

Beyond the Uncanny Valley

APR 2026

UE5 digital human — Immersion Culminating Project

- Built a custom digital human in UE5 via a hybrid Daz3D + Metahuman Creator/Identity pipeline, after Metahuman's adult-only templates proved unsuitable for a young-adult character
- Diagnosed and fixed a head/body conform bug traced to a mispositioned neck bone
- Directed a full motion-capture pipeline: facial (LiveLink Face, Metahuman Animator) and full-body (Move.ai, after Rokoko Vision failed)

Proximity Optimization

FEB 2025

Godot GDEExtension — Game Engine Design — [GitHub](#) — [demo video](#)

- C++ GDEExtension optimizing game-loop performance via proximity-based selective processing around a reference node; validated with a custom test scene confirming only in-radius objects were processed

Coilgun Physics

FEB 2025

Godot / Jolt physics — Game Engine Design — [GitHub](#) — [demo video](#)

- Built a custom Godot physics module extending Jolt with magnetic dipole simulation, attraction/repulsion forces, and pole-alignment torque
- Built a real-time debug visualizer for active magnetic fields and forces; applied it to a working 3D coilgun demo

Displace and Dissolve Shader

MAR 2025

Godot shader — Game Engine Design — [GitHub](#) — [demo video](#)

- Wrote a custom two-part Godot shader (vertex displacement + fragment dissolve), both noise-driven
- Added an interactive mouse-driven displacement/dissolve feature, demoed on a decaying sun object

Spider Boss Fight

APR 2025

Godot 4.3, C++ GDEExtension — team of 4 — [GitHub](#) — [gameplay video](#)

- 3D action survival game with an AI-driven spider boss; my role covered 3D modeling/rigging and audio systems
- Modeled, textured, and fully leg-rigged the spider boss for IK-driven animation
- Wrote a custom audio GDEExtension managing positional audio streams via a GDScript-callable play API

DeathSpire Codex

SEP–DEC 2025

Meta Quest 3 — Project in VR Design, Vanderbilt — team of 5

- VR card auto-battler; composed original adaptive battle music and assembled the arena environment
- Retargeted a knight model to Meta VR IK targets for full-body avatar embodiment; modeled a medieval book asset in Blender, cloth-simulated 60+ pages, then baked to a low-poly proxy to keep it game-ready

TECHNICAL PROJECTS, CONTINUED

Simple Emergent Behavior

SEP 2025

Unity — ARTS 1810, Vanderbilt

- 2D artificial-life simulation as generative digital art; procedurally generated terrain via layered Perlin noise
- Built state-machine-driven AI for prey, predator, and balancer agents, with a custom A* pathfinding system (line-of-sight smoothing, BFS fallback)

Personal Website

ONGOING

christiancaamano.com — raw HTML/CSS

- Hand-coded multi-page site with a custom design system across Home, Anthology, Gallery, and Blog
- Built a custom vertically-alternating branching Anthology timeline with embedded media, responsive across two breakpoints

MUSIC PRODUCTION — SPECTRAL ELEMENTS

Producing for 9 years in FL Studio. I handle the full creative pipeline on every release: composition, sound design, mixing, mastering, visuals, and branding. 19 songs released across dance, house, dubstep, and orchestral genres — soundcloud.com/spectralelements.

Dustborn — [link](#)

- First track fusing orchestral and electronic styles, built around the idea of a person "born from dust"
- Created the cover art from scratch in Blender and built a sound-reactive visualizer for it in FL Studio's ZGameEditor

VALHALLA — [link](#)

- Most technically complex release to date — a year in production, a 6-minute Viking-themed fusion of tearout electronic and full orchestral (Spitfire Albion Colossus)
- Built an original particle-based music visualizer in TouchDesigner, self-taught over roughly a month

PHOTOGRAPHY — SPECTRAL VISUAL

Shooting since 2020, starting with self-portraits for music branding before expanding into a broader practice spanning wildlife, architecture, and candid work. Moody, abstract, minimalist style with a focus on light, shadow, and composition. Shot on a Sony a7R III — instagram.com/spectral.visual.

"God's Vinyl" — Exhibited Work

- Abstract macro photo of a wall-clock face, exhibited with the Vanderbilt Photo Society; paired with a short reflection on the second hand resembling a vinyl needle

"Nectar of Creation" — Exhibited Work

- Abstract gold/liquid photo-art piece, exhibited with the Vanderbilt Photo Society; later reused as cover art for VALHALLA

SKILLS

LANGUAGES

C++, C#, Java, SQL/MySQL

SYSTEMS / SECURITY

C++ networking (TLS), Protocol Buffers, Argon2id, ChaCha20-Poly1305, GDB, disassembly-based analysis

CHARACTER PIPELINE

Daz3D Studio, Faceform Wrap, Metahuman Creator/Identity/Animator

VR DEVELOPMENT

Meta Quest 3 — IK avatar embodiment/retargeting

POST-PRODUCTION / DESIGN

DaVinci Resolve, Premiere Pro, After Effects, Figma

ENGINES / DEV TOOLS

Godot (incl. native C++ GDExtension), Unity, Unreal Engine 5 (incl. Blueprints), Blender, TouchDesigner, FL Studio, Qt6, CMake, vcpkg

3D ART & ASSET PIPELINE

Modeling, UV unwrapping, texturing/material authoring, baking, rigging, cloth simulation, game-ready optimization

MOTION CAPTURE

Move.ai, LiveLink Face, Rokoko Vision, Chaos Cloth

MUSIC PRODUCTION

Composition, sound design, mixing, mastering, adaptive game music, Foley

ANALYTICAL FRAMEWORKS

Spiral Dynamics, Integral Theory

EDUCATION

B.S. Computer Science — Vanderbilt University, Nashville, TN | August 2021 – May 2026 | GPA 3.505

Relevant coursework: Algorithms · Principles of Operating Systems I · Computer Architecture · Database Management Systems · Programming Languages · Artificial Intelligence · Intermediate Software Design · Program Design & Data Structures · Discrete Structures · Game Engine Design · Project in Virtual Reality Design · Cyber Security · Creative Coding for Visual Art · Electronic Music Production & Sound Design · Transformation Geometry