



Max Marino

Software Engineer & Learning Enthusiast

- 📍 Reading
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Open Source

Google GeminiCLI Conductor

Contributed to Gemini CLI Conductor (open source) by adding a Google C++ style guide summary used to guide the agent's C++ code style; PR merged after maintainer review.

<https://github.com/gemini-cli-extensions/conductor/pull/79>

Skills

Languages

C++, Python, TypeScript/JavaScript, Java, MATLAB

Backend

FastAPI, Flask, Node.js, PostgreSQL (Supabase), MongoDB, Redis

Frontend

React, Next.js, Tailwind

Graphics

OpenGL, GLSL

Debugging

Visual Studio / MSVC debugger, GDB, RenderDoc

Infra/Tools

Docker, CMake, Maven, Git, CI

SQL & Relational Databases

PostgreSQL, MySQL; data modelling, complex joins, query optimisation, and stored procedures.

Testing

pytest, GoogleTest (gtest), JUnit

Cloud/Deploy

Vercel, Cloudflare R2

Volunteering

University of Reading

Computer Science Course Representative

Attend staff meetings during the school year to voice students opinions on improving the computer science curriculum.

Interests

Real-Time Graphics & Engine Development

Scalable Systems & Distributed Architecture

Algorithms, Data Structures & Performance Optimisation

Applied AI for Software Engineering

Profiles

- 🐙 [dudujuju828](#)
- 🌐 [Max Marino](#)

BSc Computer Science student at the University of Reading (expected July 2027; predicted First-Class). Software engineer focused on performance and systems across C++/OpenGL graphics and Python/TypeScript full-stack development. Built a real-time AI telephony voice-agent platform (FastAPI/Twilio/STT/TTS + LLMs) and shipped a Next.js product with payments/auth, analytics, and 3D avatar customization. Actively contributing to and seeking further open-source work.

Projects

C++ Voxel Game Engine (OpenGL)

Repo: <https://github.com/dudujuju828/MinecraftStream>

Code + maths derivations developed live on stream: <https://www.youtube.com/@maxthomarino/streams>

Stack: C++17 · OpenGL · GLSL · CMake · GLFW · GLAD · Git · spdlog

- Built a voxel-based renderer in C++17 with modern OpenGL/GLSL, including chunked mesh generation and dynamic VBO/VAO updates for large worlds.
- Improved rendering efficiency with hidden-face culling and a texture-array material workflow to reduce draw calls and state changes.
- Implemented camera and transform math from scratch (no GLM), deriving view/projection on stream and integrating responsive controls.
- Set up a cross-platform CMake build (FetchContent) and modular engine subsystems (shaders, textures via stb_image, logging).

AI-Powered Telephony & Voice Agent System (AI Nurse Consultation Platform (Team of 2))

Stack: Python · FastAPI · Vocode · Twilio · OpenAI (GPT-4o-mini) · Azure Speech Services

(TTS) · Deepgram (STT) · Redis · Docker · ngrok

- Built a real-time, bi-directional voice AI for inbound/outbound phone calls; trialed as an AI nurse telephone consultation workflow for a private GP practice.
- Implemented a low-latency streaming pipeline (Twilio ↔ Vocode ↔ Deepgram STT ↔ Azure TTS) with reliable turn-taking and interruption handling.
- Developed a FastAPI backend to manage call state and expose REST endpoints for actions like programmatic outbound calls.
- Applied GDPR-conscious data handling for call metadata/recordings; work progressed to acquisition discussions with a healthcare company.

GemStack — AI workflow orchestrator for Gemini CLI

<https://github.com/dudujuju828/GemStack>

Stack: C++20 · CMake · Node.js (Gemini CLI) · Git

- Built a C++ wrapper around Gemini CLI to run multi-step agent tasks (“tickets”) from a queue, supporting batch execution and interactive prompt queueing.
- Designed a lightweight queue DSL with PromptBlocks, per-phase goals, persistent style directives, and specify checkpoints to enforce “verify/fix before proceeding.”
- Added config-file support (key=value) with clear CLI override precedence to control runtime behaviour.
- Implemented git auto-commit per successful prompt (configurable prefix/summary hygiene) plus autonomy features: reflective mode, persistent session logging (“AI memory”), and automatic model fallback on rate limits.

Octodoro | Full-Stack Developer

🔗 <https://octodoro.com>

Stack: Next.js 14 · React · Tailwind · MongoDB · Three.js/R3F · Stripe · NextAuth · Chart.js · Cloudflare R2 · OpenAI API

- Built and deployed a gamified Pomodoro platform with 3D avatar customisation (Three.js / React Three Fiber).
- Implemented social gameplay: clans, collaborative study lobbies, and global leaderboards.
- Improved performance and reduced bandwidth by moving static assets (3D models/audio) to Cloudflare R2.
- Added analytics dashboards for progress and long-term trends, and an AI study assistant (“Coach Octo”) using the OpenAI API as a premium feature.
- Integrated Stripe payments and NextAuth multi-provider authentication; featured/recognised on Product Hunt.

Accessibility-Focused QR Code Engine & Web Application (Team of 4)

Repo: <https://github.com/dudujuju828/QRCodeGenerator>

Live demo: <https://qr-code-generator-sepia-rho.vercel.app/>

Stack: Python · Flask · NumPy · Matplotlib · Docker

- Built an ISO/IEC 18004–aligned QR code generator in a team of four; coordinated architecture decisions and integrated contributions.
- Implemented the core encoder for Versions 1–2 from scratch, including Reed–Solomon ECC, bitstream formatting, masking, and format/version information.
- Shipped a Flask web app + live demo with WCAG contrast checks and color themes designed for color vision deficiency (CVD).
- Added styled rendering (circles/squares) and high-quality PNG export, and containerized with Docker for reproducible builds.

Anonymous Course Feedback Platform

Stack: Next.js (App Router) · TypeScript · Supabase (Postgres) · Node.js · Vercel

- Built and deployed an anonymous feedback platform for CS students with challenge–response access control to protect anonymity.
- Implemented dual-layer rate limiting (IP + client ID) to reduce spam/abuse and preserve data integrity.
- Developed server-side APIs (Next.js routes + Supabase) and shipped a privacy-first, accessible UI.

Education

University Of Reading	September 2024 - Present
BSc Computer Science — Expected July 2028 (Predicted First-Class)	BSc
Bath Academy	July 2023
Mathematics (A), Physics (B)	A Level

Experience

Randstad	February 2025 - Now
Specialist Note Taker	Reading
🔗 https://www.randstad.co.uk/	
<ul style="list-style-type: none">Produced accurate, structured lecture notes for university students with disabilities to support revision and accessibility.Applied active listening and concise summarisation to capture key concepts quickly under time constraints.Adapted note style to individual learning needs, demonstrating discretion, empathy, and attention to detail.	
Mere Trout	July 2023 - August 2023
Kitchen Assistant	Mere, Wiltshire
<ul style="list-style-type: none">Worked in a 5–6 person production team preparing trout for packaging, rotating roles to meet throughput targets.Maintained quality and hygiene standards while multitasking and communicating effectively in a fast-paced environment.Improved team efficiency through clear handoffs, problem-solving, and adaptability under pressure.	