



Max Marino

Software Engineer & Learning Enthusiast

⌚ Reading

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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/@maxthomarinostreams>

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; trialled 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.

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.vercelapp/>

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.

Experience

Randstad

Specialist Note Taker

🔗 <https://www.randstad.co.uk/>

February 2025 - Now

Reading

- 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

Kitchen Assistant

July 2023 - August 2023

Mere, Wiltshire

Mere, Wiltshire

- 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.