

Luka Kawashima

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EDUCATION

California State University, East Bay
Bachelor of Science in Computer Science

Hayward, CA
Expected Dec. 2027

EXPERIENCE

Undergraduate Research Assistant

Aug. 2026 – Present

California State University, East Bay (Advisor: Dr. Fay Zhong)

Hayward, CA

- Developed an initial VR memory-task prototype using Unity, C#, and XR Interaction Toolkit, with timed word presentation, delayed recall prompts, and response logging.
- Reviewed and summarized literature on VR-based programs and game design features intended to support cognitive stimulation in older adults, informing early-stage project planning with a faculty advisor.
- Awarded a faculty-nominated OSCAR Scholar research scholarship (2026–27); presenting this work at the CSUEB Student Showcase in April 2027.

PROJECTS

ARKVAIN – Multiplayer FPS on Steam | C#, Unity, PurrNet, Steamworks API, HLSL

Jan. 2026 – Present

store.steampowered.com/app/4390190/ARKVAIN

- Built a multiplayer FPS with full client-side prediction and server rollback in C# using Unity and the PurrNet networking library; attracted 240+ wishlists.
- Integrated Steam P2P lobby hosting, server browsing and join codes with synchronized per-player loadouts, cosmetics, map, and game-mode selection.
- Implemented server-authoritative free-for-all and rotating 1v1 modes, including spawning, respawning, player queues, spectator support, and disconnect handling.

play4dchess.vercel.app | TypeScript, JavaScript, WebGL, three.js

Sep. 2026

- Built a chess program that renders 4D chessboards through custom 4D-to-3D projections with instanced three.js geometry, and move generation that works in any number of dimensions, including check, castling and en passant, with perf tests.
- Configured GitHub Actions CI for automated testing and production builds, with continuous deployment through Vercel.

Table – Texture Painting Development Tool | C#, raylib, ImGui, Python, Claude Code

Sep. 2026 – Present

- Built a highly personalized tool for 3D asset texture painting: paints on the 3D model or its UV layout using BVH-accelerated raycasting, so strokes carry across UV seams and mirror across the model.
- Connected it to an art pipeline: a Python Blender add-on live-syncs geometry and UV edits without losing paint, a Photoshop round-trip via PSD, and one-click Unity URP material export.
- Developed in under a week by directing Claude Code in an agentic workflow, adding a frame profiler and hitch log to track down stutter.

Hypergeometry Visualizations | C++, OpenGL

Dec. 2025

- Built a real-time visualizer (C++17, OpenGL/GLSL, CMake) for wireframes of geometric figures in up to 8 spatial dimensions, working around GLSL's 4×4 matrix limit by passing N×N rotation matrices to the GPU as flat arrays and applying them in the vertex shader; set up CI.

TECHNICAL SKILLS

Languages: C#, Python, TypeScript, JavaScript, C++, Dart, GLSL/HLSL, HTML/CSS

Frameworks & Libraries: Unity, XR Interaction Toolkit, .NET, Flutter, three.js, PurrNet/PurrDiction, PyTorch, Hugging Face Transformers, NumPy

Graphics & APIs: OpenGL, WebGL, Steamworks API

AI & ML: vision-language embeddings (SigLIP 2), vector similarity search, held-out evaluation (AUC, precision@k)

Tools & Platforms: Git, GitHub Actions, pytest, SQLite, Inno Setup, Vercel, Cloudflare Pages

AI-Assisted Development: Claude Code, agentic and multi-agent workflows, MCP tool servers (Unity, Blender)