Brian Wonjun Lee

Philadelphia, PA | US & Korea dual citizen | 215-294-7152 | leebwj@sas.upenn.edu | leebrian.dev | LinkedIn

Education

University of Pennsylvania — Philadelphia, PA
MSE in Computer Graphics & Game Technology (CGGT), Submatriculation — *Expected May 2028*
BA in Computer Science & Design (Double Major), Benjamin Franklin Scholars — *Expected May 2027*
Relevant Coursework: Interactive Computer Graphics, Computer Animation (Graduate), Algorithms, Automata, Computability & Complexity, Computer Systems, 3-D Computer Modeling, Programming Languages & Techniques

Experience

Software Engineer Intern, Aleph Lab (Y Combinator) — *June 2026 – Aug 2026 · San Francisco (Remote)*

- Delivered an app-wide **React Native** redesign from Figma to production — shipped the reorganized screens first so users kept their bearings, then rolled a **33-section** design system onto every screen
- **Built the company's lifecycle notification system end to end, then made it autonomous** — per-stage copy, anti-nag back-off and a control group to prove impact; it checks its own guardrails and delivers unattended at **91% device reach**, and widening eligibility across parent and child accounts reached **~2.7×** as many families and its first paid conversion
- **Packaged the in-game AI agent as a versioned SDK outside studios can build on** — typed APIs, per-session isolation, capability enforcement and **1,600+ tests**, published over a hosted multi-tenant service — proven when I wrote a full game mode on it from the handover docs alone, with no repository access, and it merged as a first-party mode
- **Closed two child-safety gaps** — locked down public endpoints that trusted any user ID, with **zero caller changes**; and the AI agent's targeting, which picked fights with neutrals and bosses far above a child's level

Software Engineer Intern, BitMango (Puzzle1 Studio) — *June 2025 – Aug 2025 · Pangyo, South Korea*

- Improved UI/UX and core gameplay stability across **50+ live Unity titles** in a **420M+ download** portfolio
- Shipped fixes for **100+ bugs** raised by QA and player reports, correcting Unity prefabs and C# scripts in production
- Kept all 50+ titles live on the app stores by upgrading SDKs and platform modules as requirements changed

Project Lead & Product Designer, Penn Spark — *Jan 2025 – Present · Philadelphia, PA*

- Led a team of **15+** designers and developers shipping new products for real clients, from first concept to launch
- Defined the end-to-end user flows and reusable interface systems the team shipped across multiple client deliverables

Teaching Assistant, Computer Graphics, University of Pennsylvania — *Sept 2026 – Present · Philadelphia, PA*

- Grade C++/OpenGL assignments, projects and midterms for CIS 4600/5600, Interactive Computer Graphics
- Hold office hours on C++ debugging, 3D transformations, scene graphs and rendering, and review student code to show where an implementation breaks and why

Database Engineer Intern, IT-Farm — *June 2022 – Aug 2022 · Seongnam, South Korea*

- Designed and implemented a SQL database prototype managing **1M+ data entities** using Oracle and SQLite
- Processed and organized semiconductor datasets from **20+ client companies**, including Samsung, SK, and LG

Projects

Mini Minecraft | *C++, OpenGL, GLSL* — *Apr 2026*

- **A Minecraft-style 3D game engine written from scratch in C++ and OpenGL** (team of 3) — I owned the world generation: **7 procedural biomes** blended from layered noise, and caves generated as you explore
- **Owned the rendering pipeline that makes the world look real** — **13 GLSL shaders** for shadows, reflective water, ambient shading and a day-night cycle, plus post-process overlays for underwater and lava

Passenger | *Unreal Engine 5, HLSL, Maya* — *Mar 2026 – Apr 2026*

- **An animated short film built in Unreal Engine 5** — I wrote **2 custom shaders** that make the ray-traced render read as hand-painted rather than computer-generated, rendered out through the Movie Render Pipeline
- **Rigged and animated the character in Maya**, driven inside Unreal through an animation blueprint

Mini Maya | *C++, OpenGL, Qt* — *Feb 2026 – Mar 2026*

- **A 3D modeling tool in the spirit of Maya, in C++ and Qt** — edit any model's geometry directly, with a half-edge structure tracking how faces, edges and vertices connect, each selectable from a clickable Qt list
- **Smooths rough models into refined surfaces** with Catmull–Clark subdivision, the algorithm film and game studios use

Technical Skills

Graphics & Rendering: OpenGL, GLSL, HLSL, shader programming, Unreal Engine 5, Lumen, real-time & offline rendering
3D & Tooling: Maya, Blender, Substance Painter, Qt, Movie Render Pipeline
Languages: C++, Python, TypeScript, JavaScript, Java, Kotlin, C#, GLSL/HLSL, SQL
Frameworks, Infra & AI: React Three Fiber, Three.js, React Native (Expo), Node.js, Git, Docker, GCP, Claude Code, Codex, MCP
Practices: Trunk-based development, feature flags & staged rollout, CI/CD, code review, unit & regression testing