

James (Ziqi) Liu

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Education

University of Utah, Division of Games

Master of Entertainment Art and Engineering

Salt Lake City, UT

Expected May 2027

Cornell University, College of Arts & Sciences

Bachelor of Arts in Computer Science; Minor in Physics

Ithaca, NY

May 2025

Technical Skills

- **Languages:** C++, Python, C#, Java, C, OCaml
- **Tools:** Unreal Engine 5, Unity, OpenGL, Maya, Blender, Visual Studio, Git, Perforce

Experience

AI and Technical Art Tools Engineer Intern

May - August 2026

Lightspeed Studio, Tencent Games

Shenzhen, China

- Developed **Python-based Maya and Blender tools** to automate animation retargeting, asset validation, and rendering workflows.
- Converted core tools into **reusable Skills** for Tencent's internal agent platform, with **automated validation** and traceable execution.
- Designed **multi-stage concept-art ideation workflows** with artist-directed candidate selection and iterative review, passing approved outputs between stages.

Technical Director Intern

June - July 2025

Enlight Media, Animation Department

Beijing, China

- Implemented a **Python network-capture client** for real-time **motion-capture (MoCap)** broadcasts, exposing live pose streams to animation tools across the studio's local network.
- Reverse-engineered hexadecimal packet formats and built a **MoCap parsing pipeline** to convert raw network frames into numeric pose data for animation tools.
- Designed **keyframe-reduction and denoising algorithms** to reduce motion-data noise and redundant samples.

Selected Projects

Signal Lost - Alternate Controller Horror Game

Unreal Engine / Arduino

- Designed a **rotary-phone hardware controller** with **Arduino pulse decoding** and USB serial input; integrated the handset microphone and amplified speaker with Unreal Engine.
- Developed a **computer-vision facial tracking system** using MediaPipe and p5.js, streaming attention states to Unreal Engine through WebSocket, Python, and **Open Sound Control (OSC)**.
- Integrated **real-time speech recognition** for handset input and a **multi-device audio pipeline** driven by Unreal-to-VLC commands; managed game builds and contributed to gameplay system design.

RenderMasterBot - Local Unreal Editor Assistant

C++ / Slate / Python

- Developed a **C++/Slate Unreal Editor plugin** with a Python backend, using **Pydantic contracts**, live-state validation, and **editor transactions** to execute approved scene edits with Undo.
- Built a profiling pipeline combining **frame-time sampling**, **Unreal Insights GPU traces**, and **percentile analysis**; validated a conversational audit with 120 runtime samples and a 5 s trace.

Past Path - First-Person Puzzle Adventure

C++ / Unreal Blueprints

- Implemented **camera-alignment puzzle logic** with sketch, position, and orientation checks; developed a **C++ journal component** using **Data Assets** and **UMG** to manage clue pages and interaction state.
- Engineered **game flow and puzzle progression**, coordinating journal-level integration, **version control**, and engineering task allocation across the team.

Behavior Trees — Cornell University Game Library (CUGL)

September - December 2024

- Extended the **C++ behavior-tree framework** with per-instance random seeds and **randomized selector/sequence nodes**, enabling reproducible execution for AI debugging.
- Preserved **randomized child order** across update frames to maintain running-node state; added **JSON scenarios** for node execution, completion, and reset behavior.

Teaching Experience

Cornell University — Physics Teaching Assistant

- Led weekly discussion and problem-solving sessions for introductory **mechanics and electromagnetism**, explaining physical concepts and the mathematics used to solve problems.