

Rafael Padilla Perez

Portfolio: rafagamedev.com

Github: <https://github.com/Rafapp>

EDUCATION

- **San Jose State University** San Jose, CA
Bachelor of Science - Software Engineering; GPA: 3.54; Cum Laude. July 2016 - June 2020

SKILLS

- **Languages:** Python, C/C++, C#, GLSL, HLSL, MEL, HTML/CSS/JS.
- **Frameworks:** Qt, PySide, USD, OpenGL, CMake.
- **Tools:** Maya, Blender, Houdini, Renderman, Unity, Unreal, Git/Github, Zbrush, Substance, Perforce, Jira.

EXPERIENCE

- **SJSU Research Foundation** San Jose, CA
Research Lead Feb. 2022 - May 2024
 - **Responsibilities:** Designed, developed, and tested a VR framework for STEM College-Level Education. Conducted research trials. Collected and analyzed data for manuscript publication.
 - **Results:** Created 2 laboratory environments for the Materials Engineering MATE25 course, currently used by **200+** students per semester. Ran research trial with 30-student group, and found a **82.3% increase** in student learning and retention. Co-authored and submitted manuscript, pending publication to the SoftwareX Journal.
 - **Languages & tools:** Unity Engine, C#, Meta Quest II.
- **Playroom** Palo Alto, CA
Game Developer Intern Jun. 2023 - Aug. 2023
 - **Responsibilities:** Designed, directed and developed 3D web-based, multiplayer video game.
 - **Results:** Developed a web-based game engine using Three.js for 3D graphics and a custom physics engine with Cannon.js. Created a Python and Blender tool for level scene manipulation, reducing iteration time by **90%**. Launched the game "RollOut" within a 2-month deadline using the engine, reaching **5000+** players since launch.
 - **Languages & Tools:** Python, Blender, HTML/CSS/JS, React.js

PROJECTS

- **Prim:** Maya/Blender Plug-In, 3D Primitive Management (In progress)
 - **Description:** Developed a native Maya & Blender plugin which enables artists to curate and share 3D primitive libraries. The tool allows naming and saving scene meshes as primitives, which can be instanced in new projects. Entire libraries can be exported as custom .prim files for sharing.
 - **Languages & Tools:** QT, PySide6, Maya, MEL, Blender, Python.
- **Taka Taka:** Steam-Released Rhythm Video Game
 - **Description:** Spearheaded an 8-developer team as Producer and Lead Programmer using AGILE methodologies. Managed launch timeline, achieving a Steam release as scheduled with **1500+ wishlists** and **300+ sales**. Developed gameplay systems, user interface, and "TakaMaker," a Unity-based tool that streamlined the beatmap creation process and **reduced creation time by 60%**.
 - **Languages & Tools:** C#, HLSL, Unity Shader Graph.
- **Jelly Engine:** 3D Game Engine for Soft Body Physics
 - **Description:** Architected a C/C++ game engine for my graduation thesis, focusing on real-time soft body physics and rendering. Optimized soft body solver, reaching **120 FPS** with meshes **up to 1000 triangles**, and implemented a custom GLSL shader for subsurface scattering using the Oren-Nayar lighting model.
 - **Languages & Tools:** C/C++, CMake, OpenGL, GLSL.

LEADERSHIP EXPERIENCE

- **ACM SIGGRAPH Student Chapter at SJSU** San Jose, CA
President Nov. 2023 - May 2024
 - Re-founded and re-recognized the university's dormant SIGGRAPH student chapter, recruiting and managing a **6-member cabinet**. Organized events, workshops, and activities, increasing membership **from 0 to 250+**.
 - Secured over **\$1500** in club funding to sponsor 10 club members for the Game Developers Conference (GDC). Established partnerships with industry leaders like Riot Games, Walt Disney Animation, and Pixar, bringing guest speakers to campus.
- **Game Development club at SJSU** San Jose, CA
President Jul. 2022 - Aug. 2023
 - Led a 14-member cabinet using AGILE to oversee a **1,000+ member club** with a semester-long game production program. Mentored 8 game teams, of which 2 shipped on Steam. Helped organize Global Game Jam twice for San Jose, earning the "Global Game Jam Scholar" distinction, which earned me a full-access GDC pass.
 - Managed recruitment, outreach, workshops, tutorials, and events. Helped sponsor 18 GDC club member attendees through club fundraising efforts.