

Alexander Aseme

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SUMMARY

USC student with a strong background in math, theoretical CS, and CS education, specializing in graphics, animation, and game engine programming.

EXPERIENCE

Course Producer / Undergraduate TA

USC Discrete Methods in Computer Science

January 2024 - May 2024, Los Angeles, CA

- Graded 100+ homework submissions and exams across topics such as logic, set theory, and induction proofs.
- Led biweekly mentoring sessions for groups of 3–15 students, providing individualized guidance on problem-solving techniques.
- Collaborated with a 37-person team to review course materials and refine grading rubrics.

PROJECT

Programmer / Director / Technical Game Designer - Draw the Way

USC Intermediate Game Design and Production • August 2024 - December 2024

- Led programming across 5 sprints, collaborating with a Game Artist to deliver 15 builds, updating burndown charts weekly based on new/completed tasks.
- Engineered platforming mechanics and vector-based physics interactions using linear algebra and Unity's 2D physics engine.
- Wrote systems to capture and composite in-game screenshots by reading/writing image files, learning Unity's file I/O and image encoding APIs.

Programmer - Egyptian Ratscrew Final Game Project

USC Principles of Software Development

• github.com/kennedy Meadows/EgyptianRatscrew • January 2024 - May 2024

- Developed core game logic and player interaction systems in Java using libGDX, contributing to a fully playable online multiplayer card game.
- Worked in a 5-person team across 6 agile sprints; managed tasks in Notion, presented weekly builds to faculty, and completed 10+ milestones.
- Designed 3 state diagrams and gameplay systems, linking frontend to server logic to support real-time turn-based play over HTTP/WebSockets.

EDUCATION

Bachelor of Science in Computer Science Games

University of Southern California • Los Angeles, CA • 2026 • 3.913

- Awarded Gerald Lawson Fund Endowment
- Sony PlayStation Career Pathway Scholar
- WV.T. Rusch Undergraduate Engineering Honors Student (Research Track)

COURSEWORK

Programming Game Engines

University of Southern California • 2025 • Direct3D 11, Data-Oriented Design, Real-Time Systems, Memory Management, Modular Architecture

- Developed core components of a game engine in C++, including rendering, input, memory, and asset management systems
- Applied data-oriented and modular design to build real-time systems with efficient memory usage and performance
- Used debugging tools and Direct3D diagnostics to resolve memory leaks, runtime warnings, and rendering issues

Introduction to 3D Computer Animation

University of Southern California • 2024 • 3D Modeling, Keyframe Animation, Texturing and Materials, Lighting and Rendering, Compositing

- Created models for projects, focusing on polygonal techniques to create props and objects.
- Used hierarchies and rigged structures to animate models; practiced fine-tuning animation timing and movement to match desired pacing.
- Experimented with material textures, setting up scenes with various materials to demonstrate realistic textures under different lighting conditions.

Computer Graphics

University of Southern California • 2024 • 3D Math, 3D Graphics Programming and Rendering Techniques

- Used linear algebra to create transformations for rendering 3D models, simulate camera perspectives, and implement interactive 3D graphics.
- Built multiple 3D applications using modern OpenGL for custom lighting and texture effects.
- Implemented basic ray tracing for realistic lighting and shading, using spatial data structures to optimize rendering.

SKILLS

Front End and back end development, game design/development, user research, technical presentation and communication, writing

Programming languages: Java, C/C++, C#, Python, SQL/MySQL, Javascript, LaTeX

Tools: OpenGL, Direct3D 11, Unity, libGDX, Maya, Nuke, GitHub, Perforce, HTML/CSS