EMILY O'NEAL

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EDUCATION

BS IN COMPUTER SCIENCE - CAL POLY STATE UNIVERSITY, SAN LUIS OBISPO [**JUNE 2021**]
Concentration in Interactive Entertainment & Minor in Dance
Courses: Computer Graphics, Mixed Reality, Game Design, Ray Tracing, Advanced Animation, AI, Algorithms, Operating Systems, Systems Programming, Theory of Computation, Discrete Structures, Calculus, Linear Algebra

WORK EXPEREINCE

SOFTWARE ENGINEER, PLAYSTATION [**2021 - PRESENT**]
Client Engineering – Insures seamless experience across web, mobile, and console
Contributed to more than half of PlayStation's 20+ web microservices. Architected, designed, and implemented a 3rd party integrated service that provides a bridge between users and games. Focused on web and mobile based remote control of the PS5 gaming console. Surprisingly responsible for running all SCRUM ceremonies other than planning, including removing blockers. Onboarded last two new hires. Initiated and executed all post covid team bonding events.

SOFTWARE ENGINEER INTERN, PLAYSTATION [**SUMMER 2020**]
R&D – All off-console research and development
Researched current state of the art in immersive social gaming experiences. Member of a seven-person team developing a platform that reimagined how people play games virtually. Contributed to game design. Programmed graphic effects and animations. Implemented multiplayer functionality. Integrated game into the larger platform.

CO-FOUNDER, AMOTION GAMES [**2020 - PRESENT**]
An innovative platform that brings healthy gaming to every household by developing a web-based motion tracking system that requires only standard computer hardware. One of the two founding members of our 12-person team, including 4 engineers utilizing our Unreal based proprietary development environment. Core asset is intellectual property around computationally efficient methods that makes this experience accessible. Beta version currently available at https://amotiongames.com/

EMBEDDED SOFTWARE INTERN, CISCO [**SUMMER 2019**]
Developed test automation tools for next-generation routing products, increased code coverage from 82 to 86 percent.

RESEARCH - MIXED REALITY LAB [HTTPS://EMSONEAL.GITHUB.IO/#RESEARCH]

HUMAN CANVAS - Developed real-time software that uses the human body as a physical canvas for projected images. Directed a live dance performance. Responsible for everything but the core motion prediction algorithm.

MOTION CAPTURED DANCE - Conceptualized**,** choreographed, performed, and implemented a mixed reality dance film. Utilized skinning, quaternions, interpolation, and mocap with OpenGL and C++ to bring my vision to life.

MOTION TRACKING IN VR - Built a motion controlled virtual reality character in Unity. Made one experience with a motion capture suit and another with a Kinect camera to determine which type of motion tracking technology would be best.

HUMAN PAINT BRUSH - Created filter where specified body parts leave trails of color. Programmed in C++ and OpenGL. Integrated motion capture suit. Made a music video to demonstrate the program's capabilities.

CLASS PROJECTS [HTTPS://EMSONEAL.GITHUB.IO/#PROJECTS]

SEEDS IN STEM: M^3 - One of 5 developers who created a 2.5D puzzle game for an educational workshop to teach physics.

POT IT LIKE ITS HOT - Implemented collection system, tile map, and boss for Unity 2D platformer game.

DERIVING EFFORT QUALITIES - Developed an AI to recognize effort qualities in human movement. Created custom data set of 400 videos, used OpenPose to convert into data, and TensorFlow to train AI to categorize the data into movement quality.

TECHNICAL SKILLS

LANGUAGES - C++, Python, JavaScript, React, OpenGL, WebGL, GLSL, Java, C#, CSS, HTML, C, GraphQL

TOOLS - Unity, Unreal, PlayCanvas, GitHub, JIRA, LINUX/UNIX, Firebase, AWS, Docker, RESTful APIs

TECHNICAL SKILLS

WISH OFFICER - Created more accessible spaces for underrepresented students to expand their technical skills.	**2018 - 2020**
ENVISION FOUNDER - Spearheaded Cal Poly's first high school hackathon for students along the central coast.	**2019**
SLO HACKS ORGANIZER - Coordinated 6 hackathons, raising 70k+ and serving over 400 university students.	**2017 - 2019**
SCTECH FOUNDER - Conceived and organized the first hackathon benefiting 7th-12th graders in Santa Cruz.	**2016 – 2019**
CODE NATURALLY CURRICULUM DEVELOPER - Re-shaped curriculum to project-driven learning.	**2016 - 2018**