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**WORK EXPERIENCE**

5 yrs

**SOFTWARE DEVELOPMENT ENGINEER II - AMAZON**

- **Data persistence, server-side rendering, and asset pipeline for [goodreads.com](https://www.goodreads.com).**

Implemented improvements and subsystem re-architectures within the 0.5 million line-of-code proprietary Goodreads web engine. Designed and integrated a new Relational Database Service using AWS Aurora, saving developer time with new data persistence APIs and eliminating over 70% of annual site downtime.

Sept.  
2021 to  
Present**GAMEPLAY PROGRAMMER / STUDIO DIRECTOR - GO FACE GAMES**

- **Designer-facing Tools Creation**

Created a flexible editor toolset in C#, allowing simplified access to game systems functionality, limiting necessary UI interactions, and abstracting away text-based programming. Technical designers on our team don't touch code when they create and edit cards, companion abilities, level layouts, and enemy behaviors for our game.

- **Studio Direction, Production**

Drove ideation processes and equity division agreements. Currently manage eleven cross-disciplinary employees.

March  
2022 to  
Present**JUNIOR SOFTWARE DEVELOPMENT ENGINEER - AMAZON**

- **Customer Relationship Management for KDP**

Designed and implemented a Data Subject Access Request (GDPR compliance) developer debugging tool using a multitude of Native AWS services. Saved 15 hours of developer work per week post-launch.

Sept.  
2019 to  
June  
2021**SOFTWARE LEAD - CAL POLY CUBESAT LABORATORY**

- **NASA Ames Research Center's XCube Project**

An environment management system and communications interface for NASA's high-altitude aircraft. Designed, documented, and presented a 16 bit i2c communications standard for common use by the science payload, the aircraft, and the XCube carrier's systems, vastly simplifying electrical design constraints. Led the lab's team in integrating asynchronous communications software with the satellites' custom C Linux kernel.

- **Purdue's Aerodynamic Deorbit Experiment**

A satellite mission to deploy an experimental drag sail that reduces the time that unused satellites remain in orbit. Mentored a total of twelve Purdue students on our custom C++ library for experiment state control. Designed and implemented control systems external to their state machines in C, responsible for delivering mission-critical code.

Jan. 2018  
to Sept.  
2019

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**TECHNICAL PROJECT SAMPLES - ANIMATION TOOLS PROGRAMMING**

- **TRISOURCE - A 3D action/puzzle game set in a Tron-inspired cityscape.**

Modeled and textured a futuristic cityscape and fully rigged 3D character models in Blender, integrating them with Unity. Implemented custom inverse kinematics animations on humanoid and non-humanoid models in C#.

Jan 2021  
to June  
2021

- **CYTOCELL - A top-down arcade game based on surviving as a microorganism in a tidepool.**

Implemented entity design using Unity's HLSL shading language using custom linear, exponential, and logarithmic area functions. Tweened entity motion curves, animation, and VFX to achieve maximum visual impact.

Dec.  
2020 and  
Dec.  
2021

- **HANGTIME - A third person arcade game based on traversing a 3D space using a grappling hook.**

Modeled and rigged a humanoid 3D character in Blender. Added IK chains and implemented simplified ragdoll physics on IK targets in Unity to simulate the limb motion a human would have while falling through the air.

Jan 2021

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**EDUCATION**

**California Polytechnic State University, San Luis Obispo (Cal Poly) - Bachelor of Science in Computer Science**

Relevant Coursework: Computer Graphics (in C++), Systems Programming (in C), Operating Systems (in C), Game Development, Linear Algebra, Theory of Computation, Data Structures, Algorithm Classification

Degree  
Received  
in 2021

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**AFFINITIES**

- Unity, Unreal, Blender, Linux/Unix, Git, Jira
- C#, C, C++, Java, Javascript, Typescript, Kotlin, Python, Ruby, HLSL, React, OpenGL
- Theater acting, improv comedy, piano (jazz, music theory)

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**TECHNICAL PROJECTS - GENERAL**

- *Air Force Association's Cyberpatriot* cybersecurity competition - **Two time national finalist** defending against red teams from Facebook and Twitter
- *FIRST Robotics Competition* - **State Champions** with the team I founded and captained.