Albany Patriawan

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EDUCATION

San José State University, *B.S. Software Engineering* 05/2024

- Cumulative GPA: 3.6/4.0
- President's Scholar 2020, Dean's Scholar 2021/2022, *Cum Laude*

Relevant Courses: Data Structures and Algorithms, Object-Oriented Programming, Computer Game Design, Linear Algebra, Differential Equations, Calculus I/II/III, Machine Learning & Big Data, Computer Networking
Activities: ML Club, Computer Graphics Club, VR Club, MSA

WORK EXPERIENCE

Zillow, *Software Developer Engineer Intern* 05/2023 - 08/2023
TypeScript, NestJS, NextJS, Jest, GraphQL, styled-components

- Implemented a REST API with NestJS for Trulia.com's lead form, reducing user response times by 80% and achieving 75% test coverage with Jest
- Developed an "Actions on Last Viewed Property" feature using in-browser session storage; successfully passed A/B testing and was fully released after demonstrating significant user engagement improvements
- Fixed 10 front-end bugs using NextJS, styled-components, and an internal component library, enhancing the user experience for 9,000,000+ monthly visitors
- Received an "exceeded expectations" performance score for comprehensive documentation and Git management

Talentnook, *Private Programming Tutor* 08/2020 - 05/2023
Python, Java, Pygame

- Taught middle and high school students programming concepts like loops, conditional logic, and objected-oriented programming with Java and Python, placing them in the 90th percentile in an academic setting
- Guided students through projects like Discord bots and Space Invaders, boosting engagement and productivity

PROJECTS

The Abyss, *3D Spaceship Landing Game*
C++, OpenFrameworks, GLSL, Maya

- Implemented 3D spatial partitioning with a recursive octree for efficient collision detection and optimized search algorithms
- Built a particle system editor with GLSL shaders, forces, and OpenFrameworks UI kit, allowing customization of color, size, emission type (one-shot vs continuous), speed, and drag
- Developed a force-based physics system using vectors and matrix transformations, enabling smooth character movement and particle effects

Inertia & Ghoul Society, *2D Unity Games*
C#, Unity

- Implemented behavior trees and finite state machines (FSMs) to efficiently create dynamic enemy and boss behavior AI, enhancing the reusability of behaviors across different game scenarios
- Implemented an event-driven architecture and object-oriented programming (OOP) principles, optimizing decoupling between game objects and enabling rapid prototyping for level design
- Designed levels bottom-up using a puzzle matrix to create simple yet challenging levels

Wingsuit World, *ROBLOX Game*
Lua, ROBLOX Engine

- Implemented a semi-realistic flight system that incorporates aerodynamic drag and lift; utilized concepts like cross and products to apply lift forces onto the player only in certain orientation angles
- Implemented the client-server model and event-driven architecture, optimizing response times for high-latency players and preventing leaderboard tampering from cheaters

TECHNICAL SKILLS

Programming Languages: C++, C#, C, Lua, Java, Python, HTML, CSS, SQL
Frameworks & Engines: Unity, Godot, ROBLOX Engine, OpenFrameworks, OpenGL, NextJS, ReactJS, ExpressJS
Tools & Platforms: Docker, Kubernetes, GitLab CI/CD, GitHub, MySQL, Redis, RabbitMQ
Design Tools: Figma, Cinema4D, Maya, Photoshop, After Effects, Premiere Pro