Michael Partridge

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Summary

- 6+ years of software development with proficiency in Java, C/C++, and Python
- Lead Programmer with experience in web and systems design, graphics, physics engines, and gameplay.
- Driven to build exceptional user experiences with a proven record of taking projects from concept to completion.

Skills

Programming: Java, C++, Python, gdscript, gdshader, GLSL, OpenGL   **Services:** Amazon EC2, Firebase, Jira, Linear
Engines: Godot, Unity, Unreal 5, and Custom Engines   **OS:** Windows, Linux (Ubuntu), MacOS
Softwares: Maya, Blender, Photoshop, GitHub, GitLab, Android Studio

Experience

Lead Programmer - Hunu Interactive (July 2024 - Present) | Godot, Amazon EC2
Tectonic Tactics (In Development)
- **Multiplayer:** Stood up an Amazon EC2 server for cross platform multiplayer.
- **Design Tools:** Developed tools that allow for our designers to create new playable pieces with Google sheets.
- **Gameplay:** Built a system of modifiable chess-like game pieces, each with their own unique power-ups that shift and change the playing field itself.
- **Graphics:** Created placeholder particle effects and models as proof of concepts for our designers and artists.

Personal Trainer Mobile App | Flutter, Firebase, Android Studio, Xcode
TonneItUp App
- **Front-End:** Developed dynamic widgets for pages in the app meant to display variable user data.
- **Leadership:** Led a team of 8 in the technical aspects of the project in designing features and their implementation.
- **Firestore Database:** Built out the portion of our database capable of storing user data and custom client workout information.
- **App Deployment:** Oversaw the creation of our developer accounts and ensured our app adhered to the policies as outlined by both App Store and Google Play.

2D Platformer | Godot, Itch.io
Growth
- **Development:** Designed and developed this fully functional 2D platformer with Godot over the course of 2 days for a Game Jam.
- **Visuals:** Implemented simple and minimalistic visuals including 2D particle effects, 2D dynamic lighting, and light occluders.
- **Gameplay:** Built and refined a player controller using a 2D rigid body for gravity and collision, with an added bounce animation and sound effects.

3D Physics Based, Multiplayer Spaceship Combat Game | Java, OpenGL, Bullet, JInput, JOAL
Beyond
- **Graphics:** Implemented a custom skybox, linear fog and height maps using the Java OpenGL port, JOGL.
- **Physics:** Achieved satisfying Zero Gravity flight controls using the JBullet physics engine.
- **Procedal Map Generation:** Developed a system for randomly placing asteroids in a playable field based on random seed generation.
- **AI:** Created a simple state machine-based enemy AI that chases and fires at the player until they are destroyed.

Advanced Computer Graphics | OpenGL, Linear Algebra, Vector Math, GLSL, Java, Blender
Custom Renderer
- **Graphics:** Advanced rendering techniques such as ray-tracing, environment reflections, tesselation, and water
- **Linear Algebra:** Direct manipulation of an objects model, view, and projection matrices.
- **Modeling:** Used Blender to create models and animations.

Advanced Algorithm Design | Java
Algorithms
- **Time Complexity:** Designed and implemented advanced algorithms with the goal of achieving fast time complexities
- **Examples:** Studied known algorithm designs such as dynamic programming, greedy algorithms, network-flow, and divide and conquer.

Education

California State University, Sacramento - Bachelor's of Science (BS) in Computer Science   **Graduated:** December 2024