Philip Clay Evans

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I am a versatile gameplay, tools, and graphics developer accomplished at efficiently implementing complex algorithms. I am a supportive team player with a propensity for organizational leadership. My greatest ambition is to be an integral part of the team that creates the next era-defining game.

SKILLS

Game Development

- Gameplay programming, shader programming, game engine scripting, game design, software design, algorithm design and analysis, design patterns, TCP and UDP networking

Programming/Scripting Languages

- C#, C++, C, Python, Java, HLSL, bash, SQL, Javascript, JSX, HTML, XML, CSS, Assembly

Frameworks/Tools

- DirectX 11, Unity, React, Visual Studio, Eclipse, Android Studio, Cloud9, Git, Trello, Slack

Mathematics

- Linear Algebra, Discrete Mathematics, Integral and Differential Calculus

Other

- Web app development, Android development, hardware interfacing & prototyping, operating systems

EDUCATION

California State University, Monterey Bay (CSUMB), Seaside, CA
Bachelor of Science, Computer Science (with distinction), December 2017

EXPERIENCE

Lead Designer & Developer, *Food Fight (in progress)*
Marina, CA — Unity, C# — January 2018 - present

- Managing the design, development, and production of a 3D multiplayer beat 'em up game with food characters.
- Currently creating a networked prototype of the game.

Researcher, Real-Time Dynamic Global Illumination Systems
CSUMB, Seaside, CA — DirectX, C++ — June 2016 - August 2017

- Developed a partially dynamic global illumination system in DirectX 11 that resulted in a 30% decreased rendering time over existing methods.
- Designed and implemented:
    - compute shaders to calculate lighting data and store it in a spatial partitioning data structure (octree)
    - tessellation and geometry shaders to decrease the volume of lighting information
    - partial scene updates to decrease frame processing time

Dynamic globally illuminated scene

    - voxel count prediction and bit packing to decrease memory usage
- Project available at https://pcevans.github.io/projects.html#research

Teaching Assistant, Graphics Programming
CSUMB, Seaside, CA — DirectX, C++ — June-August 2017
- Co-developed course materials and assignments covering the DirectX 11 framework, billboarding, mesh creation, vector and matrix math, shaders, lighting algorithms, and procedural generation.

Teaching Assistant, VR Game Jam
CSUMB, Seaside, CA — Unity, C# — June 2017
- Co-developed a Unity framework to allow non-programmers to easily prototype FPS games in VR. Completed framework with documentation on a tight schedule to provide the backbone for the course.
- Skills reinforced: VR controller functions, raycasting, diegetic UIs, waypoint navigation

Volunteer, Digital Nest
Watsonville, CA — Arduino C — Spring 2017
- Co-designed a basic programming course to expose underserved high schoolers to computer science.

SELECTED COURSEWORK

Advanced Game Programming
Unity, C# — Fall 2017
- Developed a Unity tool to turn any audio waveform into a drivable racetrack for use in racing games.
- Skills obtained: game engine creation, design patterns, navigation algorithms, collision detection algorithms, procedural generation, neural networks

Game Engine Programming
Unity, C# — Fall 2016
- Worked in a team to develop an original art game in Unity in which a player controls a phoenix to warm the wintery landscape and usher in springtime. Released the game on itch.io, becoming the school's second most downloaded game out of 21.
- Developed a terrain deformation algorithm to simulate snow melting and a procedural tree cluster generation algorithm to keep the game fresh with each playthrough.
- Project available at https://pcevans.github.io/projects.html#enkindle
- Skills obtained: 2D and 3D game development, Unity engine, UI design, sound design, waypoint navigation, AI programming, animation

Graphics Programming
DirectX, C++ — Spring 2016
- Wrote shaders for lighting techniques such as volumetric lighting, shadow mapping, and HDR rendering for implementation in a procedural world generation project.
- Skills obtained: DirectX framework, billboarding, model creation, linear algebra, shaders, lighting algorithms, and instanced rendering.

Other courses
- Intro to Computer Networks (Python), Operating Systems (C, bash), Computer Architecture (C, MIPS), Computer Algorithms (C++), Software Design (Java, XML, SQL), Multimedia Design and Programming (Java, Python)