Phani **Srikar**

ENGINE DEVELOPER · GRAPHICS PROGRAMMER

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"Pixels....Ummm.... I eat tasty pixels for Breakfast, Lunch and Dinner."

Summary

Graphics programmer with unflinching thirst for pixels and passion to make something intriguing and incorporate the wonders of pixels into the virtual world. A nerd who loves to architect game engines and make hardware run faster. Highly enthusiastic about GPU architecture. Homebrew developer for the PSVita and PS3 consoles. Electronics engineer by heart who can make wonders with ICs and can control anything that is micro.

Skills

Programming Languages	C, C++, Assembly, Lua, CUDA, C#, Objective-C/C++, GLSL, HLSL, Nvidia CG, PSGL
APIs	OpenGL, Vulkan, DirectX 11, Metal, GXM(PSVita), GCM(PS3), QT, PhysX, Box2D, OpenAL
Architectures	Turing, Ampere, RDNA 1/2, Arduino, Raspberry Pi
Tools	Visual Studio, RenderDoc, NSight, Atmel Studio, XCode, Blender, Houdini
Game Engines	Unity, Unreal, Phyre Engine

Projects

Fireworks Engine

https://github.com/Pikachuxxxx/Fireworks-Engine

LIGHTWEIGHT SANDBOX GAME ENGINE USING OPENGL FOR ADDITIONAL CUSTOMISATION AND QUICK PROTOTYPING

- Created a complete 2D and 3D rendering pipeline from scratch using OpenGL as the backend API
- Created a simple and clearly documented Engine and Scripting API for faster development and customisation
- Added support for 2D and 3D Audio with an extensive API using OpenAL
- Designed a component system for rigidbody, transform and supports up to 20 components with a simple Interface to extend to new components
- Implemented a simple material system that leverages both the forward and deferred rendering pipelines
- Implemented 2D sprite animation and 2D Physics (Box2D). Also supports true type font rendering
- Implemented 3D skeletal animation and primitive 3D physics algorithms and responsive camera system
- Designed Highly optimised Batch Renderers for 2D and 3D primitives as well as 3D models for static and dynamic meshes

R8

https://github.com/Pikachuxxxx/R8

CUSTOM 8-BIT RASTERIZATION AND RENDERING API

- Created a CPU based **Rasterization algorithms and Rendering** API
- Designed a state machine mechanism to mimic the behaviour of OpenGL 2 for the Rendering API
- Designed a simple global rendering state manipulation functions and helper maths(matrix and vector) functions (similar to legacy OpenGL)
- Designed the API to be cross-platform since it is CPU accelerated
- Implemented scan-line rendering and various primitive modes such as line, point, line strip etc
- Implemented *Floyd-Steinberg* dithering algorithm for image dithering effects
- Designed a 8-bit depth buffer for early depth-testing and also support for blending and kernel effects such as gaussian blur and edge detection

Open Source Contributions

Bosca Ceoil

https://github.com/TerryCavanagh/boscaceoil

MAINTAINER OF MACOS SUPPORT AND C++ BACKEND PORT

- Maintainer of Bosca Ceoil for MacOS system
- Ported SiON library from hexa to C++ to port Bosca code base from actionscipt to C++
- Played a crucial role in extending the life and support of the software

Work Experience

Computer Graphics Engineering Intern

Bangalore, India

VIGA ENTERTAINMENT TECHNOLOGY

Feb. 2021 - Apr. 2021

- Implemented IMU based motion capture pipeline from scratch and development of proprietary motion solving algorithms
- Implemented Research practices in motion capture to production pipeline
- Designed a QT - Vulkan application for visualisation of the 3D motion capture data + plugin for Unreal engine
- Contributed to understanding of IMU sensor data and improvement of sensors workflow

Unity Student Ambassador

Hyderabad, India

SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY

Sep. 2020 - Jun. 2021

- Conducted sessions on Introduction to Game Development.
- Implemented workshops on Unity and Blender workflow.

Gameplay Systems Designer Intern

Hyderabad, India

BONE GAME STUDIOS

Apr. 2020 - May. 2020

- Designed level management system for gameplay selection

Technical Head, Techvision Club

Hyderabad, India

SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY

Aug. 2019 - Aug. 2020

- Lead mentorship porgrammes for many students on various topics and projects.
- Lead the organisation of annual college tech festival and oversaw the technical competitions.