

# 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

<b>Programming Languages</b>	C, C++, Assembly, Lua, CUDA, C#, Objective-C/C++, GLSL, HLSL, Nvidia CG, PSGL
<b>APIs</b>	OpenGL, Vulkan, DirectX 11, Metal, GXM(PSVita), GCM(PS3), QT, PhysX, Box2D, OpenAL
<b>Architectures</b>	Turing, Ampere, RDNA 1/2, Arduino, Raspberry Pi
<b>Tools</b>	Visual Studio, RenderDoc, NSight, Atmel Studio, XCode, Blender, Houdini
<b>Game Engines</b>	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 actionsript to C++
- Played a crucial role in extending the life and support of the software

## Work Experience

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### Computer Graphics Engineering Intern

VIGA ENTERTAINMENT TECHNOLOGY

*Bangalore, India*

*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

SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY

*Hyderabad, India*

*Sep. 2020 - Jun. 2021*

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

### Gameplay Systems Designer Intern

BONE GAME STUDIOS

*Hyderabad, India*

*Apr. 2020 - May. 2020*

- Designed level management system for gameplay selection

### Technical Head, Techvision Club

SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY

*Hyderabad, India*

*Aug. 2019 - Aug. 2020*

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

## Education

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### Sreenidhi Institute of Science and Technology

B.TECH IN ELECTRONICS AND COMMUNICATION ENGINEERING

*Telangana, India*

*Aug. 2017 - July. 2021*

### Narayana Junior College

CLASS XII

*Telangana, India*

*Aug. 2015 - Aug. 2017*

## Hobbies

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- **Speedcuber** - can solve a wide range of puzzle before you say brrr.
- Loves to play Badminton
- Amateur Violinist
- Gaming
- Homebrew Development
- Diving
- Astrophysics