Twarit Waikar

Portfolio • Github • LinkedIn
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SUMMARY

Systems programmer interested in Operating Systems, Computer Graphics, Virtual Reality and Cloud. Eager to learn new technologies. Can search for niche solutions on Google

EDUCATION

B.TECH COMPUTER SCIENCE AND ENGINEERING

CGPA 7.661
Indian Institute of Technology, Roorkee, India (2021)

CBSE 10+2 NON-MEDICAL (COMPUTER SCIENCE)

Boards 95.2%
Delhi Public School, Sector-19, Faridabad, India (2017)

SKILLS

LANGUAGES

Comfortable
Modern C++ 11/14/17, Lua, Unreal Blueprint, Python, Java, C, PHP, JavaScript, HTML/CSS
Familiar
TypeScript, CoffeeScript, C#

FRAMEWORKS/LIBRARIES

Comfortable
Win32 API, DirectX 11, OpenGL 3, Unreal Engine 4, Godot Engine, SFML, GLFW, Terraform, AWS Boto3, GCP Client APIs
Familiar
Unity 3D, SUMO, ToroPHP, MySQL

TOOLS

Version Control(Git, Github), IDEs (VS, VSCode, Eclipse), CMake, Scons, Vcpkg, Windows, Linux, MacOS

EXPERIENCE

CLOUD INFRASTRUCTURE COST OPTIMIZATION Remote Internship

Salesforce Hyderabad 2020

- Implemented a cloud service agnostic, infrastructure crawling framework in **Python** 3 which crawls **GCP** and **AWS** in search of unlabeled, unnecessary resources
- Designed the framework in a manner that it is extensible to any other cloud service with minimal effort

GOOGLE SUMMER OF CODE 2019 AND 2020 Version Control System Integration | Code | Docs

Godot Engine

- Developed and now maintaining the complete **Version Control systems integration** in the Godot Editor
- Integrated **Godot GDNative C++ API** with **libgit2** which is a re-implementation of **Git** written in C
- Mentored a feature expansion of the VCS Integration project in GSoC 2020

3D TRAFFIC DRIVING SIMULATOR IN UNREAL ENGINE 4 Internship

Robert Bosch, Bangalore 2019

- Integrated a traffic simulation engine using proper traffic rules called SUMO in **Unreal Engine 4** which used the **SUMO/TraCI API**
- Applied Unreal Engine's user interface and **procedural generation** tools to create a traffic behaviour data collection virtual environment

PROJECTS

ROOTEX ADVANCED C++17 3D GAME ENGINE Code | Docs

SDSLabs, IIT Roorkee

- Designed the **C++** engine with a **Lua scripting API** with a modified **impure-ECS design** and a **Dear ImGui** editor GUI
- Implemented the Event Manager, **Multithreaded** resource loading, **OpenAL** Audio engine, **Bullet Physics** integration, Overlay system using **HTML/CSS/Lua** , etc.
- Developed a custom **DirectX 11** rendering engine in C++ with materials, **particles effects** (Effekseer integration and a custom **hardware instanced** particle engine), dynamic and static Phong lighting, post-processing (**Bloom, FXAA, ASSAO, Tonemap, Gaussian Blur, etc.**), **sky box** , **depth fog** , **automatic mesh LODs** , **skeletal animations** and more.

RUBEUS C++17 SIMPLE 2D GAME ENGINE Code | Docs

SDSLabs, IIT Roorkee

- Implemented a 2D rendering engine in **OpenGL 3.3** and a **custom 2D physics** engine written from scratch using simple collision detection algorithms
- Designed other sub-systems in the engine such as audio, input, asset management, level loading etc.

G FOR GOLF UE4 GAME + VR EDITION Gravity based golf game | Code | Release

SDSLabs, IIT Roorkee

- **Unreal Engine 4** game with crisp controls and effects, for game feel
- Designed and ported the game to a VR experience (stood **Top 3 in Microsoft Code.Fun.Do Round 1** Hackathon at IIT Roorkee)