

Sagar Kalbande

CONNECT

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Github:// [rgb-guy](#)
YouTube:// [gamedev tutorials](#)
Portfolio:// [all projects](#)

EDUCATION

IIT KHARAGPUR

B.TECH AND M.TECH

Industrial Engineering
2012-2017

SKILLS

PROGRAMMING

C++ • C# • Python

TOOLS

Unreal	Unity3D
Blender	RenderDoc
ARCore	Android Native
OpenGL	OpenFrameWorks
Pandas	Numpy
Git	Powershell

PERSONAL PROJECTS

MAWN

Role: Gameplay programmer

The game was covered in multiple youtube channels and blogs.

Link:// [itch.io](#)

STRETCHY CLOWN

Singlehandedly created the complete game, including the 3d assets, audio, level, gameplay, UI.

Link:// [itch.io](#)

OPENGL RENDERER

WIP- Creating a C++, OpenGL and imGUI based renderer. Features: 1st person camera, model loading, textures, phong shading.

MASTER THESIS

ACCIDENT SIMULATOR

Crane simulator built on **Unreal Engine**.

Publication Link://[Springer Singapore](#)

RECOGNITION

- IP contributor (Qualcomm - 2020)
- QualStar (Qualcomm - 2019)
- Special Mention Sports (IIT - 2017)

EXPERIENCE

SENIOR ENGINEER | QUALCOMM XR RESEARCH

Dec 2020 - Present | Bangalore

- Designed a novel **real-time depth compression algorithm** and quality evaluation technique for split rendering for Qualcomm powered XR devices that reduces the judder and improves visual quality by manifolds.
- **Filed 3 patents** on techniques to improve XR experiences.

ENGINEER | QUALCOMM XR RESEARCH

Nov 2018 - Nov 2020 | Bangalore

- Worked on building features and optimizing an in house **Unreal Engine** game for Vector Streaming: Split Rendering for VR.
- Made improvements to the asset pipeline which resulted in **lower shader compile times**, and **improved framerate**.
- Collaborated with XR Machine Learning team to build a configurable module for **synthetic data generation using blender's python scripting** tool for Temporal and Spatial consistent light estimation of AR Environments.
- Automated the data creation and storage process across multiple machines using **PowerShell** which resulted in generation of **2 lac+** high resolution image dataset within a few weeks.
- **QARena**: Conceptualized and built AR Home app for AR glasses using **Unity**. Integrated it with Qualcomm's internal perception API for 3d reconstruction.
- Prototyped VR and AR applications and in-house tools using **Unreal, Unity and blender** to facilitate various workflows for the team.
- Developed a **live 3D telepresence** system that **captures and streams point cloud** to a remote user for viewing on an AR device. Optimized overall system to run on low-tier mobile GPUs at 60fps with 1s end-to-end system latency. **Finalist in Qbuzz 2019**: Maker Challenge and awarded Qualstar.

FREELANCE GAME DEVELOPER | FIVERR

Aug 2018 - Nov 2018 | Remote

- Gained **Level 1 seller** title by maintaining consistent **5 star ratings** on 23 consecutive game development orders in a time span of 3 months.
- **Responsibilities**: getting client requirements, providing cost projections and timelines, **creating game design documents**, **collaborating with art team** on asset requirements.
- Projects include a VR game, a platformer and Architectural Visualizations.
- Worked on **core gameplay features, AI, UI, and Animation Programming**.

GRAPHICS ENGINEER - VR | VIZEXPERTS

May 2017 - Aug 2018 | Gurgaon

- Used the **client-server API** of Unreal Engine to build **Multiplayer** gameplay features for the proprietary collaborative VR framework, Georbis Play.
- Handled the complete **Animation Programming** pipeline for Snow and Avalanche simulator, a product build upon Georbis Play.
- Integrated **full body tracking**, with HTC Vive for the framework.
- Collaborated with technical art and 3d modelling team to **fix framerate issues**, and to build and integrate optimized assets for the game.
- Built multiple quick VR prototypes for client demos. [link](#)

GRAPHICS ENGINEER INTERNSHIP | VIZEXPERTS

May 2016 - July 2016 | Gurgaon

- Assisted the development of Android version of COOLVR, a hotwheels style track builder game for **Samsung GearVR** using Unreal Engine 4.
- Received a **Pre-Placement Offer**.