Sahil Chawla

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EDUCATION

Georgia Institute of Technology | *Atlanta, Georgia, United States* ***August 2024 – May 2026***
Masters in Computer Science
Coursework: Procedural Content Generation, GPU Hardware & Software, Computer Animation, and Video Game Design

MIT World Peace University | *Pune, India* ***July 2019 – June 2023***
Bachelor of Technology in Computer Science & Engineering **CGPA: 9.44/10**

SKILLS

- **Programming Languages:** C++, C#, C, Typescript, Javascript, HTML, CSS, Python, YAML, GLSL, Java
- **Technologies:** Unreal Engine 4/5, Unity, Cocos Creator, Colyseus, GameAnalytics, React, Electron, NodeJs, GLFW, OpenGL, Visual Studio, Visual Studio Code, Git, Blender, Figma
- **Concepts:** Data Structures and Algorithms, Linear Algebra, Operating Systems, Memory Optimization, Object-Oriented Programming, 3D Maths, Rendering/Graphics Pipeline, Game Engine Architecture, Project Management

WORK EXPERIENCE

Bobble Head Studios, Founder and Lead Game Developer | *Pune, India* ***August 2023 - July 2024***
(*Unreal Engine 5, C++*)

- Solely led the programming of an unreleased project, alongside 2 designers; responsible for building the user interface, enemy AI, interaction system, UI event system, dynamic cinematics architecture, and player movement.
- Coded an event system to spawn temporary actors that trigger UI prompts, sound effects, volume changes, and damage events; removing redundancy, and streamlined the process to construct gameplay events.
- Exposed interactable actors' events to blueprints that fire upon and after interaction with the actor, enabling designer-friendly tools that allowed rapid iteration without code-level changes, reducing iteration time by **50%**.
- Designed a blackboard tree for a non-playable character (NPC); integrated idle and attack animations, player searching, and hitbox detection, creating an NPC that chases and attacks the player.
- Built the UI and the functionality for the main and in-game menus along with video, audio, and control settings.
- Implemented a save system for menu settings that would save data in real-time when a setting would change.

Wega Labs, Gameplay and UI Programmer | *Pune, India* ***July 2022 - July 2023***
(*Cocos Creator Engine, Typescript, Unity, React, GameAnalytics, YAML, and GLSL*)

- Collaborated with a team of over 10 co-workers, to help develop and launch the mobile video game "Cricinshots" (now World Cricket Premier League) currently with more than **100,000** users.
- Led the user interface's bug fixing and new feature integration tasks during the game's live-ops period; promptly fixed over 50 bugs reported by users.
- Simulated multiple mobile devices using Google Chrome's DevTools, and performed memory profiling to identify bottlenecks. Upon optimization, rendering time was decreased by **40%**.
- Iterated upon and polished the user interface, leading to a peak of over **11,000** daily active users.
- Implemented a campaign system that acted as a first-time user experience, facilitating a peak "day 1" retention of **25%**.
- Used GameAnalytics to record player behavior during gameplay; the data helped decrease the player onboarding time by **35%**.
- Supervised game developer interns, assigned tasks, and promptly solved any documentation or game engine questions.

Wega Labs, Game Developer Intern | *Pune, India* ***March 2022 - July 2022***
(*Cocos Creator Engine, Colyseus, Typescript, NodeJs, and React*)

- Created a cricket game prototype implementing interactable stadiums, map maneuverability, and stadium inspection animations, allowing the team to execute consecutive sprints on time and iterate upon new mechanics swiftly.
- Prototyped and built the UI system to display the round's information, and integrated Colyseus to visually reflect real-time changes.
- Implemented pre-downloading of assets and platform-specific texture compression, which helped reduce scene load times by **50%**.

PROJECTS

PROTOX GAME ENGINE (*OpenGL, GLFW, IMGUI, GLM*) | Repository Link

- Solely developing a game engine to recreate the basic elements of the game, "Minecraft".
- Used a Model-View-Project matrix to transform objects from their model view to the perspective view.
- Utilized Phong's lighting model to provide lighting from multiple sources to multiple objects in the scene.

INFILTRATION (*C++, Unreal Engine*) | Repository Link

- Solely developed a third-person shooter demo, implementing character movement with animations, a ray tracing-based shooting mechanism, a user interface, a health system, and a win/lose state.
- Designed an enemy AI controller integrating - movement animations, player chasing, player searching, and shooting at the player.

PROCEDURAL 3D PLANET GENERATOR (*C#, Unity*)

- Built a procedural planet generator in Unity and exposed several parameters to influence the shape of the resultant planet.
- Utilized Simplex noise to randomize the height of vertices to simulate planet-like topography.