MADHAV

Game Developer | Unreal Engine 5 | C++

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Education

B.Tech, Computer Science & Engineering — CGPA: 8.44 | JEE Main: AIR 12,610
Punjab Engineering College, Chandigarh, India — Expected Graduation: 2029

Technical Skills

Game Dev: Unreal Engine 5 (C++, Behavior Trees, Animation Blueprints), Unity (C#), Godot 4 (GDScript), Blender
Languages: C++, C#, GDScript, Python, JavaScript, HTML/CSS, Racket, Standard ML
Core CS: Object-Oriented Programming, Neural Networks (backpropagation), Interpreter Design (closures, parsing)
Currently strengthening: Data Structures & Algorithms

Projects

Unreal Engine 5 Game (C++) — *Udemy course project, extended independently* — GitHub repo | LinkedIn post

- Built in UE5 C++ following Stephen Ulibarri's Udemy course [Credential]: Actors, Pawns, Components, reflection system, line/box traces, collisions, landscape tools, destructible meshes, MetaSounds.
- Extended beyond the course scope: designed and implemented custom gameplay mechanics in C++, refactored core systems, built enemy AI with Behavior Trees, authored Animation Blueprints (Anim Graphs) and reworked the course's death animations, and scaled up the enemy roster with many additional enemies.

Stupid Rocket 3D — *Unity, C#* — Google Play

- Designed and shipped a physics-based 3D arcade game in Unity/C#, owning end-to-end production: 16 levels plus an endless mode, full ad integration and audio, **released live on Google Play**.

PECster & Heal the World — *Godot 4, Unity* — itch.io

- **PECster:** 3D game in a low poly, 1:1 recreation of the PEC campus; procedural fetch quests. [LinkedIn post]
- **Heal the World:** COVID-inspired endless runner; play as Earth fleeing the virus.

Neural Network from Scratch (C++) — *MNIST digit classifier, no ML libraries* — GitHub repo

- Built a digit classifier in pure C++ with a custom matrix library, a binary MNIST loader (endianness handling), and He weight initialization.
- Implemented forward pass and backpropagation by hand for a 784-128-10 network (ReLU + Softmax), with training, accuracy testing, and weight saving.

Graphics DSL in Racket — *Independent language-design project* — GitHub repo

- Built a 2D graphics DSL from scratch with a custom evaluator supporting closures, lexical scoping, and first-class functions; applied Programming Languages coursework to a working, runnable language.

3D Asset Packs — *Blender* — itch.io

- Proficient in modelling low poly stylised assets in Blender.

Aegis — *Surveillance simulation; Python, Pygame* — GitHub repo

- Built with a friend at a college hackathon: an agent-based simulation of surveillance and public sentiment, with 80+ autonomous NPCs driven by trust/hostility states.

Stack-Based Language Interpreter (Standard ML) — *Independent project* — GitHub repo

- Implemented tokenizing, parsing, and execution for a stack-based esoteric language, with control flow.

Relevant Coursework

- **Programming Languages (Parts A & B)** — functional programming, closures, type systems.

Leadership & Achievements

- **1st Place, Escape the Server (NMIMS)** — Cyber-forensics competition; with a team of 5, cleared a five-lock challenge (debugging, web, bash, network forensics) about 30 minutes early.
- **1st Place, Young Founder's Summit** — Technical Head; helped develop and pitch a VR education concept. [Demo]
- **Game Dev Workshop, College Coding Club** — Taught a two-part intro to game development for freshers, live-building a racing game in Godot. [Session video]