

Tarun Singh

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SUMMARY

BTech CSE (AI & ML) student with solid programming skills and a passion for learning new technologies. Enthusiastic about developing games, web apps, and AI-driven solutions through hands-on projects. Strong problem-solving ability and a collaborative mindset, aiming to grow as a versatile developer while contributing to innovative tech solutions.

SKILLS

Programming Languages: TypeScript, JavaScript, Java, C#, C, Unity, Godot, Python, Linux, Git, DSA.

Web Development: React.js, React Query, Node.js, Next.js, Express, MongoDB, PostgreSQL, HTML, CSS.

Game Development: Unity, Godot

Version Control & Systems: Git, Linux

Computer Science: Data Structures and Algorithms (DSA), Object Oriented Programming

Web Development: Frontend: React.js, React Query, Next.js, HTML, CSS

Backend: Node.js, Express

Databases: MongoDB, PostgreSQL

Deployment & Hosting : Vercel

Soft Skills: Problem-solving abilities, Team collaboration, Time management, Project management, Critical thinking, Continuous learning mindset

WORK EXPERIENCE

Full Stack Developer Intern

Dec 2024 – Feb 2025

NEW EIC

Boston, MA (Remote)

Tech Stack: React.js, Node.js, Express, REST API, MongoDB, Typescript, Material UI

[Letter of Recommendation](#)

- Resolved a critical issue with a button component by identifying and overriding an inherited CSS property from the Material UI library, enhancing user interaction.
- implemented a platform where quants can submit their proposed strategies along with the proofs and made an interface in the backend where quant admins can review these strategies and choose to either accept or reject them using API, Express and mongoose.
- Developed dialog interfaces to display detailed analytics of teaching hours and academic papers, improving data visibility for users in the frontend.
- Implemented an API to access all of the implemented strategies (both in review and processed) for user role ADMIN.
- Added a fun graphic analytic to display the progress of teachers and students in their respective courses.
- Fixed a bug where the a button in a component wasn't functioning as expected due to an inherited css property from Material UI library.
- Collaborated with a colleague to develop a framework where quants can submit strategies and then submit further step reports on these strategies. We also documented everything that was involved in this framework such as the API itself, the functions, the URL, the parameters sent in a fetch request to the backend, parameters of a mongoose query, UI in the frontend, code flow etc.
- Received a letter of recommendation from the principal engineer and co-founder of NEW EIC - Chris Pan.

PROJECTS

Project-1 Sentient Seige

Tech Stack – Unity engine, C#, Nugget Package Manager

[Portfolio](#) | [GitHub](#)

Made a 3D game called Sentient Seige for a competition based on the theme futuristic model.

- Used **Unity Engine** along with **c#** to create the whole environment of the game as well as the physics based interactions between different entities.
- Implemented an **AI based enemy system** where every enemy entity was being controlled by an AI agent with the help of AI **NavMesh** too find the best path towards the main character.
- Used already available tools in Unity to populate the environment with basic entities such as trees, stones and flowers.
- Imported 3D models for character, enemies and implemented a wide array of animations depending on appropriate situations.
- Used the **RaycasHit** method to devise a mechanism to shoot enemies and to shoot the character.
- Used **coroutines** to make sure that the game is optimized for performance.

Project-2 AI_HUB (in progress)

Tech Stack – React, Typescript, MongoDB.

[Portfolio](#) | [GitHub](#)

Created a visually appealing and responsive user friendly web app which has an extensive array of AI tools such as AI fitness plan, AI diet plan, AI code review, AI movie recommendation etc powered by Google Gemini.

- Implemented robust and reliable API for each respective AI tool.
- Created a platform in the backend to use Gemini's API to fetch responses from Gemini AI.

- Implemented an auth framework and credentials storage system using libraries such as bcrypt and mongoose respectively.
- Created a backend using express and typescript to create endpoints for API requests from the frontend.

Project-3 PiCorama

Tech Stack – Java, GIMP, Krita.

Built a game using Java.

[GitHub](#)

- Implemented **GameLoop** and **updateLoop** architecture in **Java** to enable frame-by-frame image manipulation for dynamic gameplay.
- Designed and developed different animations for player entity in **GIMP** and **Krita**.
- Implemented innovative level creation technology to streamline the design process, enabling seamless scaling and more efficient workflow .
- Engineered custom game physics from scratch, implementing virtual gravity, free fall motion, jumping mechanics, and collision detection systems
- Used Git and GitHub for version control, implementing a structured management system to track progress, maintain clarity, and monitor bugs efficiently.

EDUCATION

Degree Name: BTech in CSE (AIML)
[Sanskriti University]

Location
2022 -2026