GURVANSH SINGH KALRA

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SUMMARY

Motivated Computer Science student and aspiring game developer with hands-on experience in C++, C#, Unity, and Godot. Skilled in problem-solving and experienced in leading teams to deliver software projects from concept to implementation. Applied knowledge of machine learning (TensorFlow.js) and full-stack development (Next.js, React, Tailwind) through hackathons and projects. Passionate about innovative game design and building systems that combine creativity with technical expertise.

EDUCATION

B.Tech in Computer Science and Technology (Core)

Aug 2024- Present

SRM Institute Of Science and Technology (Current Year - 2nd)

- 1st sem SGPA - 9.77
- 2nd sem SGPA - 10

12th Grade

April 2022 - May 2023

Basava International School, Dwarka, New Delhi

- Percentage - 86.83% (CBSE PCM+CS)
- Cultural Sectary (Core Member) and conducted events like Teacher's Day and Annual Day.

10th Grade

April 2020 - August 2021

Basava International School, Dwarka, New Delhi

- Percentage - 92%
- Actively took part in competitive activities and online activities.

SKILLS

- **Technical Skills**
  - **Game Development:** Proficient in Unity (C#) and Godot, with experience building 2D mechanics, custom game loops, and rapid prototypes.
  - **Programming & Tools: S**olid foundation in C and C++, with Git for version control and VS Code as primary dev environment.
  - **Core CS Knowledge:** Strong grasp of Object-Oriented Programming (OOP) and Data Structures & Algorithms (DSA), applying concepts in game and systems development.
  - **Machine Learning & AI:** Practical experience with TensorFlow.js sequential neural networks and Google Gemini LLM API integration.
  - **Web Development:** Built and deployed full-stack applications with Next.js, React, Tailwind CSS, and API route integrations.
  - **Cloud & Systems:** AWS Cloud Foundations and AWS Data Engineering certified; familiar with cloud workflows, data pipelines, and Vercel deployment.

- **Creative & Interpersonal Skills**
  - **Design:** Basic pixel art creation and integration into game assets.
  - **Collaboration:** Experienced in teamwork and leadership through hackathons, game jams, and ideathons.
  - **Problem-Solving:** Adept at breaking down complex problems into implementable solutions under time constraints.

EXPERIENCE & ACTIVITIES

- **Game Development Associate, Next Tech Lab, SRM** **2023 - Present**
  - Contributing to game development projects within the student-led innovation lab, focusing on design, implementation, and testing of interactive systems. Collaborating with peers to explore experimental mechanics and emerging technologies in games.

- **Hackathon Participant, SRM Aaruush Hack Summit 6.0** **September 2025**
  - Led a 5-member team in a 36-hour hackathon; selected among the Top 50 out of 200+ for developing Hero Squad Optimizer, a dual-ML web app combining predictive modeling and generative strategy, showcasing innovation, leadership, and technical depth.

- **Ideathon Finalist, SRM Institute of Science and Technology** **2023**
  - Selected among the top 7 teams out of 50+ participants for an innovative project proposal in a campus-wide ideation challenge, showcasing creativity, teamwork, and problem-solving under time constraints.

PROJECTS

Hero Squad Optimizer

- Developed a web-based party optimization tool for Dungeons & Dragons, combining predictive ML with generative strategy systems.
- Engineered a dual-model architecture: TensorFlow.js sequential neural network predicting encounter success rates, integrated with Google Gemini LLM for class-specific, turn-based strategy recommendations.
- Designed and implemented a stat allocation and squad builder system supporting up to four customizable characters with six core attributes.
- Built a Next.js + React frontend for dynamic party creation and encounter selection, ensuring intuitive interaction under hackathon time constraints.
- Implemented Next.js API routes to handle backend ML integration, including model training and inference on a custom dataset of party outcomes.
- Coordinated a 5-member team during a 36-hour hackathon sprint, balancing backend integration, frontend polish, and technical presentation.

Slither Fade

- Developed a Snake-inspired game in Unity (C#) featuring an innovative mechanic where the snake shrinks every 7 seconds, creating a unique time-based survival challenge.
- Designed and integrated dual food systems: regular food for growth and “safe food” that extends survival time, adding strategic depth to gameplay.
- Engineered core systems including timed shrink events, collision handling, and dynamic game state management.
- Balanced and refined mechanics through iterative playtesting, ensuring engaging difficulty progression and replayability.
- Utilized Git and GitHub for version control, enabling structured development and project management.

Gem Catcher

- Developed a 2D game in Godot using C#, implementing core mechanics such as collision detection, object spawning, and player movement.
- Optimized gameplay loop for simplicity and replayability, ensuring responsive controls and fast restart flow.
- Managed source files and project structure for maintainability, using version control (Git) to track iterations.
- Packaged and documented the project for reproducibility, providing clear setup instructions for both source builds and executables.

Twisteeper

- Designed and implemented a Minesweeper variant in Godot (GDScript), introducing innovative mechanics such as rotating boards and immovable flagged cells.
- Completed the project within a 2-day game development challenge, demonstrating rapid prototyping, time management, and problem-solving under constraints.
- Developed pixel art and integrated open-source sound assets, ensuring cohesive visual and audio design.
- Engineered core gameplay systems including grid generation, mine placement, win/lose detection, and rotation mechanics.
- Deployed cross-platform builds (Windows, Linux) and documented installation and play instructions for accessibility.

CERTIFICATIONS

Unity Essentials Pathway by Unity — **Verified on Credly**

AWS Cloud Foundations by Amazon Web Services — **Verified on Credly**

AWS Data Engineering by Amazon Web Services — **Verified on Credly**

NPTEL - Fundamentals of OOPS — **Verified**

INTERESTS

- **Game Development & Design**: Exploring indie titles, experimental mechanics, and rapid prototyping.
- **Music Exploration:** Passionate listener with diverse taste.
- **Media & Storytelling**: Movies, YouTube, and narrative-driven games as sources of creativity and inspiration.
- **Curiosity-Driven Learning**: Reading research papers outside core CS, ranging from psychology to physics.

LANGUAGES

- Hindi — Native (read, write, speak)
- English — Fluent (read, write, speak)
- Punjabi — Conversational (speak)