SHIVAM KUMAR | 24AR10034

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EDUCATION

Year	Degree/Exam	Institute	GPA/Marks
2029	B.Arch	IIT Kharagpur	8
2023	XIIth Board (CBSE)	MKD Public School	83.4%
2021	Xth Board (CBSE)	MKD Public School	90%

PROJECTS

Langton's Ant Simulation (Multi-Agent Cellular Automata)   **Sept'24-Oct'24**
- Simulated Langton's Ant with two agents with stochastic pheromone based decision rules utilizing Pygame.
- Simulated emergent behavior from rule based ant movement in a time dynamically updating grid.
- Used local probability weights and some random behavior modifiers to support AI-like decision-making under constraints.
- Real-time performance obtained through a light-weight optimized grid representation and low-latency visualization.

CTRL Campus – Campus SuperApp Ecosystem   **Mar'25 - Present**
- Created a modular web platform combining tools like professor info, society posts, vendor listings, and student utilities.
- Developed mini-games and leaderboards to engage users, with department and hall level performance tracking.
- Developed scalable architecture for societies, campus events, and professor-student interaction tools.
- Designed with community impact in mind — building a "digital campus layer" to simplify and gamify college life.

AI-based 2048 Game Solver with GUI   **Sept'24-Oct'24**
- Created a fully interactive 2048 game with a custom GUI using Tkinter and an AI agent using Monte Carlo Tree Search.
- Simulated thousands of random playouts per move to select the best possible direction at each move.
- Created a state evaluation and transition model that accounted for multiple possible states to random tiles.
- Obtained consistently high tile counts through optimal probabilistic move selection and state space pruning.

CTRL₹ – Personal Finance Tracking App (Flutter, Dart)   **Apr'25 - May'25**
- Developed an offline-first budgeting app that automatically updates daily, weekly, and monthly limits for Gen Z users.
- Added support for dynamic category input with dropdowns, spending history, CSV export to understand habits.
- Designed seamless UI/UX for easy, fast entry with persistent storage using local DB that survives reinstalls.
- Positioned as a finance habit-forming product that uses a playful tone, strong visual identity, and onboarding tour.

COMPETITION/CONFERENCE

Finalist, Op-Ed Competition | Prajatantra 2024 (by Praja Foundation)   **Oct'24**
- Selected as a national finalist in the Op-Ed Writing Competition at Prajatantra 2024, Premier youth governance festival.
- Recognized among top civic writers for insightful policy-oriented opinion writing on urban governance.
- Showcased analytical thinking and written advocacy on democratic participation and local governance reforms.

SKILLS AND EXPERTISE

Programming Languages : C/C++ | Python | SQL | Java| ReactJs | Front End Development | App Development
Softwares: Canva | AutoCAD |Figma |PowerPoint |PowerBI |TableAU | Adobe Softwares
MIT: Probability and statistics, Linear Algebra | **Udemy**: Primer Quant Trading , Data Science and Machine Learning

AWARDS AND ACHIEVEMENTS

- Qualified for both stages of NTSE, among India's most prestigious national-level talent scholarship examinations.
- Secured a rank under 20K in JEE Advanced 2024.
- Stood among the top 2 percent of candidates among 15 Lakh+ candidates in JEE Mains 2024.

EXTRA CURRICULAR ACTIVITIES

- Represented IIT Kharagpur in the official college cricket team at inter-college and zonal tournaments.
- Active poet with performed pieces in college events and literary platforms.
- Cadet in NCC Bengal EME Roy Unit, completed training in discipline, drills, and leadership activities.
- Skilled in video editing; created content for college fests, clubs, and online publications.