

VIVEK KUMAR

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Profile Summary

A passionate and creative problem-solver with a **Minor in CSE** from **IIT Dharwad**, blending mathematical aptitude with software expertise. **PRMO & RMO qualified** and **Hyundai Hope Scholarship** winner. Proficient in **Data Structures, Algorithms, and Full Stack Development**, seeking to build scalable software solutions.

Education

Indian Institute of Technology Dharwad	B.Tech (Civil) — Minor in CSE — CPI: 8.0	2022–2026
Manas Bharti Educational Complex, CBSE	Class XII — 81%	2019–2021
Delhi Public School, CBSE	Class X — 95.6%	2013–2019

Experience

Coding Prompt Engineer | *Remotasks, Remote* 2024

- Contributed to the **Ambassador Cafe** project, evaluating LLM-generated code for functionality and completeness.
- Executed a **debug-and-fix workflow** by identifying syntax/logic errors in model outputs and rewriting code for correctness.
- Applied **RLHF** strategies to score prompt–response pairs, maintaining **80% accuracy** across evaluation benchmarks.

R&D Intern – Self-Healing Material Analysis, IIT Dharwad, India (Report) 2025

- Executed structured testing and statistical analysis to evaluate material performance under controlled loading.
- Quantified a **37% improvement** in post-recovery strength using formula-driven data modeling and comparative study.
- Compiled comprehensive research documentation, deriving actionable insights and conclusions from experimental datasets.

Projects

Five in a Row Game (Group Project) | Python, Pygame, NumPy, Minimax, MCTS 2024

- Built a strategy game using **Python** and **Pygame** with customizable board sizes and difficulty levels.
- Implemented **Minimax** and **Alpha-Beta Pruning** algorithms to optimize AI decision-making up to depth 6.
- Integrated **Monte Carlo Tree Search (MCTS)** with UCT to simulate 200 scenarios per turn for adaptive gameplay.
- Engineered a **NumPy**-based evaluation logic to efficiently detect horizontal, vertical, and diagonal winning patterns.

Peer-to-Peer VoIP | Python, Sockets, PyAudio, TCP, UDP, Multithreading 2025

- Developed a **decentralized P2P VoIP system** for voice calls using **Python**, eliminating dependency on a central server.
- Engineered **low-latency audio streaming** via **UDP** and **PyAudio**, leveraging **multithreading** for concurrent call handling.
- Implemented dynamic call management and peer-to-peer connection handling for robust, uninterrupted communication.
- Built a **custom Tracker Server** to manage peer registration and **active user discovery** with minimal latency.

Simon Memory Game | HTML, CSS, JS, jQuery, DOM [Live Demo](#) | 2025

- Engineered a multi-screen interface with **custom input handling** for a personalized experience.
- Applied **DOM manipulation** to track real-time levels, calculate scores, and render dynamic game-over states.
- Architected game mechanics using **jQuery** for sequence generation, audio-visual feedback, and state management.

WeatherWise | ReactJS, Vite, REST API, HTML, CSS3 [Live Demo](#) | 2025

- Developed an interactive weather forecasting app using **React 19** and **Vite** that consumes the **OpenWeatherMap REST API** for real-time data.
- Implemented asynchronous data fetching to display live temperature, humidity, and wind speed for any city worldwide.
- Optimized application performance and build time using Vite, ensuring a lightweight and responsive user experience.

Skills & Interests

- Programming Languages:** C, C++, Python, JavaScript, HTML, CSS
- Frameworks & Libraries:** Node.js, Express.js, React, jQuery, EJS, Bootstrap
- Tools & Platforms:** LaTeX, BASH, Git, GitHub, Beamer.
- Databases & Data Analytics:** SQL, Pandas, NumPy, Matplotlib, Tableau, Excel.
- Professional & Interpersonal Skills:** Time Management, Teamwork, Communication, Leadership
- Relevant Courses:** Data Structures and Algorithms, Discrete Structures, Computer Networks, Artificial Intelligence, Design and Analysis of Algorithms, System Software Lab, DBMS, Web Development.

Positions of Responsibility

Class Representative | IIT Dharwad – Liaised between faculty and students Apr 2024 – Present

Joint Secretary | CEA – Organized technical talks and student activities Nov 2024 – Present

Achievements

- Maths Olympiad:** Qualified PRMO, RMO (secured 7th rank in South Bihar), conducted by HBCSE, Govt. of India.
- Hyundai Hope Scholarship Winner (2025):** Awarded INR 62,000 for innovative engineering idea on Sustainable mobility.
- Awards and Recognitions:** Felicitated with INR 15,000 cheque, scholarships, golden plaque, medals, and certificates.