Vivek Kumar

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B.Tech - Computer Science and Engineering
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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Guwahati	7.36 (Current)	2022-Present
Senior Secondary	CBSE Board	93.6%	2022
Secondary	CBSE Board	94.4%	2020

PROJECTS

- **Decentralized Voting System Using Ethereum Blockchain** *April 2024*
  Independent Project Github
  - Built a decentralized voting application leveraging **Ethereum Blockchain** for transparent and tamper-proof election records.
  - Designed smart contracts using **Solidity** and deployed locally via **Truffle** and **Ganache**.
  - Implemented a secure backend API with **Python** and **FastAPI**, integrated with **MySQL** for voter management and authentication.
  - Used **JWT** tokens to enable secure login and role-based access control for voters and administrators.
  - Enabled users to vote anonymously using **Metamask** and custom blockchain transactions.
  - Developed a responsive frontend using **HTML**, **CSS**, and **JavaScript**, bundled with **Browserify**.
  - Integrated admin panel functionalities to manage candidates, monitor votes, and set voting windows.

- **AI Snake Game** *May 2024*
  Even Semester Project, Coding Club Github
  - Developed an AI snake game using **reinforcement learning** with **Python** and **PyTorch**.
  - Implemented dynamic exploration and exploitation strategy using **Q-values** predicted by a neural network, with visualization using **Matplotlib**.

- **Jarvis-AI** *Jan 2025*
  Personal Project Github
  - Developed a voice-activated AI desktop assistant using **Python**, **OpenAI's GPT model**, and **speech recognition** libraries for natural conversation.
  - Implemented dynamic command processing to handle **web navigation**, **system operations**, and AI-driven conversations with contextual memory.
  - Integrated **speech-to-text** and **text-to-speech** modules supporting custom commands, time reporting, and app launching using the **os** module.

- **Amazon Product Scraper and Analyzer** *April 2025*
  Personal Project Github
  - Developed a robust web scraping system using **Python**, **BeautifulSoup**, and **Requests** to extract product data from Amazon.
  - Implemented sophisticated data cleaning, analysis, and visualization capabilities with **Pandas**, **Matplotlib**, and **Seaborn**.
  - Created comprehensive analytics for brand performance, price-rating correlation, review distribution, and sponsored vs. organic content comparison.
  - Generated interactive HTML reports with statistical insights and data visualizations for effective presentation.

- **Multiplayer Poker Game (GGPoker)** *February 2024*
  Personal Project Github
  - Built a real-time multiplayer poker game using **Go (Golang)** and **WebSockets**, focusing on concurrency and low-latency communication.
  - Implemented core poker game logic, including dealing, betting rounds, turn-based mechanics, and game state synchronization.
  - Utilized Go's **goroutines** and **channels** to manage asynchronous client connections and game loop execution.
  - Designed a minimalistic frontend for testing with JSON-based communication, making it easy to extend or integrate with a graphical interface.
  - Ensured robustness by handling edge cases like client disconnections, invalid actions, and timeout scenarios gracefully.

- **Flight-management system** *Ongoing*
  Even Semester Project, Coding Club Github
  - Developed using **MongoDB, Express.js, React.js, Node.js** for a robust and secure platform.
  - Includes user management, flight search and booking, QR code verification, admin panel, and responsive design.
  - Ensured secure authentication with **JWT tokens**, password encryption, and integrated **Stripe** for secure payment processing.

ACHIEVEMENTS

- **Joint Entrance Exam 2022(Advanced):** Secured All India **Rank 1454** out of 150,000 students.
- **Joint Entrance Exam 2022(Mains):** Secured All India **Rank 370** out of 1 million students.
- **MA101:** Achieved **40th rank** in institute in **real analysis** course during the first year.
- **Codeforces: Pupil** at **Codeforces** with maximum Rating of **1353**.

TECHNICAL SKILLS

- **Programming**: C/C++, Javascript*, Python
- **Backend/Database**: MongoDB, MySQL, NodeJs*
- **Blockchain**: Solidity, Golang*
- **Operating system**: Windows, Ubuntu
- **Miscellaneous**: React.js, Socket.IO, HTML, CSS*

* Elementary proficiency

KEY COURSES TAKEN

- **Computer Science**: Operating Systems(Lab and Theory), Computer Organisation and Architecture, Data structures & Algorithms(Lab and Theory), Database Management Systems (Lab and Theory), Digital Design.
- **Mathematics**: Discrete Mathematics, Number Theory, Basic Calculus, Linear Algebra.

EXTRACURRICULARS

- **Hackathon Volunteer** at Research and Industrial Conclave,IITG.
- **PR and Branding Team Volunteer** at Research and Industrial Conclave,IITG.