Nihal Kumar

Software Engineer — Backend Developer — AI/ML Enthusiast
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ABOUT ME

Computer Science student with experience in backend development, data processing, and machine learning. Built web platforms using Node.js, React, and PostgreSQL, and worked on deep learning workflows involving TensorFlow and EEG data. Familiar with tools like CI/CD, Docker, and AWS EC2. Solid understanding of computer science principles and practical experience integrating AI and ML systems.

WORK EXPERIENCE

Software Development Intern — XORIT **April 2025 – May 2025**

- Developed an animated spin-wheel reward system with real-time prize delivery
- Built a mobile-responsive multi-link dashboard using React and TailwindCSS; deployed via CI/CD pipeline.
- Implemented JWT-based authentication with OAuth 2.0 and RBAC; collaborated with 2 developers to modularize backend logic.

TECHNICAL PROJECTS

Online Code Judge Platform — Full-Stack Developer **[GitHub]**

Stack: React.js, Node.js, PostgreSQL, Judge0, AWS EC2, Render, Vercel, NeonDB

- Developed a full-stack judge system supporting real-time code execution with Judge0, self hosted on AWs EC2.
- Designed scalable REST APIs and RBAC for user playlists and admin-level content management.
- Deployed decoupled frontend/backend architecture to Vercel and Render

Real-Time EEG Seizure Detection — ML Developer **[GitHub]**

Stack: Python, TensorFlow, FastICA, Streamlit, NumPy

- Built a real-time seizure prediction system using EEG data and a deep learning model combining P3D-CNN, Bi-directional ConvLSTM, and Attention mechanisms.
- Applied advanced preprocessing including bandpass filtering and ICA for artifact rejection; simulated noisy EEG segments to improve model robustness.
- Integrated trained model into a Streamlit dashboard for live EEG signal visualization and prediction, enabling end-to-end user interaction.

Spin Wheel Rewards Platform — Full-Stack Developer **[GitHub]**

Stack: React.js, Node.js, MongoDB, TailwindCSS, JWT

- Created reward logic using weighted probability and cooldown timers to ensure fairness and engagement.
- Managed prize CRUD operations and access control via RBAC-secured endpoints.
- Logged activity data for planned dashboard integration

SKILLS

- **Languages:** JavaScript (ES6+), Python, C++, SQL
- **Frameworks:** React.js, Tailwind CSS, Express.js
- **Backend:** Node.js, REST APIs, JWT, OAuth 2.0, RBAC
- **Databases:** PostgreSQL, MongoDB, MySQL, Firebase
- **Cloud/DevOps:** AWS EC2, Docker, GitHub Actions, CI/CD
- **AI/ML:** TensorFlow, ConvLSTM, P3D-CNN, NumPy
- **Tools:** Git, Postman, Prisma ORM, Linux (Ubuntu/Mint)

ACHIEVEMENTS

- 5-star coder on HackerRank in Problem Solving domain.
- Pre-finalist out of 1000+ teams in Unisys National Innovation Program [Certificate].

EDUCATION

B.E. in Artificial Intelligence and Machine Learning 2022–2026
MS Ramaiah Institute of Technology, Bengaluru, India
CGPA: **8.20**