Nihal Kumar

Software Engineer — Backend Developer — AI/ML Enthusiast
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PROFESSIONAL SUMMARY

Versatile software engineer with a strong foundation in backend systems, data pipelines, and machine learning. Experienced in developing scalable platforms using Node.js, React, and PostgreSQL; and implementing deep learning pipelines using TensorFlow and real-time EEG signal processing. Proficient with CI/CD, Docker, cloud platforms (AWS EC2), and DevOps tooling. Strong problem-solving skills backed by CS fundamentals and hands-on AI/ML integration experience.

WORK EXPERIENCE

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

- Developed an animated spin-wheel reward system with real-time prize delivery, boosting user engagement by 25%.
- 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 for 5+ languages with Judge0 and Webhooks.
- Designed scalable REST APIs and RBAC for user playlists and admin-level content management.
- Deployed decoupled frontend/backend architecture to Vercel and Render; monitored uptime and performance.

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

Stack: Python, TensorFlow, FastICA, Streamlit, NumPy, SciPy

- Built a real-time seizure prediction system using EEG data and a deep learning model combining P3D-CNN, Bidirectional 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; improved backend latency by 30% after optimizations.

SKILLS

- **Languages:** JavaScript (ES6+), Python, C++, SQL
- **Frameworks:** React.js, Tailwind CSS, Express.js, Streamlit
- **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.
- Top 8 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**