

ANSHUMAN NAYAK

Senior Full-Stack Engineer · AI/ML Engineer

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PROFESSIONAL SUMMARY

Full-Stack Engineer and AI/ML specialist with 6 years of experience building high-scale production systems across healthcare, agri-tech, and e-commerce. Expertise spans LLM-powered products (GPT, Claude, Gemini), multi-agent orchestration, real-time ETL pipelines, and payment infrastructure. IIT Kharagpur postgraduate with 7 peer-reviewed publications (129+ citations) and a granted patent in smartphone-based soil sensing.

EXPERIENCE

Zeno Health · Software Engineer II Remote | Feb 2024 – Present

- Engineered a high-performance payment gateway processing 15,000+ daily transactions with 99.9% uptime and sub-100ms latency.
- Architected scalable ETL pipelines managing monthly migration of 10B+ records, optimizing data integrity and processing throughput.
- Deployed enterprise-scale NLP chatbots powered by GPT-4 handling 1M+ customer inquiries, significantly reducing manual support volume.
- Orchestrated autonomous multi-agent systems using GPT-4, Gemini-2, and Claude Sonnet 3.5 to automate complex product development workflows.
- Led and mentored a cross-functional team of 10 developers across the full SDLC, aligning deliverables with strategic business objectives.
- Reduced technical debt by implementing self-healing AI agents for automated code review, bug detection, and proactive resolution.

Micro1 AI · Human Data Manager (Consultancy) Remote | Aug 2025 – Present

- Curated and validated high-quality full-stack code repositories across Node.js, React, Python, Go, and Ruby to optimize LLM training datasets.
- Led a cross-functional team of 53 Subject Matter Experts across Data Science, Healthcare, Physics, and Executive Leadership domains.
- Engineered organic data ingestion pipelines prioritizing human-generated content over synthetic data, improving model reasoning and AGI alignment.
- Established rigorous multi-stage data quality review cycles and HITL workflows to enhance model alignment and code fidelity.

Carelon Global Solutions LLP · Software Engineer Gurugram, India | Jul 2022 – Feb 2024

- Led creation of a low-code platform for Data API Gateway, cutting development time from 14 days to 2 hours via reusable templates.
- Engineered a fault-tolerant, scalable core supporting 2,000+ data scientists and 5+ production applications simultaneously.
- Managed end-to-end data model lifecycle and implemented effective alerting systems and model pipeline monitoring.

NexVerse Pvt. Ltd. · Full-Stack Developer Bhubaneswar, India | Jan 2019 – Mar 2022

- Developed a Cordova-based hybrid social media application serving 8,000+ users and 15+ businesses.
- Built server-side infrastructure with Node.js and MongoDB; integrated Push Notifications, In-App Messaging, A/B Testing, and Analytics.
- Implemented AWS EC2 autoscaling and optimized video processing pipeline for superior user experience.

SKILLS

Languages: Python, JavaScript, TypeScript, Go, C

AI / LLM Tools: GPT, Claude, Gemini, LangGraph, Multi-Agent Systems, RAG, LangChain, GitHub Copilot, Cursor

Frameworks: Node.js, Express, React, Next.js, Django, Flask, GraphQL, REST API, TensorFlow, OpenCV

Databases: PostgreSQL, MySQL, MongoDB, Firebase, Snowflake

Platforms & Tools: AWS (EC2, EKS, Amplify, RDS), Docker, Nginx, Git, Jira

EDUCATION

IIT Kharagpur

Kharagpur, India | 2020 – 2022

M.Tech, Agricultural Systems & Management · CGPA: 9.51 / 10 · All India Rank 67 — GATE 2020

Orissa University of Agriculture and Technology

Bhubaneswar, India | 2016 – 2020

B.Tech, Agricultural Engineering · CGPA: 8.50 / 10

PROJECTS

[Fusion CMS](#) — TypeScript, Next.js, GraphQL, REST, NoSQL, SQL

- Auto-generates high-quality GraphQL and REST backends from SQL/NoSQL sources with zero explicit coding, cutting backend development time significantly.
- Deploys as monolith or microservice with middleware customization. Frontend built on Next.js for scalability and performance.

[SpectraML](#) — Django, Python, Plotly, D3.js, Jupyter

- Open-source AutoML platform for spectroscopic data — automates preprocessing, model selection, PCA/t-SNE visualizations, and evaluation.
- Full-stack web app with real-time experimentation, reproducible Jupyter pipelines, and community documentation for academic collaboration.

[Mobile Plant Disease Detector](#) — JavaScript, Python, TensorFlow.js, WebAssembly, Ionic

- Offline-capable app for Indian farmers to identify plant diseases via smartphone camera using TensorFlow.js and OpenCV.js deep learning.
- Research idea published in Elsevier's Smart Agricultural Technology journal.

PUBLICATIONS (7 PAPERS · 129+ CITATIONS)

- Application of smartphone-image processing and transfer learning for rice disease and nutrient deficiency detection. *Smart Agricultural Technology* 4, 100195, 2023
- A smartphone-integrated imaging device for measuring nitrate and phosphate in soil and water samples. *Microchemical Journal* 193, 109042, 2023
- A smartphone-enabled imaging device for chromotropic acid-based measurement of nitrate in soil samples. *Sensors* 23 (17), 7345, 2023
- Digital soil mapping of available phosphorus using a smartphone-integrated RGB imaging device. *Smart Agricultural Technology* 9, 100591, 2024
- Soil fertility prediction using combined USB-microscope, auxiliary variables, and portable XRF spectrometry. *Soil Advances* 2, 100016, 2024
- Enhancing soil organic carbon estimation with generative AI and Nix color sensor. *Scientific Reports* 15 (1), 40628, 2025
- Combining proximal and remote sensors for regional soil characterization in rural Haiti. *Geoderma Regional*, e01030, 2025

HONORS & AWARDS

- Patent granted — smartphone-based detection of Nitrate and Phosphate in water and soil samples.
- Recognized Scholar in Digital Agricultural Technology — GSA, Kyoto, Japan.
- Silver Elite Award in Data Analytics — IIT Roorkee (NPTEL).
- All India Rank 67 — GATE 2020 (Agricultural Engineering).

CERTIFICATIONS

- GraphQL Developer — Associate · Apollo
- Meta Back-End Developer · Meta
- Data Analytics with Python · NPTEL (Silver Elite)
- JavaScript Algorithms and Data Structures · FreeCodeCamp
- GIS and Its Application with Python · NAHEP