

Aman Chandra H

Full-Stack Software Developer · Machine Learning Researcher

amanchandrah@gmail.com | +91 79753 60103 | github.com/amanchandrah895 | amanchandrah.vercel.app | linkedin.com/in/aman-chandra-h

Summary

Full-stack developer and CSE student who ships production web applications and clinical machine-learning systems end to end. Fluent across React/Node/MongoDB product work, deep-learning research, and IoT prototyping. Springer- and IEEE-published researcher with eight papers (two published, four accepted, two submitted) spanning clinical ML reliability, model calibration, and LLM systems. Seeking software engineering roles where product velocity meets research-grade rigor.

Education

RV University, Bengaluru

2023 – Present

B.Tech in Computer Science and Engineering · Minor in Innovation, Entrepreneurship & Product Development

Experience

Machine Learning Intern — Centre of Neurosciences, Indian Institute of Science (IISc) May 2026 – Present

- Improving generalization of the Scratcher behavioral-analysis framework across coat colours and experimental conditions (full-stack app + YOLOv11 detectors detailed under Projects).
- Building machine-learning and computer-vision pipelines for automated analysis of animal behavioral data.
- Prototyping edge-AI inference on the NVIDIA Jetson Xavier NX for real-time behavior monitoring.

Freelance Full-Stack Developer

Dec 2025 – Present

- Build and ship client-facing web applications end to end with React, Node.js, and MongoDB — from stakeholder requirements to live deployment.
- Own frontend, backend APIs, SEO/AEO optimization, and deployment preparation, delivering on real timelines.

Machine Learning Intern — Ganglia Technologies (incubated at MAHE Manipal)

June – August 2025

- Built cataract-severity detection models using YOLO and Grad-CAM, with preprocessing, evaluation, and comparative analysis on clinical imaging data.
- Contributed literature surveys and research workflows toward a healthcare-AI review submission.

Research Intern — Centre for IoT & Edge Computing, RV University

June – August 2024

- Designed a non-contact IV-fluid monitoring system using capacitive sensing, integrating sensor hardware, microcontroller logic, and IoT-based alerting for real-time monitoring.
- Co-authored a Springer CCIS publication based on the prototype.

Technical Skills

Languages: Python, JavaScript, TypeScript, Java, C, C++, SQL

Frontend: React.js, Next.js, Tailwind CSS, HTML5, CSS3

Backend: Node.js, Express.js, REST APIs

Databases: MongoDB, MySQL, Firebase Firestore

Cloud & DevOps: Docker, Google Cloud Platform, Firebase, Git, GitHub Actions

Machine Learning: PyTorch, TensorFlow, Scikit-learn, XGBoost, Pandas, NumPy, Hugging Face

LLM / RAG: LangChain, ChromaDB, Ollama, Sentence-Transformers

Tools: Linux, Postman, LaTeX

Projects

Scratcher — Automated Rodent Scratching-Behaviour Analysis

BarikLab, Centre for Neuroscience, IISc

- Built a full-stack web app that quantifies mouse scratching from session video using custom-trained coat-colour-specific YOLOv11 detectors, replacing hours of manual frame scoring with a one-click detect → analyse → plot → report pipeline — per-second behaviour timelines, bout statistics, and 300-dpi publication figures.
- FastAPI backend with an async job queue and a staged CV pipeline (detection → majority-vote / hysteresis temporal filtering → bout extraction) plus Excel/CSV/PDF export; dependency-free vanilla-JS SPA, containerised for Docker / Render / HF Spaces with a self-bootstrapping Windows launcher.

The Gut Care — Healthcare Appointment Platform (live)

React, Node.js, MongoDB

- Built a production platform live and in active use by a senior gastroenterologist for patient bookings across multiple hospitals and a private clinic, on a fully customizable role-based booking database — block any slot or restructure whole schedules on demand.
- Responsive React patient interfaces backed by Node.js and MongoDB services; optimized for SEO and AEO discoverability.

- Building an internal, AI-assisted guest-handling and request system for Paradox (a large-scale fest) with role-based workflows for organizers, coordinators, volunteers, and management, backed by Firebase Auth/Firestore for secure multi-user access.

Eventify — Event Management Platform (live)

React, Node.js, MongoDB

- Built a full-stack platform for event creation, ticketing, registrations, and attendee management, with REST APIs, authentication flows, and a component-driven React frontend.

PlotLab — No-Code Scientific Figure Generator

Python, FastAPI, matplotlib

- Built a locally-hosted, offline-first tool that turns a spreadsheet into journal-ready SVG/PDF/PNG figures across 29 plot types, each with an auto-selected statistical test and a reproducible Python script.
- Designed a schema-driven FastAPI backend (~3,500 lines) where one registry module introspects plotting-library signatures at import time, generating the entire type-safe column-mapping UI with zero per-plot frontend code.

NOMOS — Legal RAG Framework for Indian Law

React, Flask, LangChain, Llama 3.2

- Built a privacy-preserving legal QA system over Indian statutory corpora using local LLM inference, with ChromaDB retrieval and sentence-transformer embeddings prioritizing citation grounding.

Genreize — Music Genre Classification (live)

PyTorch, TorchAudio, HuBERT

- Built a deep-learning platform for automatic music genre classification using HuBERT representations, with TorchAudio preprocessing and inference/prediction-visualization pipelines.

Research & Publications

Published

1. Aman Chandra H, N. Das, S. Anand, A. Gopinath, K.S. Nidhi, M.J. Vidya. “Intravenous Bag Monitoring and Alert System — A Prototype.” *Springer CCIS*, ICBEST 2025. [Springer]
2. “Severity-Weighted Calibration Error for Reliability Assessment Under Outcome-Severity Imbalance.” *IEEE Access* (Q1, IF 4.2, 2026). DOI: [10.1109/ACCESS.2026.3717951](https://doi.org/10.1109/ACCESS.2026.3717951)

Published — ICETCI 2026, Mahindra University (presented Aug 19–22, 2026; under publication, IEEE Xplore)

3. “NOMOS: A Retrieval-Augmented Generation Framework for Jurisdiction-Specific Legal Question Answering over Indian Statutory Corpora.”
4. “Prevalence Shift and ICU Mortality Miscalibration Across Institutions.” [preprint]
5. “Language as a Hidden Variable: Measuring Behavioral Divergence in Multilingual LLMs.” [preprint]

Accepted — ICAIHC 2026, NIT Raipur

6. “Clinical Risk-Weighted Evaluation of ICU Mortality Prediction Models on MIMIC-IV.” 4th International Conference on Ambient Intelligence in Health Care (ICAIHC-2026). Paper ID: 469.

Submitted

7. “Does Model Compression Amplify Clinical Bias? A Subgroup Fairness Audit of Quantized ICU Risk Models on MIMIC-IV.” Submitted to IEEE INDICON 2025.
8. “Graph-Based Polypharmacy Risk Networks for Adverse Event Prediction in ICU Patients: A MIMIC-IV Analysis.” Submitted to IEEE DELCON, BITS Pilani.

Under Review

9. “Severity-Aware Evaluation of ICU Mortality Prediction Models Using Risk-Weighted Error Metrics (RWEM).” *BMC Medical Informatics and Decision Making* (Q1, IF 5.5). [preprint]

Leadership & Community

Super-Coordinator, Outreach — Paradox 2025

2025

- Led technical operations and outreach across multidisciplinary student teams for a large-scale fest.
- Invited 250+ of India’s top entrepreneurs, scientists, and professors as guests and speakers.

Head of Technicals — The Representatives Club, RV University

Lead technical operations and digital initiatives for the university’s student representative body.

Event Head, Generative AI — Margazhi 2025

2025

- Organized a Generative AI track with 300+ participants, featuring India’s top AI artists, including a Vogue-featured creator.

Achievements & Entrepreneurship

- **Grand Finale Winner, Manthan 2024 (FKCCI)** — Top 5 of 1,000+ participants; INR 1,00,000 in awards.
- **Runner-Up, Idea2POC** — Elevate, Startup Karnataka.
- **Co-Founder, Panda Scoop** — a GI-inspired dessert concept; Manthan 2024 Grand Finalist.