

Madhavendranath S

+91-9846411357 | madhavendranaths@gmail.com | [LinkedIn](#) | [GitHub](#)

PROFESSIONAL SUMMARY

AI & Data Science student with expertise in machine learning research and full-stack development. Built production applications using Next.js, React, TypeScript, and Python. Developed LSTM-based clustering models achieving 93% performance improvement on healthcare data. Proficient in PyTorch, Node.js, and scalable system design. Seeking roles in ML/AI engineering or full-stack development.

EDUCATION

Indian Institute of Information Technology Kottayam <i>B.Tech in Artificial Intelligence and Data Science – CGPA: 8.36/10</i>	Aug 2023 – Present <i>Pala, Kerala</i>
Dayapuram Residential School <i>Higher Secondary Education – 96.8%</i>	Aug 2020 – Mar 2022 <i>Calicut, Kerala</i>

EXPERIENCE

Machine Learning Research Intern <i>National Institute of Technology Calicut</i>	May 2025 – Jun 2025 <i>Calicut, Kerala</i>
<ul style="list-style-type: none">Clustered 40,000+ patient records from MIMIC-IV dataset using LSTM Autoencoder, GMM, and custom sequential clustering for personalized medicine applications.Achieved 93% improvement in silhouette score over baseline methods through temporal sequence modeling.Engineered data preprocessing pipeline transforming episodic healthcare records into sequential representations.Tech: Python, PyTorch, scikit-learn, Pandas, NumPy, Matplotlib, Jupyter Notebook	
Lead, Betalabs AI and Data Science Club <i>IIT Kottayam</i>	2024 – Present <i>Pala, Kerala</i>

PROJECTS

Stonks <i>Next.js 15, TypeScript, MongoDB, Inngest, Finnhub API</i> GitHub
<ul style="list-style-type: none">Built production full-stack stock watchlist with real-time market data, automated price alerts, and email notifications.Architected scalable backend with MongoDB compound indexes, cookie-based authentication, and RESTful APIs.Engineered background job orchestration using Inngest for reliable monitoring with retry logic and fault tolerance.Optimized frontend performance with debounced search (300ms), server-side caching, and optimistic UI updates.
AI Resume Analyser <i>React Router v7, TypeScript, Vision LLMs, PDF.js</i> GitHub
<ul style="list-style-type: none">Developed intelligent resume analysis platform integrating vision language models for ATS scoring and structured feedback on content, structure, and optimization.Designed strict TypeScript schema ensuring deterministic JSON responses from AI models with scored categories.Implemented client-side PDF processing with runtime-loaded PDF.js reducing bundle size by 40%.
Mojitto Cocktails <i>Next.js 15, TypeScript, GSAP, Tailwind CSS</i> GitHub
<ul style="list-style-type: none">Created interactive showcase with advanced GSAP animations, scroll-triggered effects, and video scrubbing synchronized with scroll position achieving 60fps rendering.

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, SQL, HTML, CSS
AI & Machine Learning: PyTorch, LangChain, scikit-learn, Pandas, NumPy, Matplotlib, Jupyter Notebook, Ollama
Frontend Development: React.js, Next.js, React Native, Tailwind CSS, GSAP, Three.js, Expo
Backend Development: Node.js, Express.js, Django, REST API, Knex.js, Streamlit, Inngest
Databases: PostgreSQL, MongoDB, Supabase, Appwrite
Tools & Platforms: Git, GitHub, VS Code, Google Colab, Postman, Vercel, Docker

CERTIFICATIONS

Intro to Machine Learning (Kaggle) | Intermediate Machine Learning (Kaggle) | Pandas (Kaggle) | Data Visualization (Kaggle) | Data Structures & Algorithms (Udemy) | Python Programming (Coursera)