

# Madhavendranath S

+91-9846411357 | [madhavendranaths@gmail.com](mailto: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

*B.Tech in Artificial Intelligence and Data Science – CGPA: 8.36/10*

Aug 2023 – Present

*Pala, Kerala*

### Dayapuram Residential School

*Higher Secondary Education – 96.8%*

Aug 2020 – Mar 2022

*Calicut, Kerala*

## EXPERIENCE

### Machine Learning Research Intern

May 2025 – Jun 2025

*National Institute of Technology Calicut*

*Calicut, Kerala*

- 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

2024 – Present

*IIT Kottayam*

*Pala, Kerala*

- Leading technical initiatives to advance machine learning and web development knowledge among students.

## PROJECTS

### Stonks | *Next.js 15, TypeScript, MongoDB, Inngest, Finnhub API* | [GitHub](#)

- 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 | *React Router v7, TypeScript, Vision LLMs, PDF.js* | [GitHub](#)

- 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 | *Next.js 15, TypeScript, GSAP, Tailwind CSS* | [GitHub](#)

- 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)