

# MATHIVANAN S

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## Summary

Aspiring Software Engineer with expertise in AI/ML, software development, and algorithm optimization. Passionate about leveraging AI to solve real-world challenges efficiently.

## Education

Amrita Vishwa Vidyapeetham, Coimbatore

Sept 2023 – May 2027

B.Tech in Computer Science and Engineering (AI) | Minor: Robotics and Automation | **CGPA:** 9.52/10.0

## Research Works

- Tumor Classification using Capsule Networks – Designed a deep learning model to classify tumor types.
- Neo-Natal Seizure Prediction with Fractal Methods – Developed an early detection system for neonatal seizures.
- Neural-Tangent-Kernel for ECG Signal Analysis – Applied NTK for improved cardiac event detection.
- Computational Reduction in Mitochondrial Gene Methylation Detection – Optimized computation for epigenetic studies.

## Projects

- **Clinical Decision Support System (CDSS) using LLMs**  
Built an AI-driven chatbot for personalized medical insights, integrating FAISS for fast retrieval and improving disease prediction accuracy by 20%.  
**Tools:** PyTorch, FAISS, Hugging Face, Flask, Streamlit, PostgreSQL
- **HR-Assistance-AI – AI Assistant for HR and Recruitment**  
Developed a chatbot for HR policy retrieval and resume analysis, reducing query resolution time by 40% and improving recruitment efficiency.  
**Tools:** FAISS, Transformers, Flask, React.js, MongoDB
- **Nyaya Sethu - Legal Assistance Platform**  
Built an NLP-powered chatbot for legal assistance with 85% accuracy in legal query classification.  
**Tools:** BERT, Flask, React.js, PostgreSQL, Kubernetes

## Technologies

- **Languages:** C++, C, Java, SQL, JavaScript, Python
- **AI/ML:** TensorFlow, PyTorch, Scikit-Learn, Hugging Face, FAISS
- **Data:** Pandas, NumPy, OpenCV
- **Cloud/DevOps:** Docker, Kubernetes, GitHub Actions
- **Databases:** PostgreSQL, MongoDB, MySQL
- **Frameworks:** Flask, FastAPI, React.js

## Achievements

- Finalist - GenAI x Gender Competition – Developed an AI-driven solution addressing gender bias in AI systems.

## Languages Known

Tamil, English, Hindi

## Soft Skills

- Problem-solving and critical thinking
- Effective communication and teamwork
- Leadership and project management