

# DIVYA PRIYA BALASUBRAMANIAN

Kallakurichi 6026202

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Versatile programmer and communicator with practical experience in Machine Learning and sensor technology. Eager to bring a blend of technical proficiency (Python/Java) and strong interpersonal skills to a dynamic engineering team.

## Personal Details

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**Eligible to work in:** India, Japan

**Highest Career Level:** No Experience / Student

**Industry:** IT Operations & Helpdesk, IT-Hardware & Networking, Software Development

**Total years of experience:** 0

## Education

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### Artificial intelligence and data science (B.Tech/B.E.)

Dr.N.G.P Institute of technology-Kallakurichi, Tamil Nadu

Full-time | May 2023 to Present

Scored: 9.52

#### PROJECTS

**Pharmaceutical RAG System (GenAI):** Designed and implemented a domain-specific Retrieval-Augmented Generation (RAG) architecture using LangChain integrated with the xAI Grok model to enable intelligent querying of pharmaceutical and medical PDF documents.

- Built an end-to-end document processing pipeline including PDF parsing, text chunking, embedding generation, vector-based semantic retrieval, and context-aware response generation for accurate medical information extraction.
- Optimized retrieval accuracy through efficient chunking strategies, similarity search, and contextual grounding techniques to ensure responses remained strictly aligned with source documents and minimized hallucinations.

#### Speech-to-Text Transcription Engine

- Developed a real-time Speech-to-Text (STT) transcription system using the SpeechRecognition library integrated with Google Speech APIs for accurate audio-to-text conversion.
- Implemented support for both live microphone input and .wav audio file processing, enabling low-latency transcription across multiple audio sources.
- Designed an audio processing workflow involving speech capture, preprocessing, noise handling, and structured text generation to improve transcription quality and readability.
- Optimized the transcription pipeline for real-time performance and scalability, ensuring efficient handling of continuous speech streams and large audio datasets.

#### Explainable AI (XAI) for Credit Scoring

- Developing a transparent credit scoring model by applying SHAP (SHapley Additive exPlanations) to interpret complex Machine Learning predictions.
- Building a transparent decision-making pipeline capable of explaining individual prediction outcomes through global and local feature importance analysis, improving model trustworthiness and auditability.
- Focused on "White-Box" AI to provide clear, human-readable justifications for model outputs, meeting modern regulatory and ethical standards.

- Enhancing model governance and regulatory compliance by incorporating fairness, interpretability, and bias-analysis mechanisms aligned with modern ethical AI standards and responsible AI practices.
- Working with structured financial datasets involving customer demographics, credit history, repayment behavior, and transactional patterns to improve predictive accuracy while maintaining transparency.

#### ACHIEVEMENTS & CERTIFICATIONS

- 1st Rank Holder (2024-25), Dr. N.G.P Institute of Technology
- NPTEL Elite + Gold : Human Computer Interaction (In English) - 92%
- 1st Rank Holder (2023-24), Dr. N.G.P. Institute of Technology

#### Skills / IT Skills

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- Leadership
- Perl
- Docker
- React Native
- Big data
- WordPress
- Databases
- Machine learning
- Cloud computing
- GitHub
- NumPy
- Deep learning
- SQL
- Teamwork
- UI development
- UX
- Python
- AI
- OpenCV
- Pandas
- R
- Computer vision
- Java
- HTML
- REST
- Team management
- OOP
- Web design
- CSS
- Database management
- Communication skills

- PyTorch
- Natural language processing
- MongoDB
- Linux
- TensorFlow

## Languages

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- English - Intermediate
- Hindi - Beginner
- Tamil - Native
- Telugu - Beginner

## Online Profile

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<https://github.com/DIVYA-PRIYA-BALASUBRAMANIAN?tab=repositories>

<http://www.linkedin.com/in/divya-priya-b19350289>

## Awards / Achievements

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### **Hackathon winner**

September 2025

Winner at the hackathon conducted by KPR institute of technology and recieved Rs.5000 as cash prize.

### **NPTEL**

August 2025

NPTEL Elite + Gold : Human Computer Interaction (In English) - 92%

### **First rank holder**

May 2025

Awarded first rank holder for getting 9.52 as CGPA

### **First rank holder**

May 2024

I was awarded as first rank holder by getting 9.5 as CGPA