# ATHARVA NAGANE

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## EDUCATION

**Vellore Institute of Technology** — **Bhopal, Madhya Pradesh**
B.Tech- Computer Science and Engineering — 2023- Expected 2027
**CGPA:** 9.08

## PROFESSIONAL SUMMARY

I am a **Computer Science undergraduate** with expertise in **machine learning**, **software development**, and **cloud deployment**. I have successfully built scalable AI solutions, including **legal aid LLMs** and **medical diagnostic tools**, with a focus on **accuracy**, **efficiency**, and **user accessibility**. My projects demonstrate a strong ability to solve real-world problems using cutting-edge technologies.

## TECHNICAL SKILLS

- **Programming Languages:** C++, Python
- **Machine Learning Frameworks:** TensorFlow, Keras, Scikit-Learn, LangChain, Ollama
- **Tools & Libraries:** Flask, Pandas, NumPy, NLTK, OpenCV, Pillow, Matplotlib, Seaborn
- **CS Fundamentals:** Data Structures, Algorithms, Operating Systems, DBMS, OOPs using C++

## PROJECTS

- **Legal Aid Provider LLM: (RAG Model)**
  - Designed and implemented a **Retrieval-Augmented Generation (RAG) model** using **LangChain** and **OpenAI embeddings** to process legal documents like the Indian Penal Code and Consumer Protection Act 2019.
  - Engineered a document processing framework utilizing text splitters to categorize and retrieve legal documents, leading to an increase in document accessibility by 30% and expediting case preparation for legal teams.
  - Integrated **GPT-3.5-turbo** for generating context-aware legal advice, reducing processing time by **25%**.
  - Deployed the model via **Flask APIs** for scalable legal assistance.
- **Pneumo-Care**: **(WEB Application)**
  - Developed a pneumonia detection web application using TensorFlow and Keras, achieving **80.66% accuracy**.
  - Leveraged **Pillow** for image preprocessing and **Seaborn** for visualizing performance metrics.
  - Deployed the app on **Render** platform, making it globally accessible and scalable for users worldwide.
  - **Reduced false positives by 15%** by **fine-tuning the model** with data augmentation techniques like rotation and scaling.
- **NLP Toolkit**:
  - Developed a text summarization and sentiment analysis toolkit using **NLTK** and **Google Translate API**.
  - Enhanced usability by integrating **language translation** for **5+ languages**, increasing user engagement by **30%**.
  - Optimized data pipelines using **Pandas**, reducing processing time by **25%**.
- **Iris Classifier**:
  - Created a k-NN model **from scratch using Python and NumPy**, achieving **92% accuracy** on the Iris dataset.
  - Improved model robustness by **15%** through feature scaling and outlier removal.
  - Visualized decision boundaries using **Matplotlib**, enhancing model interpretability for non-technical users.

## CERTIFICATIONS & ACTIVITIES

- **Machinester's Program** by TechBairn**- Gold Badge** (June-September 2024)
- **SIH 2024** - Cleared internal university rounds and ranked among the **top 50 teams** preparing for the National Round.
- Solved **100+ Data Structures and Algorithm problems** on **LeetCode** platform.

## EXPERIENCE

### AWS APAC Solutions Architecture virtual experience program on Forage - December 2024

- Engineered a robust **Elastic Beanstalk hosting framework** tailored for a rapidly expanding client, achieving a 40% increase in deployment speed while maintaining system reliability and **reducing infrastructure costs by $30,000 annually.**
- Delivered detailed explanations of the proposed architecture with precise cost calculations; facilitated four successful client meetings resulting in enhanced clarity around services offered while minimizing misunderstandings about budget implications.