

VASANTHARAN K

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SKILLS

LANGUAGES

- **Python** | **JavaScript** | Java | C | SQL

TECHNOLOGIES & FRAMEWORKS

- **MERN** | **Docker** | **Git & GitHub Actions** | Flask | FastAPI | Streamlit | YOLO | Selenium | DICOM | AWS | Microsoft Azure

TECHNICAL SKILLS

- **Machine Learning** | **CI/CD** | **Cloud Deployment** | API Development | Computer Vision | Transfer Learning

EXPERIENCE

BabyFlix Inc.

Feb 2024 - June 2024

Python Developer

San Francisco, California (Remote)

DICOM | Computer Vision | Python | Pydicom

- Designed and implemented a Python script to **extract metadata** from DICOM files.
- Developed functionality to **retrieve key metadata fields**, including patient information, imaging parameters, frame rate, pixel data, and study details. **Integrated conversion logic** to transform **DICOM images** into **JPEG** format and **DICOM video sequences** into **MP4** format.
- **Implemented robust error handling** and **validation mechanisms** to support various DICOM file types and manage **metadata inconsistencies**.

Centillion Labs

Dec 2023 - Jan 2024

ML Validator Intern

Bangalore, India (Remote)

Transfer Learning | Terraform | Microsoft Azure | Networking

- Contributed to the development of a project titled “Aristotle,” focusing on building an **AI model** using **pre-trained models** from Hugging Face. Worked on Microsoft Azure, where responsibilities included designing and implementing a **Hub-and-Spoke architecture** for **Databricks deployment**.
- Additionally, configured **networking components** such as Virtual Networks (VNETs), subnets, Network Security Groups (NSGs), and private endpoints to establish a **secure, scalable, and well-segmented** cloud infrastructure.

EDUCATION

B. Tech - Artificial Intelligence and Data Science

Kongu Engineering College, Erode (2021 - 2025)

CGPA - 9.57/10

HSC

Erode Hindu Kalvi Nilayam, Erode (2020 - 2021)

Percentage - 92.76%

SSLC

Carmel MHSS, Erode (2018 - 2019)

Percentage - 93.6%

PROJECTS

AI-Based Interactive Chatbot for the Department of Justice’s Website using RAG

Aug 2024 - Sept 2024

Backend Developer

- Developed a legal chatbot backend using **MERN** and integrated a Retrieval-Augmented Generation model via **FastAPI**, built using Hugging Face LLMs, to handle legal queries with context-aware responses. Designed **MongoDB schemas** for OTP verification, user management, and multi-message conversations. Implemented **secure authentication** with bcrypt password hashing and auto-generated avatars via Canvas API and Cloudinary. Automated **CI/CD pipeline** using GitHub Actions to build and push **Docker images**, deploying to **AWS EC2**.
- Tech Stack: **NodeJS** | **FastAPI** | **Docker** | **GitHub Actions** | **AWS** | **CI/CD**

Detecting Signs of Depression from Social Media Text

Mar 2023 - June 2023

Team Lead & ML Developer

- Led a team to develop a depression detection system using NLP and machine learning. Used TF-IDF, Count Vectorizer, and Word2Vec for text feature extraction. Implemented models like Random Forest, Naive Bayes, Decision Tree, and Logistic Regression. Aimed to identify early signs of depression from social media posts for timely intervention.
- Tech Stack: **Python** | **Scikit - Learn** | **Machine Learning**

Analyzing Early-Stage Alzheimer's Disease from EEG Recordings

Jan 2024 - Dec 2024

Team Lead & ML Developer

- Led a team to study early markers of Alzheimer's using EEG data from 100 participants. Conducted story-based memory recall tasks across various age groups. Performed EEG signal analysis to detect cognitive decline patterns. Aimed to support early diagnosis of Alzheimer's through neurophysiological insights.
- Tech Stack: **Python** | **Scikit - Learn** | **Machine Learning** | **Keras** | **Transfer Learning**

Empowering the Handloom Industry Through Embedded IoT Systems

July 2023 - May 2024

Team Lead & IoT Developer

- Designed and led the development of an embedded IoT system for remotely loading design patterns into power looms. Integrated BI tools for real-time monitoring and analysis of machine performance and output metrics.
- Tech Stack: **Python** | **Raspberry Pi** | **API Development** | **Flask**

ACHIEVEMENTS

- **Best Outgoing Student** March, 2025
- **Best Student in Academic Activities** March, 2025
- **Best Outgoing Cadet** March, 2025
- **Academic Excellence Awards** 2025, 2024, 2023
- **Silver Medal in NIAP Program @ EBSB Camp 2025** January, 2025
- **Appreciation Award (Best in Training & Social Service)** by TN, P & AN DTE April, 2024
- **Overall Best Cadet in CATC 2 Cum IGC Camp** April, 2024
- **Third Prize in Project Expo** February, 2024
- **First Prize in PoC & Ideathon** December & October, 2022

CERTIFICATIONS

- **GitHub Foundations Certification** Issued by GitHub May 2025 - May 2028

LEADERSHIP

- **NCC Administration Senior** 2024 - 2025
- **Additional Secretary in CSI** 2024 - 2025
- **Technical Head in AI Association** 2023 - 2024
- **Treasurer in Pasumaivanam Club** 2023 - 2024
- **Executive Member in Tamil Mandram** 2023 - 2024