

# SPANDAN RAJ

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## Education

### VIT Bhopal University

Bachelor of Technology (B.Tech) in Computer Science & Engineering , CGPA- 8.5

Expected 2026

Madhya Pradesh

### DAV Public School

Senior Secondary (Class 12) – CBSE, Percentage: 85.6%

July 2021

Berhampur, Odisha

### DAV Public School

Secondary Education (Class 10) – CBSE, Percentage: 91.6%

July 2019

Berhampur, Odisha

## Technical Skills

**Programming Languages:** C++, Java, Python, HTML, CSS, JavaScript

**Libraries/Frameworks:** TensorFlow, PyTorch, Scikit-learn, OpenCV, Pandas, NumPy, Matplotlib, FastAPI

**Machine Learning & Data Science:** Supervised Learning, Unsupervised Learning, CNNs, LSTMs

**Tools & Platforms:** GitHub, FastAPI, Ngrok, Postman, AWS

**Software Development:** Data Structures & Algorithms, Object-Oriented Programming (OOP)

## Projects

### Failure Forecasting in IoT Using LSTM Autoencoder + LSTM | Python, TensorFlow

April 2025

- Developed a two-stage deep learning pipeline for anomaly detection and failure prediction in IoT sensor data.
- Implemented an LSTM autoencoder for anomaly detection and a separate LSTM network for failure forecasting.
- Achieved 99.69% accuracy in fault prediction using a sliding-window approach and threshold-based anomaly detection.

### Farm Fusion | Python, TensorFlow, FastAPI

March 2025

- Engineered an AI-powered platform providing smart farming solutions including crop yield prediction, fertilizer recommendation, and pest detection.
- Integrated multiple ML models and deployed them through FastAPI for seamless access via a web dashboard.

### Culinary Canvas | Python, React, FastAPI

November 2023

- Developed a full-stack recipe recommendation web application combining user preferences, ingredient availability, and nutritional goals.
- Designed an intuitive React-based front-end interface to search, filter, and save personalized recipes.

### Gesture Controlled Virtual Mouse | Python, MediaPipe, Pybind11

September 2024

- Developed an innovative human-computer interaction system enabling virtual control of all I/O operations using static/dynamic hand gestures and voice commands.
- Implemented state-of-the-art Machine Learning and Computer Vision algorithms with CNNs via MediaPipe for real-time hand gesture recognition without additional hardware.
- Designed two modules: one using direct hand tracking with MediaPipe Hand Detection, and another supporting glove-based detection for enhanced accuracy.

## Certifications

### Advanced MERN Stack Course

July 2025

AlgoCamp

Online

### AWS Solutions Architect - Associate Certification Program

April 2025

Ethnus (Codemithra)

Online

### Salesforce Developer Certification Program

April 2025

Ethnus (Codemithra)

Online

### HTML, CSS, and Javascript for Web Developers

December 2023

Google (Coursera)

Online

## Additional Information

- \* Focusing on Data Structures Algorithms.
- \* Participated in 2024 InnovateYou Hackathon, Pune.
- \* Led the Event Management team of a university club.