SPANDAN RAJ

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Education

VIT Bhopal University — **May 2026**
Bachelor of Technology in Computer Science and Engineering, CGPA:- 8.55 — *Madhya Pradesh*

DAV Public School — **July 2021**
Senior Secondary CBSE, Percentage: 85.8% — *Berhampur, Odisha*

DAV Public School — **July 2019**
Secondary Education CBSE, Percentage: 91.6% — *Berhampur, Odisha*

Technical Skills

Programming Languages: C++, Java, Python, JavaScript, HTML, CSS, SQL
Machine Learning and AI: TensorFlow, PyTorch, Scikit-learn, CNN's, LSTM's, Supervised & Unsupervised Learning
Data Science and Analytics: Pandas, NumPy, Matplotlib, Data Preprocessing
Cloud and DevOps: AWS, Docker, CI/CD, RESTful APIs, FastAPI, Git, GitHub
Software Development: Data Structures & Algorithms, Object-Oriented Programming (OOP)

Projects

FAILURE FORECASTING IN IOT USING LSTM AUTOENCODER + LSTM | *Python, TensorFlow*
- Engineered 2-stage deep learning pipeline with LSTM autoencoders for predictive maintenance, achieving 99.69% accuracy.
- Designed preprocessing pipelines for 32 IoT sensors using Python and NumPy, improving model performance by 25%.
- Built scalable TensorFlow models with Keras optimization, reducing false positives by 40% in production.
- Implemented time-series anomaly detection algorithms using PyTorch, decreasing maintenance costs by 35%.

Farm Fusion | *GitHub* | *FastAPI, TensorFlow*
- Developed agricultural intelligence platform with crop recommendation and disease detection using ensemble ML models.
- Constructed REST API using FastAPI serving 6 ML models with data validation, achieving 98% detection accuracy.
- Deployed microservices architecture with automated serving using Docker, reducing API response time by 60%.
- Optimized database queries with MySQL and implemented caching, improving application throughput by 45%.

AirCommand | *GitHub* | *Python, MediaPipe*
- Developed gesture interface enabling full I/O via hand gestures and voice commands.
- Achieved 95%+ recognition accuracy with sub-200ms latency for real-time responsiveness.
- Optimized CNN and MediaPipe pipelines to reduce misclassification across diverse users.
- Pioneered a touchless computing system enabling hands-free operation without additional hardware.

Culinary Canvas | *GitHub* | *Python, TensorFlow*
- Architected a full-stack recipe recommendation system personalizing meal plans for 10,000+ users.
- Integrated React frontend with FastAPI backend serving ML models for search and filtering.
- Increased engagement by 25% with personalized nutrition suggestions and interactive UI features.
- Deployed cloud infrastructure ensuring high availability, scalability, and seamless user experience.

Certifications

Oracle Certified AI Foundations Associate - Oracle Academy

Advanced Full Stack Course - AlgoCamp

AWS Solutions Architect- Associate Certification Program - Ethnus (Codemithra)

Salesforce Developer Certification Program - Ethnus (Codemithra)

Leadership and Extracurricular

- Chaired the UNHRC committee at VITBMUN'25, mentoring 50+ delegates in policy debates.
- Collaborated in a cross-functional team at the 2024 InnovateYou Hackathon, delivering innovative solutions under tight deadlines.
- Led Event Management team for university Odia club, organizing large-scale events for 500+ participants.