

# APEX ARYAN DAS

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## Education

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### VIT Bhopal University

Bachelor of Technology in Computer Science and Engineering

Dec 2026

Madhya Pradesh

### Mother's Public School

Senior Secondary CBSE, Percentage: 86.9%

Jul 2022

Bhubaneswar, Odisha

### DAV Public School

Secondary Education CBSE, Percentage: 94.6%

Mar 2020

Talcher, Odisha

## Technical Skills

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

**Machine Learning and AI:** TensorFlow, PyTorch, Scikit-learn, OpenCV, Deep Learning, Neural Networks, Computer Vision

**Data Science and Analytics:** Pandas, NumPy, Matplotlib, Seaborn, Data Preprocessing, Time-Series Analysis

**Cloud and DevOps:** AWS, Docker, CI/CD, RESTful APIs, Microservices, FastAPI, API Development

**Development Tools:** Git, GitHub, Postman, Linux, Agile Methodology, MERN Stack

**Databases:** MySQL, Database Design, System Architecture

## Projects

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### FAILURE FORECASTING IN IOT USING LSTM AUTOENCODER + LSTM | *GitHub* | *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%.

### FULL-STACK AI APPLICATION FOR AGRICULTURAL INSIGHTS | *GitHub* | *FastAPI, TensorFlow*

- Developed agricultural intelligence platform with crop recommendation and disease detection using ML models.
- Constructed REST API using FastAPI serving 6 ML models with data validation, achieving 98% detection accuracy.
- Deployed the asynchronous API to the internet using ngrok, providing external access to the application.
- Optimized data handling and processing to improve application throughput by 30%.

### HIGH-PERFORMANCE HTTP DOWNLOADER (GATOR) | *GitHub* | *Rust, Tokio, Async Programming*

- Created concurrent HTTP downloader in Rust with async/await patterns, achieving 10x faster download speeds.
- Architected chunked downloading algorithms for files over 10MB with load balancing, reducing download time by 75%.
- Established resumable download functionality using HTTP range requests, ensuring 99.9% success rate.
- Integrated multi-threaded connection pooling with Tokio runtime, handling 500+ concurrent downloads efficiently.

### ENSEMBLE MODEL FOR DETECTION OF SICKLE CELLS IN RBC SAMPLES | *GitHub* | *Python, TensorFlow*

- Delivered hybrid ensemble system combining deep neural networks with K-NN for sickle cell detection.
- Accomplished 98.5% classification accuracy through feature extraction, surpassing individual models by 15%.
- Processed 7,000+ blood cell images using OpenCV preprocessing pipelines, reducing overfitting by 20%.
- Automated model training pipeline with TensorFlow and Scikit-learn, cutting development time by 50%.

## Certifications

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**AWS Solutions Architect Associate** - Ethnus Codemithra

**Full Stack MERN Certification** - Ethnus Codemithra

**Industrial IoT Markets and Security** - University of Colorado Boulder (Coursera)

**The Bits and Bytes of Computer Networking** - Google (Coursera)

## Leadership and Extracurricular

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- Managed social media team of Odia club, increasing engagement rates by 45% through strategic content planning.
- Guided 4-member team in ZS Campus Beats 2025 competition, securing top 100 ranking in India.
- Coordinated team of 3 in InnovateYou Hackathon to develop budget-friendly prosthetic using 3D printing.