

# ADITYA SWAIN

AI/ML Engineer | Machine Learning | Deep Learning | Computer Vision | NLP

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## PROFESSIONAL SUMMARY

Final-year B.Tech Computer Science student at Trident Academy of Technology (CGPA: 8.0/10, graduating May 2026) with 12 months of practical AI/ML experience gained through two back-to-back internships. I have worked hands-on with Python, TensorFlow, Keras, OpenCV, and Scikit-learn to build, train, and evaluate deep learning models for real-world problems in Computer Vision and Natural Language Processing. From designing a live facial recognition attendance system to developing multi-class NLP classifiers, I have handled every stage of the machine learning pipeline independently — data collection, preprocessing, feature engineering, model selection, hyperparameter tuning, and deployment. I am now looking to bring this experience into a full-time AI/ML Engineer or Data Scientist role.

## TECHNICAL SKILLS

**Programming Languages:** Python (primary), Java, C, SQL (MySQL), JavaScript, HTML, CSS

**ML / DL Frameworks:** TensorFlow, Keras, Scikit-learn, OpenCV, PyTorch (familiar)

**Data & Visualisation:** NumPy, Pandas, Matplotlib, Seaborn

**AI / ML Concepts:** Supervised Learning, Unsupervised Learning, Deep Learning, Neural Networks, Convolutional Neural Networks (CNN), Transfer Learning, Data Augmentation, Natural Language Processing (NLP), Computer Vision, Object Detection, Facial Recognition, Feature Engineering, Hyperparameter Tuning, Model Evaluation (Precision, Recall, F1-Score, AUC-ROC), Regularisation (Dropout, Batch Normalisation, Early Stopping)

**Tools & Platforms:** Jupyter Notebook, Google Colab, VS Code, Git, GitHub, Kaggle, MySQL

## INTERNSHIP EXPERIENCE

**AI/ML Engineer Intern** | CTTC MSME | Bhubaneswar, India

Jan 2025 – Jun 2025

- Built a real-time facial recognition attendance system from scratch using CNN, TensorFlow, Keras, and OpenCV. The system captured live video feeds, identified individuals automatically, and logged attendance to a MySQL database — removing the need for manual entry entirely.
- Developed object detection pipelines on custom-labelled datasets. Used transfer learning with pre-trained CNN architectures and applied data augmentation strategies to improve generalisation and bring down overfitting significantly.
- Handled the complete model development cycle on my own — raw data preprocessing, feature engineering, architecture selection, training, hyperparameter tuning, and evaluation using precision, recall, and F1-score to confirm production-readiness.
- Worked as part of a four-member cross-functional team to integrate trained deep learning models into desktop applications used for live operational workflows, gaining experience in bridging research and real-world deployment.

**AI/ML Engineer Intern** | 1stop.ai | Remote

Jul 2025 – Dec 2025

- Designed and trained a multi-class NLP text classification model using tokenisation, TF-IDF vectorisation, word embeddings, and a deep neural network. The model was trained on Kaggle datasets and delivered strong accuracy across multiple output classes.
- Built a landmark detection and image classification system end-to-end using CNN architectures in TensorFlow and Keras — starting from raw data ingestion and preprocessing all the way through to training, evaluation, and inference.
- Managed the full ML pipeline independently for every project: data sourcing, cleaning and preprocessing, model architecture design, training runs, evaluation, and writing up clear technical documentation for handover.

- Improved model performance across projects by applying regularisation techniques including dropout layers, batch normalisation, and early stopping — reducing the gap between training and validation metrics consistently.

## KEY PROJECTS

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### Facial Recognition Attendance System | Python · OpenCV · CNN · TensorFlow · Keras · MySQL

- Designed the end-to-end pipeline for a real-time face recognition system: live video input → face detection using Haar Cascade → CNN-based identification → automatic attendance logging to a MySQL database with timestamps for reporting.
- Used data augmentation techniques — rotation, brightness shifts, horizontal flipping — to train the CNN model to perform accurately under different lighting conditions and facial angles, making it reliable for real use.
- Achieved stable recognition performance in live conditions, with the system correctly handling multiple users in a single session without manual intervention.

### NLP Multi-Class Text Classification Pipeline | Python · TensorFlow · Keras · Scikit-learn · NLP · Kaggle

- Built a complete text classification pipeline covering every stage: raw text cleaning, tokenisation, stop-word removal, TF-IDF feature extraction, word embedding generation, and training a deep neural network classifier with dropout and early stopping.
- Evaluated the final model using accuracy, precision, recall, and F1-score across all classes. Documented the full model architecture, training process, and results clearly to support reproducibility and future improvements.

## EDUCATION

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### B.Tech in Computer Science Engineering

2022 – May 2026

Trident Academy of Technology, Bhubaneswar | CGPA: 8.0 / 10 | Relevant: Data Structures & Algorithms, DBMS, Artificial Intelligence, Machine Learning

### Class XII — Computer Science (CBSE)

2022

Sainik School Bhubaneswar | 65%

### Class X — Mathematics (CBSE)

2020

Sainik School Bhubaneswar | 80%

## CERTIFICATIONS & TRAINING

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AI/ML Training Program — CTTC MSME, Bhubaneswar

2025

AI/ML Internship Certification — 1stop.ai

2025

## ACHIEVEMENTS & ACTIVITIES

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- Completed 12 months of uninterrupted AI/ML internship experience across two organisations simultaneously with a full-time B.Tech degree — managing both without any dip in academic or professional performance.
- Active on Kaggle — used the platform for sourcing datasets and participating in ML problem sets involving NLP and Computer Vision challenges.
- Maintained a consistent CGPA of 8.0/10 throughout the B.Tech programme at Trident Academy of Technology.
- Delivered a production-integrated facial recognition system at CTTC MSME that was adopted for actual operational use within the internship period.