# H Aditya Kumar

#### EDUCATION

# Indian Institute of Technology Bhubaneswar

B. Tech & M. Tech in Mechanical Engineering - CGPA: 8.15

Bhubaneswar, Odisha

2021-Present

#### Modern Vidya Niketan, Faridabad

Senior School Certificate Examination, CBSE - CGPA 9.6

Faridabad, Haryana 2018 - 2020

# EXPERIENCE

# Software Developer Intern

 $May\ 2025-July\ 2025$ 

Build for Bharat Fellowship (CDAC, Trivandrum)

- Benchmarked multiple Speech-to-Text (STT) models by rigorously evaluating Character Error Rate (CER) and Word Error Rate (WER), identifying the most effective model for downstream deployment.
- Engineered a few-shot learning pipeline with LLMs for named-entity recognition (NER), extracting and geo-locating critical information from unstructured text.
- Built an interactive crime analytics dashboard for police vehicle deployment, applying spatial analysis to visualize hotspots and support resource allocation.

#### Research Consultant Intern

Jan 2024 - March 2024

Worldquant LLC

- Developed production-level trading strategies using Brain's simulation-based platform for financial simulations.
- Applied advanced quantitative techniques and data analysis, submitting 30+ strategies for out-of-sample testing.

# Projects

### AI-Powered Pupil Dilation Tracking for Disease Monitoring

 $May\ 2025$ 

- Designed and deployed a real-time medical image analysis framework using U-Net and CNNs for segmentation and quantification of pupil dilation, enabling early-stage glaucoma detection.
- Leveraged TensorFlow to train deep learning models, achieving high-precision classification and prediction of pupillary responses under clinical supervision.
- Built an automated data labeling pipeline to accelerate training cycles, improving scalability and reducing manual
  effort in handling large datasets.

#### Fantasy Sports Predictions | GitHub

Dec 2024

- $\bullet$  Engineered an XGBoost-based predictive model that achieved 95% accuracy in forecasting player fantasy points from 20+ years of historical cricket data.
- Developed an AI chatbot using Retrieval-Augmented Generation (RAG) for interactive, personalized player selection insights.

#### Reinforcement Learning for Chess Engine | GitHub

May 2024

- Trained a reinforcement learning agent on 60,000+ game records to build a self-learning chess AI capable of strategic decision-making.
- Architected a scalable web platform using React and Flask with real-time inference and user interaction.

#### TECHNICAL SKILLS

Programming Languages: C/C++, Python, HTML, CSS, JavaScript, MATLAB, SQL

Technologies/Frameworks: NumPy, Pandas, TensorFlow, OpenCV, Scikit-learn, React, Node.js PostgreSQL

Dev Tools: Git, GitHub, Docker, AWS Visualization Tools: Matplotlib, Seaborn, Plotly

# CERTIFICATIONS AND ACHIEVEMENTS

Deep Learning - DeepLearning.AI, Stanford University | Certificate

5th Rank in Inter IIT Tech Meet 13.0 - IIT Bombay

1st Place in Data Detectives Challenge - Wissenaire(TechFest), IIT Bhubaneswar

# LEADERSHIP AND RESPONSIBILITY

Core Member - Tensor Club (ML Society)

Core Member - Data Science Club

Core Member - Software Development Club

Core Head - Alma Fiesta (Cultural Fest)

Core Member - Cinewave (Cinematics Society)

Core Member - Produit (Product Development Club)