

# ADITYA YADAV

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## EDUCATION

### Indraprastha Institute of Information Technology, Delhi (IIIT-D)

June 2025

#### Bachelor of Technology in Computer Science

- Relevant Coursework: Data Structures & Algorithms, Machine Learning, Artificial Intelligence, Computer Networks, Network Security
- Research: 2 IEEE publications on ML-based optical network optimization (IEEE ANTS 2024, IEEE ANTS 2025)

## PROFESSIONAL EXPERIENCE

### Software Developer

August 2025 – Present

#### HCLTech

- Engineered Azure OpenAI-powered Python automation utilities, reducing manual development effort by 80% + across workflows
- Architected intelligent automation tools leveraging GPT-4 for automated code generation, testing pipelines, and documentation
- Integrated AI-driven solutions with CI/CD pipelines in Agile environment, delivering production-grade features on schedule

**Technologies:** Python, Azure OpenAI, GPT-4, Git, CI/CD, REST APIs, Agile/Scrum

### Research Intern – Machine Learning

January 2024 – July 2025

#### BITS-ON Research Group, IIIT-Delhi

- Developed ML-based Quality of Transmission estimator achieving 95%  $R^2$  accuracy using Random Forest and Deep Neural Networks
- Built fault localization system for optical amplifiers handling 8 fault scenarios using C+L band spectral data analysis
- Implemented generalization techniques enabling fault prediction on unseen degradation values, improving model robustness

**Technologies:** Python, TensorFlow, Keras, Scikit-learn, Pandas, NumPy, Matplotlib, Deep Learning

## PUBLICATIONS

- A. Yadav et al., "Machine Learning-Based Quality of Transmission Estimation in Optical Networks," IEEE ANTS 2024
- A. Yadav et al., "Demonstration of Soft-Failure Localization in C+L Band Optical Testbed: A Deep-Learning Assisted Approach," IEEE ANTS 2025 — **◆ Best Paper Award (Demos & Exhibits Category)**

## PROJECTS

### LLM-Powered Microelectronics Chatbot | Python, Hugging Face Transformers, Flask, REST API, NLP

- Developed domain-specific chatbot serving 1,000+ microelectronic components with 92% query accuracy using fine-tuned LLM
- Fine-tuned Hugging Face transformer on 50K+ domain-specific samples, reducing response latency by 40% via Flask REST API

### Vector-Borne Disease Prediction System | Python, Scikit-learn, Random Forest, SVM, PCA

- Engineered multi-class classification system achieving 94% accuracy across 5 disease categories using Random Forest and SVM
- Applied PCA reducing feature dimensions by 60%, improving model training speed by 3x while maintaining prediction accuracy

## TECHNICAL SKILLS

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

**ML/AI & Data Science:** TensorFlow, Keras, PyTorch, Scikit-learn, Hugging Face, Pandas, NumPy, Matplotlib, Deep Learning, NLP

**Tools & Platforms:** Azure, Azure OpenAI, Git, GitHub, CI/CD, Linux, Flask, REST APIs, Docker, Agile/Scrum