

ID NO 2418241

INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY

HYDERABAD

OUTREACH DIVISION

CERTIFICATE OF MERIT

awarded to

Aakash Saxena

for **Excellent** performance in

PG Certification Program in Artificial Intelligence and Machine Learning

Organized by Outreach Division in association with TalentSprint

November 2024 - August 2025

Prof. Ramesh Loganathan
Head, Outreach

Prof. C. V. Jawahar
Program Director

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PROGRAM COVERAGE

Programming, Math Foundations and Classical Algorithms

- Key Python Libraries (NumPy, SciPy, Pandas, Matplotlib)
- Overview of AI and ML concepts
- Principles of ML and Deeper Look at ML
- Data Processing and Visualization
- Features Selection and Extraction
- Intuitive and Simple Algorithms
- Classification and Regression problems
- Dimensionality Reduction
- Representing Text and Language
- Sampling Methods (Bootstrap and Bagging)

Problem Formulation and Neural Networks

- Formulating real world problems for AI/ML
- Representation of real-world data
- Manifold learning and Unsupervised Learning
- Overfitting and Generalization
- Performance Metrics
- Non-Linear solutions & Multi-Layer Perceptron
- Gradient Descent and Backpropagation
- PCA with EigenFaces
- Support vector machines and Kernels
- Natural Language Processing (NLP)
- Features for Perception (Image and Speech)
- Ensemble Methods, Random Forest, XG-Boost
- Human in the Loop systems

Deep Learning

- Introduction to Deep Learning
- Pytorch, TensorFlow & Keras
- Convolutional Neural Networks
- Autoencoders
- Recurrent Neural Networks
- Time Series Application
- Appreciating CNNs
- RNN, LSTM and GRU
- Recommendation Systems

Advanced Topics

- Beyond AlexNet and Transfer Learning
- Fast API
- Deployment and Practical Issues
- Model Compression
- Siamese Networks and GANs
- Computer Vision
- ML in Speech and NLP
- Industry Lectures and talks
- Attention and Transformers: BERT, GPT
- Hugging Face Platform & Transformer Library
- Fine Tuning of BERT & GPT, PEFT
- RAG, LangChain

Capstone Project: Real World RAG System

CERTIFICATION FRAMEWORK

Grade	Percentile
Outstanding	Top 10% performers
Excellent	Next 30% performers
Very Good	Next 40% performers
Good	Others

* Certificate of Merit is awarded to participants who fulfill Attendance Criteria of 75%.
* Certificate of Participation is awarded to others.