भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

Certificate Programme in Machine Learning and Deep Learning (Batch 04)

06 Months | Starts 21st September, 2024 | Live Online Lectures

Programme offered by Continuing Education Programme (CEP), IIT Delhi

Why Machine Learning and Deep Learning?

Machine Learning (ML) and Deep Learning (DL) are the two main pillars of Data Science and are the subsets of Artificial Intelligence. ML integrates computer science and statistics to recognise patterns and make predictions from data and perform specific tasks without being explicitly programmed. DL, a subset of ML, uses algorithms that analyse data with a logic structure, called Artificial Neural Network (ANN) that mimics the human thinking process. In general, the learning process of these algorithms can either be supervised or unsupervised, depending on the data being used to feed the algorithms. While the global market for ML is projected to grow from $17.1 billion in 2021 to $90.1 billion by 2026, the DL market is estimated to grow from $12.3 billion in 2021 to $60.5 billion by 2025 (bccresearch.com).

Applications of ML and DL

Traffic predictions	Product recommendations	Self-driving cars
Fraud Detection	Image and speech recognition	Natural Language Processing
Medical diagnosis	Virtual assistants	

We are living in the era of big data where massive amounts of data are generated every second. Thanks to the applications of Machine Learning (ML) and Deep Learning (DL), yesterday's sci-fi has become today's reality. Acquiring skills and competencies in these technologies of the future will go a long way in securing your own future in this exciting domain.

Certificate Programme in Machine Learning and Deep Learning (Batch 04)

This programme is designed to equip professionals with a comprehensive understanding of machine learning and deep learning techniques, along with their practical applications in addressing real-world business challenges. The programme encompasses a variety of topics, including supervised and unsupervised learning, deep neural networks, convolutional neural networks, and natural language processing.

Programme Highlights

Design and train your custom-built Neural Networks using Keras and TensorFlow

Masterclasses on ChatGPT

Learn industry relevant tools

One day campus immersion at IIT Delhi Campus (optional)

76 hours of live online sessions by IIT Delhi faculty and industry experts

Flexibility to custom create your Capstone Project

Who should attend?

- Graduates from science or engineering background seeking a career in the ML/DL domain
- Professionals in the software and IT industry seeking to upskill with ML/DL expertise and applying this intelligent learning tool in their respective fields
- Professionals aspiring to work as data engineers, data scientists, machine learning engineers, etc.

Job Roles

Below are the job roles available in this field:

Machine Learning Specialist:

Develops algorithms and models for machines to learn from data and make autonomous predictions or decisions.

Deep Learning Specialist:

Designs, trains, and optimises neural networks to create and refine complex models.

Data Scientist:

Analyses and interprets complex data sets to extract insights and guide business decisions using statistical methods, machine learning, and programming.

Data Analyst:

Collects, cleans, and analyses data to identify trends and patterns, providing actionable insights to support business operations and decisions.

AI Engineer:

Designs and implements AI systems and applications, including machine learning models, natural language processing algorithms, and computer vision solutions, to automate tasks or enhance human capabilities.

Learning Outcomes

Gain an understanding of efficient Python programming, including developing the skills to load and pre-process data from online and offline databases using pandas.

Develop a thorough understanding of the fundamental aspects and challenges of machine learning, such as data, model selection, and model complexity.

Identify the strengths and weaknesses of popular machine learning approaches.

Learn to design and train your own neural networks using Keras and TensorFlow modules.

Acquire the ability to design and implement various machine learning and deep learning techniques in a range of real-world applications.

Programme Curriculum

Module 1: Fundamentals of Python for Machine Learning

- Foundations of Python Programming
- Functional Programming in Python
- Data Structures, Loops, and Control Structures

Learning Outcomes

Covers essential Python programming concepts, including basic syntax and data types, control sequences like loops and conditional statements, and writing functions and classes.

Module 2: Data Processing for Machine Learning

- Numerical Computations and Linear Algebra Using NumPy
- Data Pre-processing Using Pandas
- Data Visualisation Using Matplotlib
- Introduction to Scikit-learn

Learning Outcomes

Learn about file handling with Python, plotting and visualisation with Matplotlib, arrays, and matrices with NumPy, scientific computing with NumPy, and data handling with pandas.

Module 3: Mathematical Foundations for Machine Learning

- Linear Algebra: Vectors, Matrices, Norms, Subspaces, Projections, SVD, EVD, Derivatives of Matrices, Vector Derivative Identities, and Least Squares
- Optimisation: Constrained and Unconstrained Optimisation, Maxima and Minima, Convex and Non-Convex, Gradient and Hessian, Positive Definite and Semi-Definite, Second Derivative Test, Steepest Descent, Adam, AdaGrad, RMSProp, and KKT
- Probability Theory: Discrete and Continuous Random Variables, Conditional Probability, Joint Probability Distribution, Multivariate, MAP Criterion, and ML Criterion

Programme Curriculum

Learning Outcomes

Gaining an understanding of the mathematical fundamentals crucial for machine and deep learning success, like linear algebra, probability theory, and optimisation methods. In linear algebra, master essential operations involving vectors and matrices and the understanding of eigenvalues and eigenvectors. Probability theory will provide concepts on probability distributions and Bayes' theorem, which is crucial to understanding the probabilistic nature of machine learning algorithms. Furthermore, it delves into optimisation techniques, including gradient descent and convex optimisation, empowering to optimise models and algorithms effectively.

Module 4: Artificial Intelligence Terminologies and Data Analysis

- Differences between Artificial Intelligence, Machine Learning, and Deep Learning
- Differences between Statistical Approach, Shallow Learning, and Deep Learning
- Data Types and their Properties
- Attribute Types
- General Characteristics of Datasets
- Data Measurement Criteria: Precision, Bias, and Accuracy
- Data Pre-processing Techniques
- Distance-based Dissimilarities Between Datasets

Learning Outcomes

Understand and differentiate between key concepts like AI, Machine Learning, and Deep Learning. Gain a strong foundation in data properties, types, and characteristics of datasets. Furthermore, you will be able to evaluate data quality using metrics like precision, bias, and accuracy, and explore pre-processing techniques for data preparation.

Programme Curriculum

Module 5: Fundamentals of Machine Learning and Algorithms

- Machine Learning Problems: Classification, Regression, Interpolation, and Density Estimation
- Linear Regression Model, Classification Model, and Classification Evaluation
- Learning Algorithms: Supervised and Unsupervised
- Bayesian Decision Theory: Bayesian Classifier, Discriminant Functions, and Minimum Error Rate Classification
- Naïve Bayes Classifier
- Logistic Regression Model and Parameter Estimation (Maximum-Likelihood)
- Dimensionality Reduction Technique: Principal Component Analysis (PCA)
- Non-parametric Techniques: K-Nearest Neighbour (KNN) and Density Estimation
- K-means Clustering
- Decision Tree (Entropy, Gini Impurity Index)
- Support Vector Machine (SVM)
- Random Forest, Ensemble Learning, Bagging, and Boosting

Learning Outcomes

Gain proficiency in data analysis and visualisation techniques essential for extracting insights from datasets. Dive into various machine learning algorithms, including supervised, unsupervised, and reinforcement learning and tasks such as classification and regression. Understand the theoretical background of supervised methods like Linear and Logistic regression, SVM, decision trees and unsupervised methods, including clustering, KNN, and dimensionality reduction techniques (PCA).

Module 6: Neural Networks

- Neurons, Perceptron Convergence Theorem, Relation between the Perceptron and Bayes' Classifier, Batch Perceptron Algorithm, Adaptive Filtering Algorithm, Least Mean Square (LMS) Algorithm, Multilayer Perceptron, Feedforward Operation, Batch and On-line Learning, Activation Function, Backpropagation Algorithm, Rate of Learning, Stopping Criteria, XOR Problem, Loss Function, Bias and Variance, Regularisation, Cross-Validation, and Early Stopping Criteria

Programme Curriculum

- Demonstration of All Machine Learning Algorithms for Classification and Regression Applications

Learning Outcomes

Delve into the theory and design of Artificial Neural Networks (ANNs) for classification and regression tasks, mastering essential concepts like backpropagation and stochastic gradient descent for training ANNs. Gain the necessary practical skills to implement all the algorithms using Python libraries like NumPy, pandas, scikit-learn, and Keras.

Module 7: Fundamentals of Deep Learning, Architectures and Recent Advances

Basics of Deep Learning
- Importance of Deep Learning
- Learning from Large Datasets
- Types of Data and Architectures
- End-to-end Model Design for Feature Learning and Decision-making

Convolutional Neural Network (CNN)
- Architecture Design
- Training Methodology of CNN
- Use Cases
- State-of-the-art CNN Models
- Python Demo on Object Detection/Image Classification

Recurrent Neural Network (RNN) and Long-Short Term Memory (LSTM)
- Modelling of Time-series Data
- Architecture Design of RNN
- Training Methodology of RNN
- Architectures of LSTM and Advantages over RNN
- Use Cases
- Python Demo on Machine Translation and Stock Prediction

Programme Curriculum

Autoencoder (AE)
- Deep Learning for Unsupervised Learning
- Architecture Design of AE
- Convolutional AE
- Training with Unlabelled Data
- Use Cases
- Python Demo in Denoising and Dimensionality Reduction

Generative Modelling

Subtopic 1 - Variational Autoencoder (VAE):
- Fundamentals of Generative Modelling
- Architecture of VAE
- Estimating Data Distribution
- Training Methodology of VAE
- Use Cases
- Python Demo for Image Generation

Subtopic 2 - Generative Adversarial Network (GAN)
- Generative Modelling as a Game-theoretic Approach
- Architecture Design of GAN
- Training Methodology of GAN
- Use Cases
- Python Demo on Image Generation and Style Transfer

Subtopic 3 - Diffusion:
- Generative Modelling Through Denoising
- Architecture Design of Diffusion Models
- Training of Diffusion Models
- Python Demo on High-quality Image Generation

Attention and Transformer:

- Attention Mechanism
- Advantages of Attention
- Architecture Design of Transformers
- Training of Transformer
- Python Demo on Language Translation Using Transformer

Programme Curriculum

Special Topics -

Transfer Learning
- Leverage Knowledge from One Task to Improve Performance on another Task
- Pre-training on Large Datasets
- Fine-tuning DL Models on Small Dataset
- Use Cases
- Python Demo on Transfer Learning in Computer Vision

Knowledge Distillation
- Optimisation of DL Models
- Transfer Knowledge from a Complex Teacher Model to a Simpler Student Model
- Training Methodology for Distillation
- Use Cases
- Python Demo on Knowledge Distillation in Computer Vision and Natural Language Processing

Learning Outcomes

Understanding the advantages of deep learning. Gain in-depth knowledge of deep architectures such as CNNs, RNNs, LSTMs, GRUs, Attention mechanisms, Transformers, and Autoencoders. A theoretical and practical understanding of the architectures, along with insights into design choices for better model development. Essential model training concepts like regularisation, dropout, data augmentation, batch normalisation, and hyperparameter tuning are explored for effective optimisation. Popular generative methods for AI applications such as VAEs, GANs, and Diffusion models are discussed alongside advanced topics like transfer learning, knowledge distillation, network pruning, and quantisation. Hands-on demos using TensorFlow and PyTorch on images, text, time series, language data, etc., are included for all architectures, equipping with practical skills to excel in the field of deep learning.

Programme Curriculum

Module 8: Computer Vision

- Industry Use Cases and Applications of Computer Vision
- Case Studies in Computer Vision
- Latest Trends in Computer Vision

Learning Outcomes

Gain an overview of computer vision and its industry applications.

Module 9: Speech Recognition

- Latest Industry Use Cases and Applications of Speech Recognition
- Case Studies in Speech Recognition
- Latest Trends in Speech Recognition

Learning Outcomes

Gain fundamental understanding of speech recognition. Acquire the knowledge about applications and latest trends of speech recognitions along with the challenges involved.

Module 10: NLP

- Latest Industry Use Cases and Applications of NLP
- Case Studies in NLP
- Latest Trends in NLP

Learning Outcomes

Get introduced to the concept of NLP. Also, learn about the industry applications and common tasks of NLP.

Capstone Project

Bring Your Own Project

Projects, Assignments, and Case Studies*

- MNIST digit recognition using DNN, CNN, and SVM.

- Classification of real news and fake news using decision trees.

- Prediction of the iris flower species using Naive Bayes classification.

- Classify photos of dogs and cats using Deep Convolutional Neural Network.

- To build a movie recommender model using K-means clustering.

- Identification of IoT devices using experimental radio spectrum dataset and deep learning.

- German Traffic Sign Recognition Benchmark: Develop a Feed Forward Neural Network and then a Convolutional Neural Network to classify between the different road signs in the dataset given below. Test it using images from the internet to validate the functioning of your model.

- CIFAR-10 Object Recognition: Develop a Convolutional Neural Network to classify between the different classes of the datasets given below. Test it using images from the internet.

- Sentiment analysis using Naive Bayes Classifier.

- Application of deep learning in medical diagnosis using health data.

- Credit card fraud detection using Random Forest Classifier.

- Music recommendation system using K-NN Algorithm.

- Image compression using K-means Clustering.

ML/DL Tools Used

python™

NumPy

scikits learn
machine learning in Python

TensorFlow

pandas

matplotlib

K Keras

OpenCV

SciPy

Career Support

Personal Branding	Profile creation on professional networking platforms and focus on personal branding	
Business Communication	Role and importance of effective communication in professional world	
Industry Session -1	Session by industry expert	
Job search Strategy	Resume building and review	
Interview Preparation	Pre, in and post interview practices	
1:1 Personalised Coaching	1:1 personalised coaching - 45 minutes each learner	
Industry Session -2	Session by industry expert	

Note: Career support facility is offered by TimesPro. IIT Delhi is not responsible for the same.

Programme Details

Eligibility
Graduates in Science, Technology, Engineering, or Mathematical Sciences

Programme delivery
Online Direct-to-Device (D2D)

Class Schedule
Saturday and Sunday
10:00 a.m. to 12:00 p.m.

Admission Criteria
Selection is based on application review and interview with the faculty
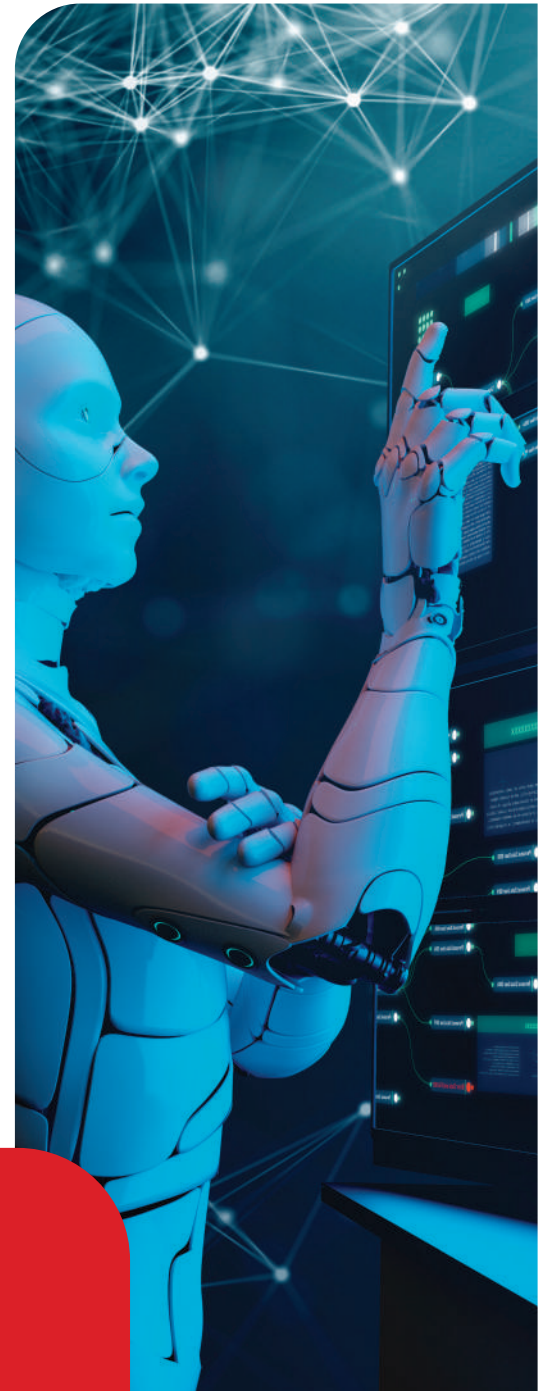
Duration
6 months
- 76 hours live online sessions
- 76 hours self paced
- 20 hours (3 weeks) capstone project
- 4-6 hours of masterclasses on ChatGPT

Campus Immersion
An offline one-day campus immersion for interaction between faculty and learners in IIT Delhi campus (optional for learners to attend).

Evaluation
- 50% - End of programme MCQ-based exam
- 20% - Assignments/quizzes
- 20% - Capstone Project
- 10% - Attendance

Certification*

- Candidates who score at least 50% marks overall and have a minimum attendance of 50%, will receive a 'Certificate of Completion' from CEP, IIT Delhi.

- Candidates who score less than 50% marks overall and have a minimum attendance of 50%, will receive a 'Certificate of Participation' from CEP, IIT Delhi.

- The organising department of this programme is the Department of Electrical Engineering, IIT Delhi.

Only e-certificates will be issued by CEP, IIT Delhi for this programme.

Programme Coordinator

DR. MANAV BHATNAGAR

Professor

Department of Electrical Engineering,
Indian Institute of Technology Delhi

Dr. Manav Bhatnagar is currently a Professor with the Department of Electrical Engineering, IIT Delhi, New Delhi, India, where he is also a Brigadier Bhopinder Singh Chair Professor. He holds a global rank of 517 in the area of Networking and Telecommunications among the top 2% of scientists in a global list compiled by the prestigious Stanford University. He is a Fellow of IET, INAE, NASI, IETE, and OSI. He has received the prestigious NASI-Scopus Young Scientist Award, the Shri Om Prakash Bhasin Award, and the Dr. Vikram Sarabhai Research Award. He has been an Editor of the IEEE Transactions on Wireless Communications during 2011–2014. Currently, he is an Editor of the IEEE Transactions on Communications. He has published more than 100 high quality IEEE journal papers, of which 10 are single-authored. His research interests include signal processing for MIMO systems, free-space optical communication, satellite communications, and machine learning.

Programme Faculty

DR. TANMOY CHAKRABORTY

Associate Professor

Department of Electrical Engineering,
Indian Institute of Technology Delhi

Dr. Tanmoy Chakraborty holds the positions of Associate Professor of Electrical Engineering and Associate Faculty of the Yardi School of AI at IIT Delhi. Previously, he served as an Associate Professor of Computer Science at IIIT Delhi, where he also held the roles of head of the Infosys Centre for AI and Project Director of the Technology Innovation Hub. He leads the Laboratory for Computational Social Systems (LCS2), a research group specializing in Natural Language Processing, Computational Social Science, and Graph Mining. His current research primarily focuses on empowering frugal language models for applications such as mental health and Cyber-informatics. Tanmoy obtained his PhD from IIT Kharagpur in 2015 as a Google PhD scholar and worked as a postdoctoral researcher at the University of Maryland, College Park. Tanmoy has received numerous awards and honors, including the Ramanujan Fellowship, faculty awards/gifts/grants from industries like Facebook, Google, Accenture, LinkedIn, the PAKDD'22 Early Career Award, IEI Young Engineers Award, and the Paired Indo-German Early Career Award, and several faculty excellence awards. He is an ACM Distinguished Speaker and has authored two books: "Social Network Analysis" (a textbook) and "Data Science for Fake News".

Programme Faculty

DR. MANOJ B R

Assistant Professor

Department of Electronics and Electrical Engineering,
Indian Institute of Technology Guwahati

Dr. Manoj B R is an Assistant Professor in the Department of Electronics and Electrical Engineering at the Indian Institute of Technology Guwahati, India. He received a B.E. degree in Electronics and Communication Engineering from the Visvesvaraya Technological University, India, in 2007, a M.Tech. degree in Signal Processing from the Indian Institute of Technology Guwahati, in 2011, and a Ph.D. in Wireless Communications from the Indian Institute of Technology Delhi, in 2019. He has gained a mixed exposure to academic and industrial backgrounds. Before joining IIT Guwahati, he was an Early Doctoral Research Fellow with the Indian Institute of Technology Delhi; a Postdoctoral Researcher with the Division of Communication Systems, Department of Electrical Engineering, Linköping University, Sweden; and a Senior Researcher with the Radio Transmission Technology Lab, Huawei Technologies, Stockholm, Sweden. His research interests include wireless communication and networks, machine learning, deep learning for wireless communications and signal processing, security and robustness of deep learning-based wireless systems, large-scale sensing using radio signals, buffer-aided relaying networks, Markov chains and their applications, diversity combining, and multi-hop communications.

Programme Faculty

DR. ANIRBAN DASGUPTA

Assistant Professor

Department of Electronics and Electrical Engineering,
Indian Institute of Technology Guwahati

Dr. Anirban Dasgupta is an Assistant Professor in the Department of Electronics and Electrical Engineering at the Indian Institute of Technology (IIT) Guwahati. He received his doctorate (Ph.D.) in Electrical Engineering from the Indian Institute of Technology Kharagpur in 2019, his Master of Science (MS) by research in Electrical Engineering from the Indian Institute of Technology Kharagpur in 2014, and his Bachelor of Technology (B.Tech.) in Electrical Engineering from the National Institute of Technology, Rourkela, in 2010. He was the co-founder of the start-up company 'Humosys Technologies Private Limited', and worked there as a Chief Technical Officer (CTO) from January 2019 to July 2021. In July 2021, he joined Boeing India Private Limited, Bengaluru, as a Data Scientist, and worked there till November 2021. From December 2021 onwards, he is associated with IIT Guwahati. He has ten publications in peer-reviewed international journals, which include five IEEE Transactions. He has also filed three Indian patents and published 16 IEEE conferences and one book chapter. His research areas include machine learning, the internet of things, digital signal and image processing for human cognition, and affective computing. He has served as a reviewer in more than 10 journals, which include IEEE Transactions on Signal Processing, IEEE Transactions on Image Processing, and IEEE Transactions on Pattern Recognition and Machine Learning.

Programme Faculty

DR. AASHISH MATHUR

Assistant Professor

Department of Electrical Engineering,
Indian Institute of Technology Jodhpur

Dr. Aashish Mathur (Senior Member, IEEE) received the B.E. degree (Hons.) in Electronics and Instrumentation Engineering from the Birla Institute of Technology and Science, Pilani, Pilani, Rajasthan, India, in 2011, the M.Tech. degree in Telecommunication Technology and Management from IIT Delhi, New Delhi, India, in 2013, and the Ph.D. degree in power line communications from the Department of Electrical Engineering, IIT Delhi. He was a Software Engineer with Intel Technology India Pvt. Ltd., Bangalore, India, briefly before joining IIT Delhi for his PhD in 2013. He is currently an Assistant Professor with the Department of Electrical Engineering, IIT Jodhpur, India. He has also worked as an Assistant Professor with the Department of Electrical and Electronics Engineering, BITS Pilani, Pilani Campus, and the Department of Electronics Engineering, IIT (BHU), Varanasi. He was engaged as a visiting faculty at the Indian Institute of Information Technology, Kota, India, for the 2nd Semester, 2018-19. He received the Best Student Paper Award for his co-authored paper at the 2017 Conference on Decision and Game Theory for Security (GameSec 2017), Vienna, Austria. He was awarded the Early Career Research Award by the Science and Engineering Research Board, DST, Government of India, in 2019. He was awarded the Teaching Excellence Award at IIT Jodhpur in 2019. He served as an Adjunct Faculty (part-time) from 2019–2022 on the 5G testbed project at IIT Delhi. He was recognised as an Exemplary Reviewer 2021 for IEEE Transactions on Communications. His research interests include power line communications, visible light communications, free-space optical communications, and physical layer security. He has published research papers in reputed IEEE journals and conferences. Some of his research works have appeared as popular articles in IEEE Communications Letters. He has also served as a reviewer for reputed IEEE journals and conferences.

Programme Faculty

NAYAN MONI BAISHYA

Senior Research Scholar

Department of Electronics and Electrical Engineering,
Indian Institute of Technology Guwahati

Nayan Moni Baishya is a Senior Research Scholar in the Image Processing and Computer Vision (IPCV) Lab at the Department of Electronics and Electrical Engineering, IIT Guwahati, under the guidance of Prof. P.K. Bora and Prof. Salil Kashyap. His current research interest focuses on developing end-to-end deep learning (DL)-based systems for image manipulation detection and localization. He is also a Junior Research Fellow under Prof. Manoj BR, working on the project "Secure and Reliable Techniques for Deep Learning-based 5G and Beyond Wireless Systems". He received his B.Tech. degree in Electronics and Electrical Engineering from IIT Guwahati in 2016. His broader research interests include Computer Vision, Multimedia Forensics, Applied DL, and DL security. He has 7+ years of practice experience in applying ML and DL algorithms for different problem scenarios, with in-depth technical expertise in Python, TensorFlow, PyTorch, Scikit-Learn, NumPy, etc. He has conducted workshops on the foundations and applications of ML and DL at IIT Guwahati.

Programme Faculty

DR. PRATITI PAUL

Presidential Postdoctoral Fellow

Virginia Tech, USA

Dr. Pratiti Paul is the recipient of the Presidential Postdoctoral Fellowship and is currently working at Virginia Tech, Arlington, USA. Before joining Virginia Tech, she had worked as a Research Associate at the University of Edinburgh, UK. She received her Ph.D. from the Indian Institute of Technology, Delhi, in 2023. She has published multiple research papers in reputed peer-reviewed IEEE journals, magazines, and conferences. She is also serving as a technical reviewer for IEEE Transactions on Communication and the IETE Journal of Research. Her research interests include free-space optical communications, multiple-input multiple-output systems, radar signal detection, signal processing, physical layer security, and machine learning applications in wireless communications.

Testimonials

"

Mathematics can do magic! During my academic years I was just doing the math to pass exams, but after this course, I know now from here where I need to go. I had to go through the recordings 3-4 times but every time I learned something new and understood why IIT is awesome.

Brajesh
System Administrator

"

Now I have an in-depth understanding of how any AI application works. I am confident that I can explore and innovate some new AI-based applications for our OTT/Broadcast industry. Overall, excellent experience and a very knowledgeable faculty.

Sunil
IT Engineer

"

The knowledge that is given is very nice and the lecturers conveyed that knowledge easily. The knowledge that was given was lucid and concepts were cleared at every step. There were doubts clearing sessions. The study material that was provided was very easily understood. The teacher to student ratio was also precise. The video quality was very clear and there were video lectures recorded that can be downloaded for use. The reading material provided detail understanding.

Shubhrans Kukareti

Programme Fee

Particulars	Amount (₹)
Programme Fee	1,69,000
GST @18%	30,420
Total Fees	1,99,420

Note:

- All fees should be submitted in the IITD CEP Account only, and the details will be shared post-selection.

- The receipt will be issued by the IIT Delhi CEP account for your records.

- Easy EMI options available.

- Loan and EMI Options are services offered by TimesPro. IIT Delhi is not responsible for the same.

Withdrawal and Refund

- Candidates can withdraw within 15 days from the programme start date. A total of 80% of the total fee received will be refunded. However, the applicable tax amount paid will not be refunded on the paid amount.

- Candidates withdrawing after 15 days from the start of the programme session will not be eligible for any refund.

- If you wish to withdraw from the programme, you must email cepaccounts@admin.iitd.ac.in and icare@timespro.com, stating your intent to withdraw. The refund, if applicable, will be processed within 30 working days from the date of receiving the withdrawal request.

Instalment Schedule

Instalment	Instalment Date	Amount (₹)**
Registration Fee*	To be paid at the time of registration	10,000
I	Within one-week of offer rollout	59,000
II	29th October, 2024	50,000
III	13th December, 2024	50,000

Note:

- *Registration fee of ₹10,000 will be charged for processing the selected applications only, post confirmation email from the institute. The registration fee is also part of the total programme fee.

- An offer letter from CEP, IIT Delhi will be released post the successful receipt of the Registration Fee.

- **GST@ 18% will be charged extra in addition to the fee

Programme Timelines

Last Date to Apply	14th September, 2024
Programme Start Date	21st September, 2024
Programme End Date	29th March, 2025

APPLY NOW

Programme offered by Continuing Education Programme (CEP), IIT Delhi

भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

The Indian Institute of Technology Delhi (IIT Delhi) is one of the 5 initial IITs established for training, research, and development in science, engineering, and technology in India. Established as the College of Engineering in 1961, the Institute was later declared an Institution of National Importance under the "Institutes of Technology (Amendment) Act, 1963" and was renamed as "Indian Institute of Technology Delhi". It was then accorded the status of a Deemed University with powers to decide its own academic policy, conduct its own examinations, and award its own degrees. Since its inception, over 48,000 students have graduated from IIT Delhi in various disciplines including Engineering, Physical Sciences, Management, and Humanities & Social Sciences.

For more details, please visit: www.iitd.ac.in

Continuing Education Programme (CEP)

Executive education is a vital need for companies to build a culture that promotes newer technologies and solutions and builds a workforce that stays abreast of the rapidly transforming needs in the technological, business, and regulatory landscape. Committed to the cause of making quality education accessible to all, IIT Delhi has launched Online Certificate Programmes under eVIDYA@IITD (ई-विद्या @IITD), enabling Virtual and Interactive learning for Driving Youth Advancement @IITD for Indian as well as international participants.

These outreach programmes offered by the Indian Institute of Technology Delhi (IIT Delhi) are designed to cater to the training and development needs of various organisations, industries, society, and individual participants at national and international levels with a vision to empower thousands of young learners by imparting high-quality Online Certificate Programmes in cutting-edge areas for their career advancement in different domains of engineering, technology, science, humanities, and management.

For more details, please visit: http://cepqip.iitd.ac.in

2nd	**2**nd
in NIRF India Engineering Rankings 2023	QS World University Rankings 2024 in India

भारतीय प्रौद्योगिकी संस्थान दिल्ली
INDIAN INSTITUTE OF TECHNOLOGY DELHI

Online Certificate Programmes are offered by the Indian Institute of Technology Delhi under the aegis of Continuing Education Programme (CEP) so that the Institute can realise its vision of serving as a valuable resource for industry and society, and fulfil its mission to develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

Campus Immersion

There will be an optional one-day campus immersion at IIT Delhi for learners to attend.

Batch 02