







E&ICT Academy
IIT Guwahati



Advanced Certification Programme in **Artificial Intelligence and Machine Learning**

Make a big move in the world of AI

 11 Months |  Online + Live Sessions + Campus Immersion

 E&ICT Academy, IIT Guwahati |  Dual Specializations
Alumni Status

Additional
Certification from















In Collaboration with



Programme Summary

Advanced Certification Programme in Artificial Intelligence and Machine Learning

 Institute Name E&ICT Academy, IIT Guwahati	 Programme Duration 11 months	 Cost INR 1,35,000 + GST
 Learning Mode Pre-recorded videos + live sessions	 Weekly Effort 8-10 hours/week (additional effort required for non-technical students)	 Faculty Industry Experts and Practitioners
 Campus Immersion Two-day optional campus immersion event at IIT Guwahati (Only for successful learners)	 Alumni Status Alumni status upon successful completion from E&ICT Academy, IIT Guwahati	 Guest Faculty IIT Guwahati
 Dual Specializations Choose any 2 from 5 specializations like Cloud Computing, No-Code, Cybersecurity, XAI, and IoT	 Eligibility Minimum Graduate or Diploma Holder (10+2+3); Basic Math and programming knowledge preferred	 E&ICT Academy, IITG + IBM Certificates Participants will be awarded a verified digital certificate and hardcopy from E&ICT Academy, IIT Guwahati and three IBM certificates upon successful completion of programme

Learning Experience

- **Pre-recorded videos - Flexibility** - Learn at your own pace, fitting around your schedule
- **Virtual Labs** - Access cutting edge virtual labs for real world simulation and hands on learning
- **On-Demand learning & Assignments** - Revisit concepts anytime for deeper understanding
- **Masterclass by top IITG faculty** - Learn from world-class faculty
- **Cohort-based learning** - Connect and network with peers through discussion boards
- **IBM Masterclasses** - Sessions by experts on latest topics, tools, and trends

Frequently Asked Questions

Are there any LIVE sessions with the institute faculty in this programme?

This programme contains high-quality pre-recorded videos by industry experts, along with masterclasses from IIT Guwahati faculty and live sessions from industry experts.

What is the role of the Industry Experts? Are they institute faculty?

Industry Experts will conduct live sessions, help with doubt clearing, cover specific topics deeper and share real-world examples wherever needed. They are not faculty of the institute.

Who grades/ gives inputs on the assignments and projects?

The grading frameworks for assignments are developed in partnership with industry experts and the Emeritus grading team.

Is there a qualifying mark/grade to get the final certification in this programme?

Yes, the qualifying mark is 70%.

What if I miss the assignments for a particular week? Can I attempt them later?

If you miss assignments for a particular week, you can complete them anytime before the programme concludes. We provide flexibility for you to catch up and submit assignments at your convenience within the programme's duration.

Who is the faculty for the LIVE Masterclass/Online sessions/Doubt Clearing sessions?

Masterclasses are conducted by IITG faculty. Doubt-clearing sessions are carried out by the Industry Experts, as they monitor individual student progress.

What if I don't find the programme appropriate for me after starting the sessions? Can I seek a refund?

We encourage participants to complete the programme to fully understand the concepts and derive valuable learning outcomes. Should you still feel the need to stop your learning journey, a refund request can be initiated before the programme commences. However, after the programme commences, the fee becomes non-refundable.

What type of certificate will I receive?

Upon successful completion of the programme, you will receive a smart digital certificate and a hard copy. The smart digital certificate can be shared with friends, family, schools, or potential employers. You can use it on your cover letter, resume and/or display it on your LinkedIn profile.

For how long will I have access to the learning materials?

You will have access to the online learning platform and all the videos and programme materials for 12 months following the programme end date. Access to the learning platform is restricted to registered participants per the terms of agreement.

Note: This programme summary is provided only for your convenience. You are advised to refer to the programme brochure for more information.

Learn AI and ML Today for a High-Growth Career

Teraflop computing, scalable infrastructure and gigabit internet have opened up many new AI applications for businesses and consumers.

25%-35% growth

compounded annual growth rate in the AI market. NASSCOM and BCG have also made projections and expect exponential growth in the AI market to reach **\$17 billion by 2027**.

BUT

2,13,000 positions remain vacant

India has a **51%** demand-supply gap in AI and ML talent, with a demand of **629,000 professionals** and a supply of **416,000**.

NASSCOM, 2023

The top skill sets that AI employers are looking out for:

- Machine Learning
- Natural Language Processing
- Neural Networks
- Analytics and Pattern Recognition
- Generative AI

Source: PTI

As an aspiring professional, you can now master cutting-edge AI skills through the **Advanced Certification Programme in Artificial Intelligence and Machine Learning by E&ICT Academy, IIT Guwahati**, paving the way for a long and rewarding career.

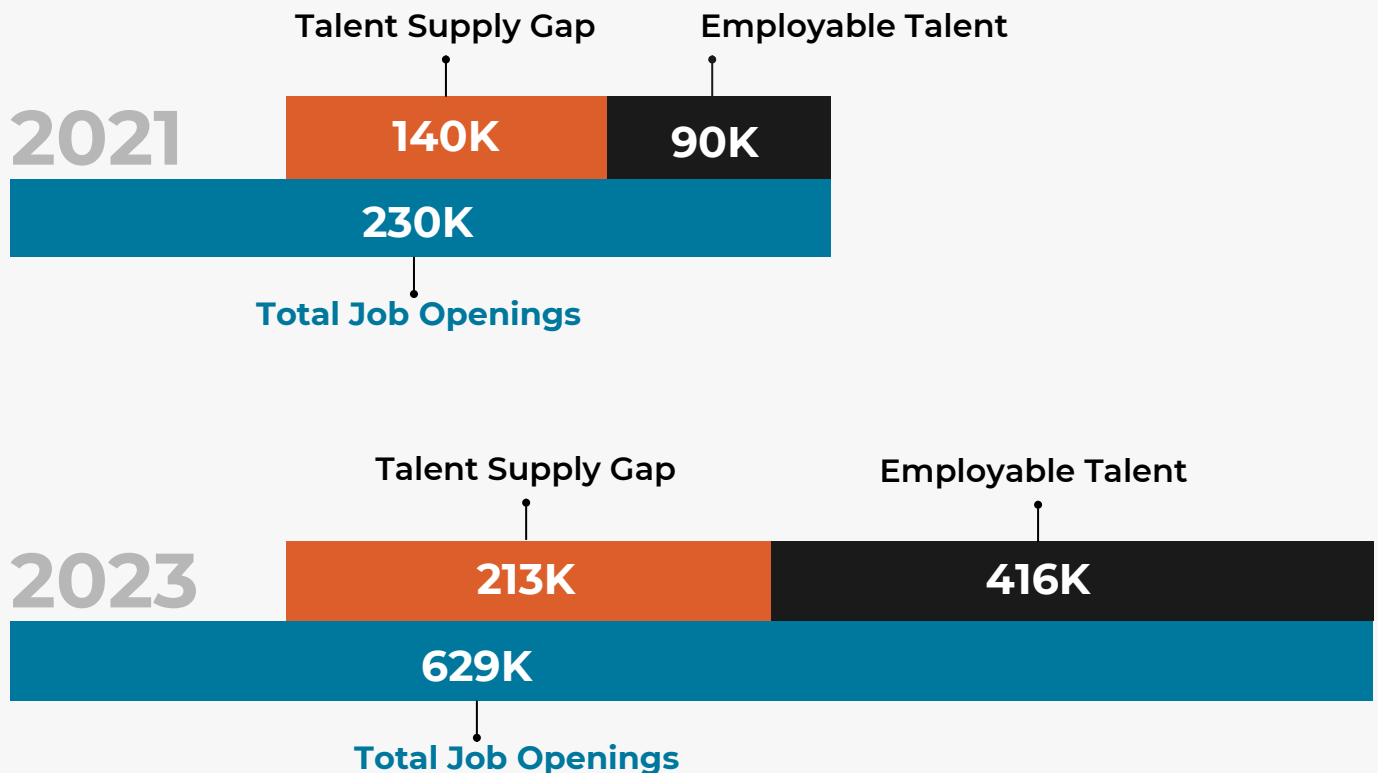
10X Opportunities in AI and ML by 2028

87%

of Indian enterprises are likely to boost their annual AI spending by over 10 percent in the next three years.

94%

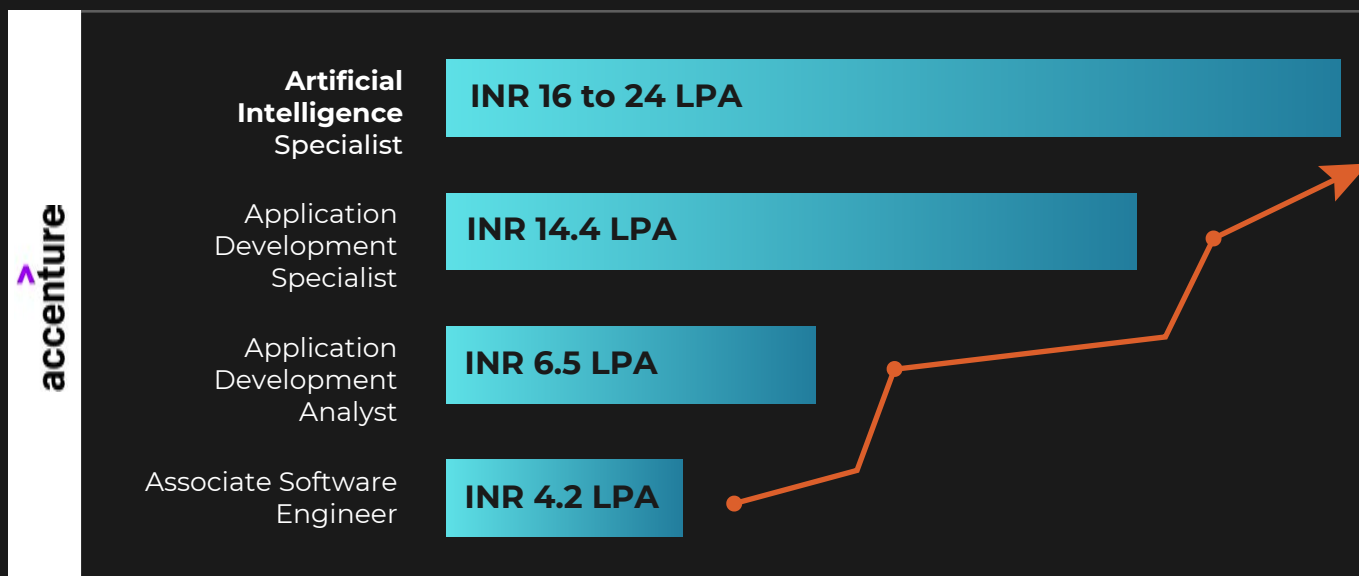
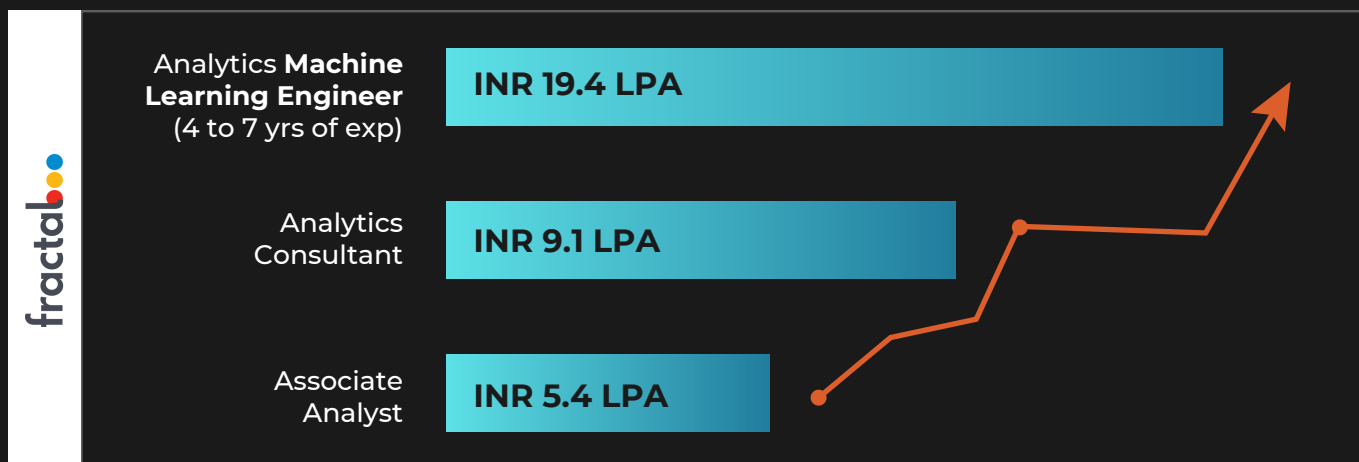
of AI adopters are likely to increase their use of AI and ML applications in the next three years.



Source: NASSCOM, 2023

The talent supply-demand gap presents a significant opportunity for early to senior professionals across industries to transition into AI and ML roles in the coming years.

Acquiring AI and ML Skills Can Result in Salaries 4X Higher



Source: Glassdoor

These salary figures are for a similar work experience bracket.

Deloitte.

IBM

intel®

amazon

LinkedIn

tcs TATA CONSULTANCY SERVICES

Salaries for AI roles in India are among the highest in the country. Your salary will vary based on your skills, experience, and the city where you work.

Empower Your AI Career with Cutting-Edge Industry Insights

Imagine a world sculpted by intelligence. A world where algorithms predict, machines learn, and innovation knows no bounds. This is the world of Artificial Intelligence and Machine Learning.

At the heart of this revolution lies the **Advanced Certification Programme in AI and ML by E&ICT Academy, IIT Guwahati**. This isn't just a programme; it's a journey into the epicenter of technological advancement. This programme is designed to transform aspiring individuals into **industry-ready AI and ML experts**.

- **E&ICT Academy, IIT Guwahati:** A strategic and innovative institution that aims to provide specialised training through its rigorous curriculum, equipping you with the foundational knowledge and state-of-the-art techniques in AI and ML.
- **IBM:** As a global technology leader, IBM brings its industry expertise and cutting-edge tools to provide real-world insights and practical applications.
- **Emeritus:** A global leader in online education, Emeritus ensures a seamless learning experience with world-class instructional design and support services.

The E&ICT Academy, situated within the state-of-the-art technology complex at the prestigious Indian Institute of Technology Guwahati, serves as a dynamic hub for innovation. Its mission of providing specialised training is also supported by IIT Guwahati that is:



Ranked **7th**
in India (NIRF
Engineering, 2024)



Ranked **9th**
in India (NIRF
Engineering, 2024)



Top **300** in
the world
QS World University
Rankings 2025



Who Can Benefit From this Programme?

This programme is designed for professionals seeking to harness the power of AI and ML to drive innovation and solve complex problems. Whether you're a technical professional looking to deepen your expertise or a non-technical leader aiming to understand AI's potential, this programme is tailored to your needs.

Specifically, this programme is ideal for:



Data Scientists and Data Analysts: Looking to advance their skills in cutting-edge AI and ML techniques and tools



Software Engineers: Seeking to transition into AI/ML roles or enhance their existing projects with AI capabilities



Business Analysts and Consultants: Aiming to leverage AI to drive data-driven insights and decision-making



Product Managers and Product Owners: Interested in incorporating AI/ML into product development and strategy



Executives and Leaders: Aspiring to understand the strategic implications of AI and ML

By the end of this programme, you'll be equipped to:

- Lead AI/ML initiatives: Drive innovation and solve complex business problems
- Make data-driven decisions: Use AI to extract meaningful insights from data
- Collaborate with AI/ML teams: Effectively communicate with data scientists and engineers
- Stay ahead of the curve: Keep up with the latest advancements in AI and ML

Elevate Your Career with AI



Launch Your AI and ML Career with the Most Comprehensive Curriculum
Leverage the latest industry-aligned curriculum that covers basic to advanced AI and ML concepts, using the widest range of AI and ML tools and libraries.



Gen AI Accelerated Learning
Dive deep into the world of Gen AI with a curriculum designed to equip you with the latest advancements.



IBM Collaboration for Global Recognition
Gain three technical certifications from IBM on Tensorflow, Chatbot building and Pytorch. Attend masterclasses by IBM experts on latest tools and trends.



Dual Specialization
Choose 2 out of 5 cutting-edge specializations - No Code AI, Explainable AI (XAI), Cloud Computing, Cybersecurity and IoT.



GitHub Portfolio Building, Mastering Kaggle & Latest Research Papers
Get started on GitHub and Kaggle through programme projects. Attend live sessions on the latest AI and ML research papers.



Flexible Learning with a Blended Learning Model
Balance work and studies with our blended learning approach, combining recorded video content with live interactive sessions.



Highest Number of Tools and Libraries Across AI and ML Programmes*
Master practical skills by learning 35+ latest tools and libraries like TensorFlow, Keras, Scikit-Learn and the latest Gen AI models like Mistral, Phi and Solar.



E&ICT Academy, IIT Guwahati Certification
Earn a prestigious, industry-recognized certificate from E&ICT Academy, IIT Guwahati.



Join the E&ICT Academy, IIT Guwahati Alumni Network
Connect with a global network of E&ICT Academy, IIT Guwahati successful alumni.



Empowered by Emeritus Career Services and IIMJobs Pro Membership
Benefit from an IIMJobs Pro-membership to accelerate your career growth and access smart resume building automation.

*Highest number of tools and libraries among educators offering AI and ML technical certificate programmes.

The Edge You Need: Why This AI and ML Programme Stands Out

Programme Features	Advanced Certification Programme in AI & ML by E&ICT Academy, IIT Guwahati,	Other Outdated/Non-Accredited Technical Certificate Programmes
Curriculum	An advanced, latest, and industry-aligned curriculum with Gen AI that covers trending topics - Explainable AI (XAI), No-Code, Recurrent Neural Networks, etc.	Outdated and traditional curriculum designed by a non-accredited institute
Specialisations	Gain exclusive dual specialisations out of Cybersecurity, No-Code, Cloud Computing, IoT, and XAI	No specialisations offered
Integration of AI and ML master classes	Live masterclasses on AI and Generative AI in AI and ML by IITG Faculty, covering applications with practical examples	Curriculum covering only the basics of Generative AI with no live masterclasses.
Highest no. of tools & libraries	Access 35+ tools and libraries with Gen AI's most recent open source models such as Mistral, Phi 2, and Solar in cutting-edge virtual labs	Curriculum covering fewer and outdated tools, with no access to virtual labs/masterclasses and little guidance from industry experts/faculty
Case studies/examples/projects	Master AI/ML with hands-on learning through over 60 projects, case studies, and real-world examples across various domains and industries.	Limited case studies from specific domains and industries
Recognition of certificate	E&ICT Academy, IIT Guwahati certification along with 3 IBM professional certificates that instantly add credibility to your resume	Low or no certification; usually from non-accredited institutes
Get started with Kaggle and GitHub portfolio	Learn how to build your own GitHub and Kaggle portfolio to stand apart from the crowd, become industry ready, and solve real world problems.	No guidance for personal brand building
Doubt resolution on the go	Get your doubts resolved within 24-48 working hours	Rarely offered
Flexible payment options	Yes	Yes

**Highest number of tools and libraries among educators offering AI and ML technical certificate programmes.*

Deliver Real-World Intelligence with



30+
Mini projects
and use cases



2 Days
Optional campus immersion
at IIT Guwahati for successful
learners



35+
Tools and libraries delivered
via virtual software labs



2-week
Capstone project



3
IBM Certifications



2 Specializations
5 cutting edge specialization
areas to choose from

More than 35 Practical Tools and Libraries Covered



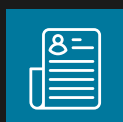
Note:

- Programme learning hours might change due to unavoidable circumstances, and revised details will be provided closer to the programme start date.
- The list of tools covered is not exhaustive. Revised details will be provided closer to the programme start date.
- All product and company names are trademarks or registered trademarks of their respective holders, and their use does not imply any affiliation with or endorsement by them.

Build Your Digital Portfolio with GitHub and Ensure Market-Readiness

Get an edge in the market with your digital portfolio on GitHub. Share code and collaborate with other data science enthusiasts on projects that add credibility to your resume.

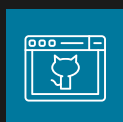
Additionally, you will also:



Create your own profile or optimise your existing one



Publish 2 projects (including the capstone project) on your GitHub portfolio



Get insights from industry experts on how/why GitHub is a key differentiator in the interview process

Solve Real-World Problems on Kaggle for Practical Application

Practice your data science skills on Kaggle and learn from the global community. With several application based problems and use cases, it gives you the required diversity in datasets and necessary preparation that is required to excel in data science jobs.

Additionally, you will also:



Work with datasets to clean them and build different models



Improve skills through data science competitions and benchmarks against experts



Showcase projects for potential employers by building a portfolio



Gain insights on personal experience of industry experts on Kaggle



Publish a course project in Kaggle

Industry-Recognised Certificate from E&ICT Academy, IIT Guwahati

Participants will be awarded a completion certificate and E&ICT Academy, IIT Guwahati Alumni status on successful completion of the programme.



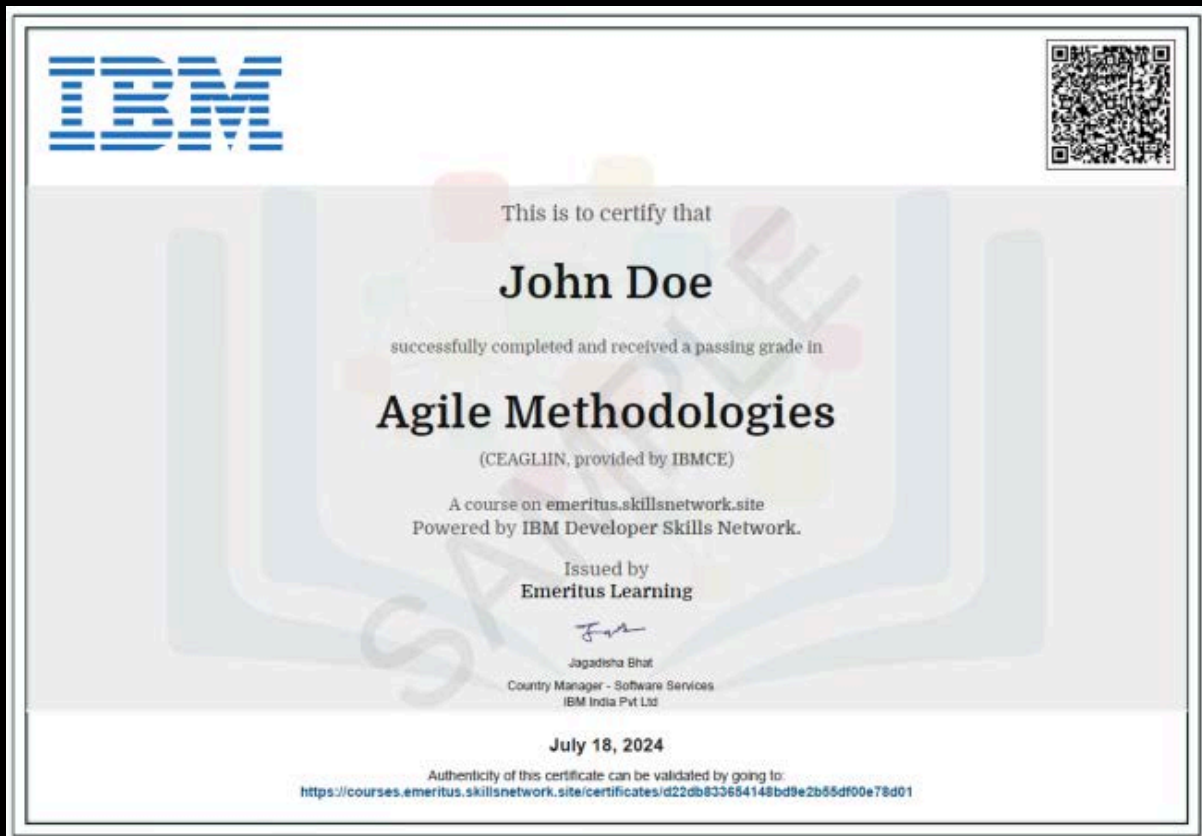
Note:

- All certificate images are for illustrative purposes only and may be subject to change at the discretion of E&ICT Academy, Indian Institute of Technology Guwahati.
- To receive the completion certificate, the participants must maintain a minimum 75% attendance and score a minimum of 70% in their exams.

IBM Certificates

Participants who successfully complete the programme will receive three IBM completion certificates as well as a certificate from E&ICT Academy, IIT Guwahati. They will be certified in the following topics:

1. PyTorch: Tensor, Dataset, and Data Augmentation
2. Deep Learning with TensorFlow
3. Build Your Own Chatbot



Note:

- All certificate images are for illustrative purposes only and may be subject to change at the discretion of IBM.

Programme Modules: Section 1

Module 01

Introduction to Data Science

- What is data science, history, learning path, why to learn it, its impact and its scope
- Participants sharing their Data Science journey, and where they are and what they do
- What do participants anticipate about data science and its scope?

Module 02

Mathematics and Statistics Fundamentals

- Vectors, Scalars, Matrix, Operations on Matrix, Determinants, Role of stats in DS, Types of data, Descriptive Stats, Intro to Probability, and Probability Distributions
- Inferential Statistics, Sampling, Estimation, Hypothesis, Type 1 and Type II errors, Z test, T test, Z score, and Confidence Interval

Module 03

Python Fundamentals

- Python basic Data Structures, Lists, Tuples, Sets, Dictionaries, Functions, and Loops
- Control Structures, File Handling, Comprehensions OOPs, Generators, and Libraries

Module 04

Data Analysis & Git Fundamentals

- Excel based (Importing, Grouping, Pivots), SQL based (Aggregation), Git Fundamentals, Collaboration and Version Control
- Python for Data science (Numpy, Pandas, Matplotlib, SciPy, Scikit-learn, etc.)

Module 05

Data and Feature Engineering

- Data cleaning, feature selection, and normalization
- Hands-on exercises, case studies, and discussions

Module 06

Supervised Learning - Regression

- Linear regression and evaluation metrics
- Multiple, Polynomial, Overfitting, Solution to Over Fitting

Module 07

Supervised Learning - Classification

- Evaluation metrics
- Logistic regression, Decision tree, Random Forest, SVM, Model Deployment basics (store, load, predict)

Module 08

Unsupervised Learning

- Basics, Distance Matrix and Applications
- How to implement clustering (Agglomerative clustering) and connect with business requirements, Algorithms (PCA, CFA), Association Rule Mining, Algorithm, DB Scan, Anomaly Detection (Nearest Neighbor, and Isolation Forest)

Module 09

Ensemble Modelling

- Ensemble technique with examples (its difference from supervised and unsupervised learning); types (Bagging and boosting)
- Bagging and boosting, different algorithms and libraries (Adaboost, GB, XGB, Catboost)

Module 10

Time Series Modelling

- Types of timeseries data, AR and MA Modelling
- ARIMA, FB Prophet, and implement data

Module 11

Recommendation Engine

- Similarities - how to measure (PSN correlation, Cosine), Distances (Manhattan, Euclidean), and Use cases
- What is recommendation engine, its purpose, types and how to build (libraries)

Module 12

Model Evaluation and Deep Learning Fundamentals

- Cross-validation, neural networks, activation functions, and DL frameworks
- Cross-validation, neural network coding, and applications

Module 13

Neural Network Basics

- Perceptrons, the math behind perceptrons, and Python implementation
- Introduction to MLPs, forward propagation, Python implementation, introduction, math derivation, and Python implementation

Module 14

Deep Learning Optimisation

- Introduction to optimisers, activation functions, loss functions and overfitting scenario
- Best practices in choosing optimizers, activation functions, loss functions, batch normalisation and dropout technique

Module 15

Convolution Neural Networks

- Convolution Neural Network (Filters - Feature Detectors, Pooling - Avg, Max, Padding and Stride), Basic Architecture
- Pre-trained Networks, Transfer Learning and Fine Tuning

Module 16

Recurrent Neural Networks

- Recurrent Neural Networks (Temporal Nature of Data, Recurrent Mechanism, Types of RNN), LSTM Gates, and GRU Gates
- Applications, Drawbacks of RNN, LSTM and its drawbacks, GRU, Attention Mechanism, and Transformers

Module 17

Unsupervised Learning Advanced

- Autoencoders, DBN, and RBM
- Applications of networks for various use cases

Module 18

Generative AI

- VAE, GAN, Architecture, Training Process of Generator and Discriminator, DCGAN, WGAN and other GANs, Introduction, and sequence generation
- Implementation and application

Module 19

Natural Language Processing

- Introduction to NLP, Text Preprocessing, Text Tokenisation, and Word Embeddings
- Text Classification, Use of Sequence models (RNN, LSTM, GRU), NER, Information Extraction, and Machine Translation

Module 20

Transformers

- Introduction, Transformer architecture, Attention Mechanism, and types (GPT, BERT, T5, etc.)
- Machine Translation and Text Generation

Module 21

Computer Vision

- Basic image processing techniques, image scaling, object detection algorithms, and image segmentation algorithms
- Video analysis, self-supervised learning techniques, and few shot learning

Module 22

Speech Recognition

- Basics of speech recognition, history, importance and applications
- Fundamentals of speech signals, feature extraction (MFCC, spectrogram), Speech Classification, Introduction to Speech Transcription (HMM, ASR models), and TTS systems

Module 23

Reinforcement Learning

- Introduction to RL, History, key concepts, applications, case studies, Markov Decision Process, Dynamic Programming (Bellman Equations, Policy Evaluation and Improvement)
- Monte Carlo Methods, Temporal Difference Learning, Q learning and its implementation

Module 24

Deep Reinforcement Learning

- Integration of Deep Learning in RL, Multi-agent RL, hierarchical RL, meta-RL, practical applications
- Neural networks in RL, DQN Architecture and its implementation, Policy Gradient Methods

Module 25

Large Language Models

- LLM - definition, Pretraining objectives, fine-tuning, transfer learning, prompt engineering, applications, Other LLMs, and Embedding
- Prompt Engineering, Agents, and Vector DBs

Module 26

REST API

- REST API concept, POST, GET, PUT, and DELETE
- Routing Applications

Module 27

Streamlit

- Introduction to Streamlit, Text, and Widgets
- Building application on Streamlit

Module 28

Deployment of ML Ops

- Ethical considerations (banking, ecommerce sectors); pushing code to repository
- Responsible AI; Explainable AI; Registry, Model & Data Monitoring

Capstone Project

IBM Certificate Modules: Section 2

Certificate 1

Deep Learning with TensorFlow

- Introduction to TensorFlow
- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)
- Unsupervised Learning
- Autoencoders

Certificate 2

Build Your Own Chatbot

- Introduction to Chatbots
- Working with Intents
- Working with Entities
- Defining the Dialog
- Deploying your Chatbot
- Advanced Concepts – Part 1
- Advanced Concepts – Part 2

Certificate 3

PyTorch: Tensor, Dataset and Data Augmentation

- Overview of Tensors
- Tensors 1D
- Two-Dimensional Tensors
- Derivatives in PyTorch
- Simple Dataset
- Dataset and Data Augmentation



Specialization Modules: Section 3

Specialization 1

Cybersecurity

- Introduction to Cybersecurity
- Roles and responsibilities in Cybersecurity
- Key companies in Cybersecurity
- Types of Cybersecurity Threats
- Cybersecurity Frameworks and Standards
- Technical aspects of Cybersecurity
- Relevance of AI in Cybersecurity
- Recent AI developments in Cybersecurity
- AI use cases in Cybersecurity
- Challenges and ethical concerns in AI for Cybersecurity
- Future of AI in Cybersecurity

Specialization 2

Cloud Computing

- Introduction to Cloud Computing
- Roles and responsibilities in Cloud Computing
- Key Cloud Computing Service Models
- Types of Cloud Deployments
- Key companies in Cloud Computing
- Cloud Computing services and offerings
- Technical aspects of Cloud Computing
- Relevance of AI in Cloud Computing
- Recent AI developments in Cloud Computing
- AI use cases in Cloud Computing
- Future of AI in Cloud Computing

- Introduction to No-Code AI
- What people in No-Code AI do
- Key platforms in No-Code AI (e.g., Google AutoML DataRobot, H2O.ai)
- Overview of services provided by No-Code AI platforms
- Benefits of using No-Code AI (speed, accessibility, reduced technical complexity)
- Limitations of No-Code AI (customization, scalability)
- Technical aspects of No-Code AI tools (drag-and-drop interfaces, automated model building, and deployment)
- How AI is integrated into No-Code platforms
- Recent developments in No-Code AI
- AI use cases enabled by No-Code AI platforms industries adopting No-Code AI (finance, healthcare, retail, etc.)
- Ethical concerns and challenges in No-Code AI
- Future trends in No-Code AI (democratisation of AI, citizen data scientists)



- Introduction to AI and ML in IoT
- Key IoT devices and their role in AI and ML data collection
- IoT data processing and management for AI models (Edge vs. Cloud)
- AI Models for IoT (Predictive Models, Anomaly Detection, Classification)
- Machine learning algorithms used in IoT (Regression, Decision Trees, Neural Networks)
- Real-Time Data Analytics in IoT using AI and ML
- AI at the Edge: Challenges and Opportunities
- AI Use Cases in IoT (Predictive Maintenance, Smart Cities, Connected Vehicles)
- Deep Learning in IoT: Use Cases and Frameworks
- IoT Data Labelling for AI and ML Models
- AutoML for IoT Applications
- AI-Driven automation in IoT Systems
- Challenges of AI and ML integration in IoT (Data Quality, Privacy, Real-Time Processing)
- Future trends in AIML for IoT (Federated Learning, 5G, AIoT)



- Introduction to Explainable AI (XAI)
- Importance of Explainability in AI
- Roles in Explainable AI (Data Scientists, AI Ethicists, Domain Experts)
- Key companies working on Explainable AI (e.g., Google, IBM, Microsoft)
- Services provided by Explainable AI platforms
- Techniques for Explainable AI (LIME, SHAP, Saliency Maps, Integrated Gradients)
- Challenges in Explainable AI (complexity, transparency vs. accuracy tradeoff)
- How AI systems can be made explainable
- Recent developments in Explainable AI
- AI use cases where explainability is crucial (Healthcare, Finance, Legal, Autonomous Systems)
- Regulatory and ethical implications of Explainable AI
- Future trends in Explainable AI (regulation, democratization of explainability tools)

Note:

The topics and schedule of specializations may be changed depending on whether a minimum number of learners have opted for a specialization



More Than 30 Use Cases for Application-Based Learning



Analyzing Loan Data to Identify Default Risk

Building models to predict loan defaults based on borrower characteristics.



Predicting Loan Defaults

Predicting loan defaults using ensemble methods: combining models to improve loan default predictions.



Image Classification with CIFAR-10

Optimizing image classification models: fine-tuning deep learning models for image classification.



Gridworld Navigation

Training agents to navigate through Gridworld: building reinforcement learning agents to complete navigation tasks.



Training an AI for Simple Games

Deep Q-networks for game playing AI: applying deep RL techniques to train AI for simple games.



Movie Recommendation System:

Movie recommendation using collaborative filtering: building a personalized recommendation system for users.



Style Transfer:

Applying GANs for artistic style transfer: using GANs to apply artistic styles to images.



Building API for Weather Data:

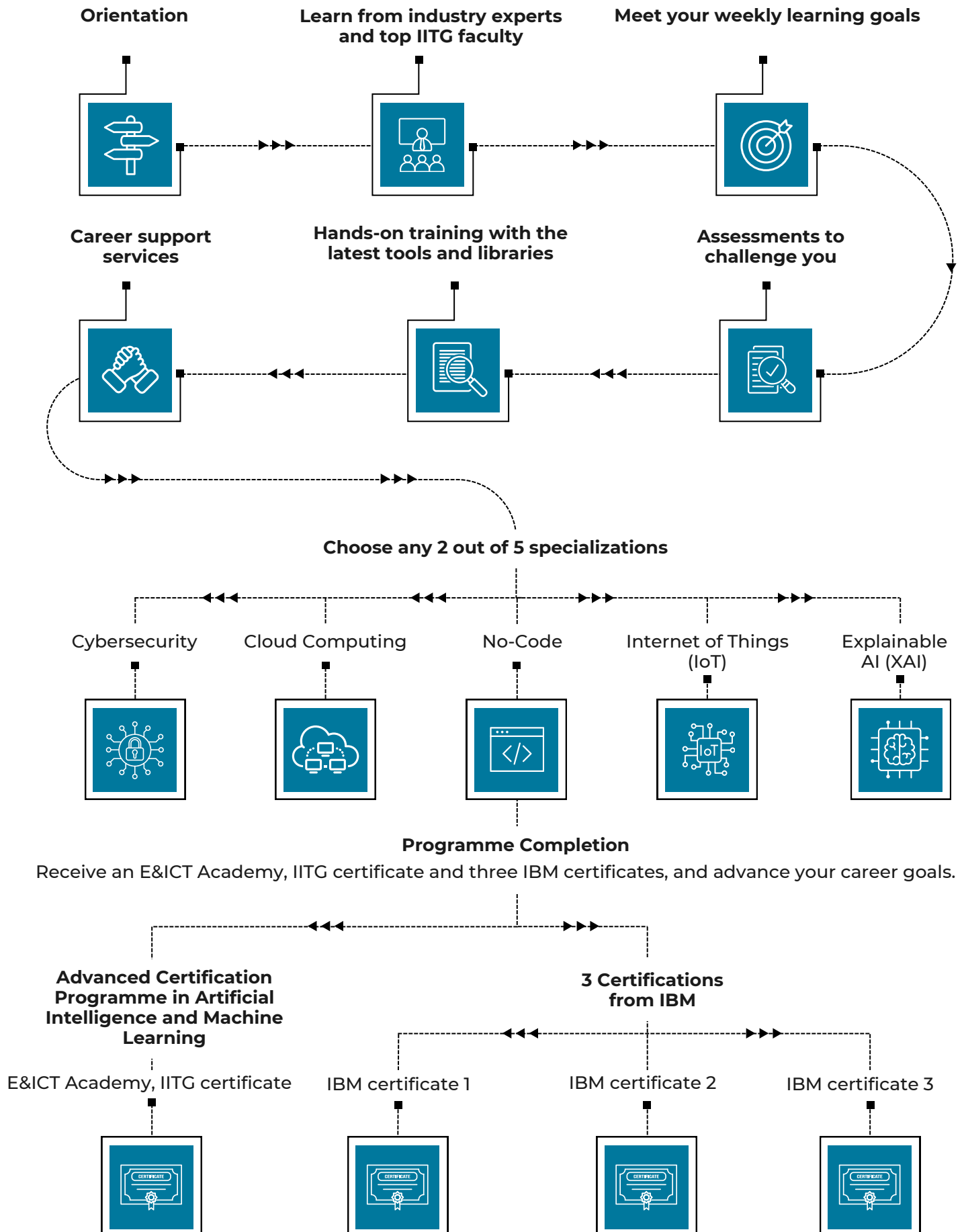
Providing weather data via API: developing and integrating REST APIs for weather services.



CI/CD Pipeline for ML Models:

Scaling models using Kubernetes: deploying machine learning models with Kubernetes for scalability.

Own Your Learning Experience



Learn from Renowned IIT Guwahati Faculty



Dr Prithwjit Guha

Associate Professor

Dr. Prithwjit Guha is an Associate Professor at the Department of Electronics and Electrical Engineering at IIT Guwahati. He specializes in ML, Computer Vision, and Signal Processing, with a particular focus on video surveillance, video analytics, and joint vision-language tasks like Visual Question Answering (VQA). Prior to joining IIT Guwahati, he led the Computer Vision group at TCS Innovation Labs in Delhi.

Dr. Guha obtained his BE in Electrical Engineering from Jadavpur University and later completed his MTech and PhD in Electrical Engineering at IIT Kanpur. He is also an associated faculty member at the Centre for Linguistic Science and Technology and the Centre for Intelligent Cyber-Physical Systems at IIT Guwahati.

His research explores various aspects of video and broadcast analytics, with significant contributions to visual tracking, speech discrimination, and cross-domain interaction in AI systems.

Publications

- Rituparna Choudhury, Shaik Rafi Ahamed, Prithwjit Guha, "FPGA Implementation of Batch-Mode Depth-Pipelined Two Means Decision Tree", IEEE Embedded Systems Letters [2022]. , 10.1109/LES.2022.3190001
- Mrinmoy Bhattacharjee, S.R. Mahadeva Prasanna, Prithwjit Guha, "Speech/Music Classification using Phase-based and Magnitude-based Features", Speech Communication (Elsevier) , vol.142 , (DOI - <https://doi.org/10.1016/j.specom.2022.06.005>), pp.34-48, [2022]
- Mrinmoy Bhattacharjee, S.R. Mahadeva Prasanna, Prithwjit Guha, "Clean vs. Overlapped Speech-Music Detection Using Harmonic-Percussive Features and Multi-Task Learning", IEEE/ACM Transactions on Audio Speech and Language Processing [2022]. , doi: 10.1109/TASLP.2022.3164199

Fundamental Learning Outcomes

- Understand the basics of data science, including its applications, learning path, and importance with deep understanding of mathematics, statistics, and programming to implement core AI and ML algorithms
- Analyse techniques and methods in Python to read, pre-process and turn data into relevant features
- Select the most suitable ML technique (e.g., regression or classification) to solve a specific real-world problem
- Use deep learning models such as CNNs and RNNs for tasks like image processing or sequence analysis
- Evaluate advanced neural network models such as Convolutional Neural Networks (CNNs) for image processing and Recurrent Neural Networks (RNNs) for sequence analysis
- Develop NLP models, including the use of transformer architectures for tasks such as text generation and translation
- Implement computer vision and speech recognition systems using advanced deep learning techniques
- Apply principles of reinforcement learning to create intelligent agents capable of decision-making in complex environments
- Deploy ML models to create interactive web applications showcasing AI and ML solutions

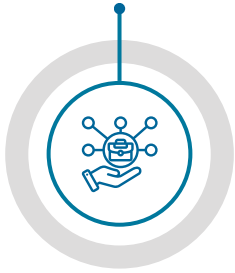


Emeritus Career Services Benefits

15 Recorded Sessions and Resources in the Following Categories

(Please note: These sessions are not live):

**IIMJobs
Pro-Membership**



**Navigating
Job Search**



**LinkedIn Profile
Optimisation**



**Resume and
Cover Letter**

**Interview
Preparation**







Key Benefits:

- **Pro-Membership and features of IIMJobs and Hirst:** Access to job insights recruiter action status, follow-up actions, and ability to chat with recruiters who have shortlisted your profile
- **Spotlight on IIMJobs and Hirst:** Profile boost for applied jobs (that align with acquired certification), greater profile visibility - highlighted with institute name along with a testimony of certificate acquisition by the candidate
- **Spotlight Plus:** All the benefits of Spotlight and added advantages like profile and rank boost in the recruiter search database
- **Resume builder tool:** 6-month access to DIY resume builder, auto resume creator, optimization suggestions based on key parameters, guide on information to be incorporated, and unlimited resume iterations within the duration

Please note:

- E&ICT Academy, IIT Guwahati or Emeritus do NOT promise or guarantee a job or progression in your current job. Career Services are only offered as a service that empowers you to manage your career proactively. The Career Services mentioned here are offered by Emeritus. E&ICT Academy, IIT Guwahati is NOT involved in any way and makes no commitments regarding the Career Services mentioned here.
- This service is available only for Indian residents enrolled into select Emeritus programmes.

Programme Details

 Programme Duration	11 months
 Programme Start Date	27 March 2025
 Programme Fee	INR 1,35,000 + GST
 Payment Options	Basic instalment plans
 Special Pricing	Up to 10% fee benefit for corporate plans
 Programme Format	Pre-recorded videos, live online sessions, faculty master classes, 2 days optional campus immersion at IIT Guwahati*

Lecture Schedule:

Industry expert weekly live session schedule:

Saturday (4 p.m. to 7 p.m.)

Faculty live master class schedule:

Weekend (Saturday or Sunday)

Eligibility Criteria:

Graduate/diploma holders can apply (Basic Math and programming knowledge is preferred)

Note:

**Only participants who have successfully completed the programme will be allowed to visit the campus.*



About E&ICT Academy, IIT Guwahati

Electronics & ICT Academy Indian Institute of Technology Guwahati (IIT Guwahati). As an initiative of the Ministry of Electronics & Information Technology (MeitY), the Academy was set up at IIT Guwahati under the scheme of "Financial Assistance for setting up Electronics and ICT Academies". On 26 March 2015, the project started at IIT Guwahati, and the Academy was inaugurated by Prime Minister Shri. Narendra Modi on 19 January 2016. The objective of the Academy is to provide skill training to the Faculty Members (Engineering & Non-engineering) in the area of recent trends in engineering & ICT application. The Academy is designing specialised modules for imparting quality training for enhancing employability and capacity building in Electronics & ICT. In the past 7 years, the Academy has successfully conducted 400+ Programmes through conventional classroom teaching and NKN/virtual classroom mode in different institutes/Universities of North Eastern States specifically and a few in others. To date, the Academy has successfully trained 20000+ participants. The Academy has also signed a MoU with Institutes/Universities for hosting the programmes and for conducting hands-on sessions the Academy collaborated with Industries as Training/Industry Partners. The Academy is also offering online advanced certification Courses in the areas of Data Science, Artificial Intelligence & Machine Learning, Big Data, Cloud Computing, Full Stack, UI/UX and VLSI Design and trained 2000+ graduates and working professionals. The Academy has also delivered training to 140+ Assam Police and Indian Navy officials on cybercrime concepts and Data Science.

About Emeritus

Emeritus is committed to teaching the skills of the future by making high-quality education accessible and affordable to individuals, organisations and governments worldwide. It does this by collaborating with more than 80 top-tier universities across the United States, Europe, Latin America, Southeast Asia, India, and China. Emeritus's short courses, degree programmes, professional certificates, and senior executive programmes help individuals learn new skills and transform their lives, companies, and organizations. Its unique model of state-of-the-art technology, curriculum innovation; and hands-on instruction from senior faculty, mentors, and coaches has educated more than 350,000 individuals across 80+ countries.

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For registration and any other information,
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