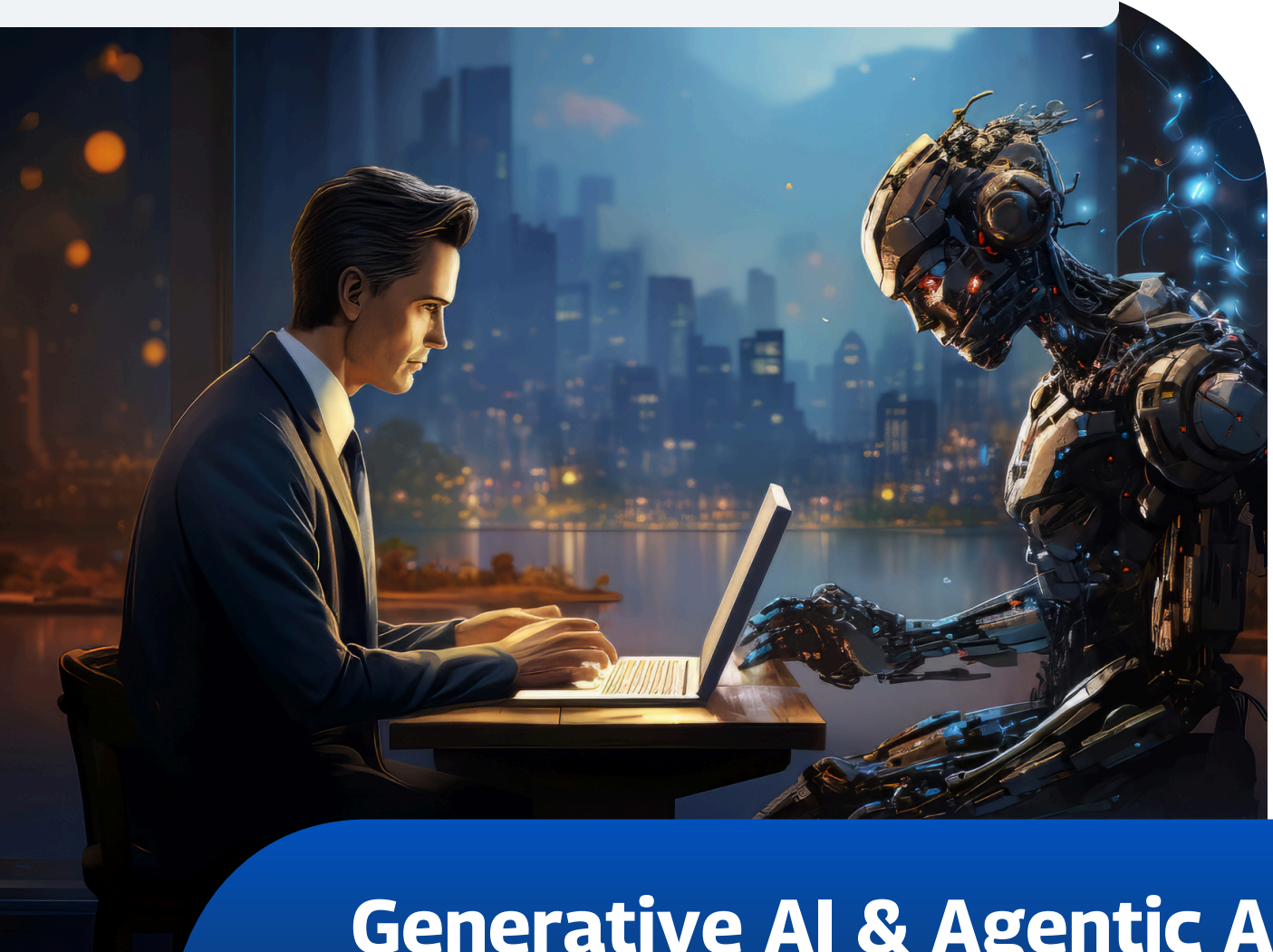


MasterTrack for **Software Developers**



Generative AI & Agentic AI Master Certification Program

In collaboration with : **IBM**

Integrated with:  LangChain  ChatGPT **Agentic AI**

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About Course

This certification is for **software developers or programmers** who want to deepen their knowledge of **Generative AI**. It uses a **project-based approach**, with guidance from industry experts and a dedicated mentor.

The course also covers **Large Language Models, OpenAI APIs, LangChain, RAG for developers**. By the end, you'll be ready to integrate AI & ML in software development and prepare for AI engineering interviews.

Our **Commitment**

"Equip tech professionals and developers to understand and **lead Generative AI projects**, covering essential concepts, practical applications, and tools for strategic decision-making."

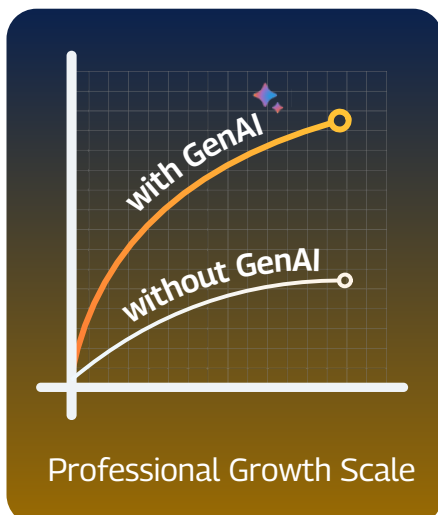
Furthermore, our comprehensive career support services include **interview preparation, resume building, and job placement assistance**, all designed to help you smoothly transition into leadership roles in AI and Machine Learning.

 **100%**
Assured Interview

 **350+**
Hiring Partners

 **7+**
Centers Across India

 **40k+**
Professionals Upskilled



70%

of companies are likely to adopt GenAI in next 5 years, to

- enhance efficiency,
- automating tasks,
- improving decision-making for better project outcomes.

***By integrating GenAI into our program**, we ensure that our learners are well-prepared to lead and innovate in their respective fields.

Program **Summary**



Program Eligibility

Tech professionals having **2+ years** of experience.



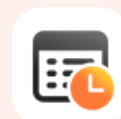
Training Mode

100% Live Online
Interactive Program



Program Faculty

Seasoned Industry
Experts & Mentors



Program Duration

3 Months Program
with Live Projects



Payment Options

No cost EMI,
Interest free loan



Certification

Earn an IBM-verified
Certification in
Generative AI

Exclusive

GenAI-Applied Learning Experience

Hands-On Development

Execute a GenAI project
end-to-end.

Collaborative Experience

Team up to build and
deploy solutions.

Industry Impact

Tackle real-world
GenAI applications.

Advanced Skills

Practical knowledge
in GenAI integration

Important Note: Join a team of 4-5 developers to build and deploy a GenAI solution, gaining leadership and teamwork skills in a project environment.

Program Eligibility

**2+ years of
work exp.
in Tech**



Course Prerequisites

You should have knowledge of **Python, Machine Learning, & basic Deep Learning.**

If you don't have these skills, you can first complete our foundation program before joining this course.

Program Outcome: What's in it for you?



Master **GenAI Tools + Frameworks**

Learn OpenAI APIs, LangChain, Hugging Face, and more to build intelligent applications effortlessly.



Real-World **GenAI Project Portfolio**

Work on live projects like chatbot creation, workflow automation, and **RAG-powered** assistants to showcase your expertise.



Accelerate Your **Career Growth**

Leverage advance GenAI knowledge to drive business success, enhancing career prospects and **salary growth.**

Why choose Learnbay?

For **GenAI Developer Certification for Professionals**



Industry-Backed Certification

Stand out with a prestigious certification from **IBM**

Get Certified
from



Project-Based Learning

Gain hands-on experience with **real-world GenAI projects**, preparing you to tackle industry challenges confidently.

Real Projects | **Real Experience**



Learn from GenAI Industry Mentors

Gain insights from top industry experts in Generative AI. Our mentors bring **real-world experience** to help you master advanced skills.



Personalized Support

Get tailored guidance with 1:1 doubt-clearing sessions for a deeper understanding.

Alumni Spotlight



Shravanthi A
Data Scientist

Learnbay has helped me a lot to learn data science applications in the e-commerce industry. The live class concept was really helpful in receiving proper DS training. Thanks to all my mentors and the placement team.

**Mechanical
Domain**



Data Scientist @



 **230%**
Salary Hike



Preksha Mishra
Lead Data Scientist

The course structure is excellent with emphasis on concept building and tools & software at the same time. The support team is excellent and supportive and quite agile to respond to doubts.

**Telecom
Domain**



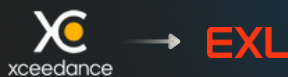
Data Scientist @



 **140%**
Salary Hike



Karan Chawala



Data Scientist



Jaya Sinha



Senior Analyst



Shubham Dev



Lead Data Analyst

Alumni Spotlight



Mohd. Israr
Data Scientist

Thanks to the Learnbay data science course & excellent guidance, I was able to ace the TCS interview and secure a job with a 210% pay raise. The real-world time projects helped me develop my concepts as a data scientist.

**Mechanical
Domain**



Data Scientist @



 **230%**
Salary Hike



Saurabh Kumar
Data Scientist

When I joined Learnbay I did not have any knowledge apart from the very basics. I gradually build my concept via various trainers and get trained in data science with strong knowledge/concepts.

**Mathematics
Professor**




Data Scientist @  **Teleperformance**

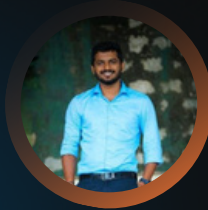
 **135%**
Salary Hike



Aravind

 **TheMathCompany** → **CATERPILLAR**

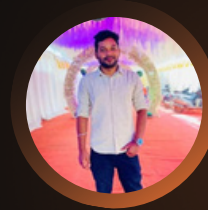
Data Scientist



Ritesh Kumar

 **unacademy** → **Capgemini** 

Senior Analyst



Ramki

 **cognizant** →  **ANBSYSTEMS**
a DNY company

Data Analyst

Get Certified and accelerate your career growth

Generative AI Certification



Certification from IBM in **Generative AI**

- ✓ **Real-World GenAI Projects:** Hands-on exposure to industry-relevant projects using IBM Watsonx and leading Generative AI tools.
- ✓ **Expert-Led Training:** Interactive live sessions led by seasoned industry professionals from IBM's Developer Skills Network.

Program Fees

Live online classes

- ✓ Live online interactive sessions
- ✓ 1:1 online Doubt Session with experts
- ✓ Virtual Mock interviews
- ✓ Online Capstone projects

Program Fee

₹ 95,000/- +18% GST

EMI starts at

₹ 7,916/-

Payment Plan:


No Cost EMI Available
For 6, 9 and 12 Months



Certification Curriculum

GenAI Developer Certification
For Professionals

 www.learnbay.co

 77956 87988

GenAI Foundation Prep Module (Optional)

Duration: 36 Hours

This preparatory module is designed for **learners new to Python programming and Machine Learning (ML)**. It provides foundational knowledge essential for **mastering advanced Generative AI topics**.

Who should attend?

- Non-programmers transitioning into Generative AI.
- Professionals aiming to refresh Python and ML basics.

Note: This **fast-track module** is recommended primarily for professionals with a **tech** or **programming background**. Non-tech professionals are advised to join detailed foundational sessions from our data science programs.

Python Programming

We will learn basic Python programming and essential tools like **NumPy, Pandas, and Matplotlib**.

This Python module will be **fast-tracked**. If you are a non-programmer, you can attend our detailed Python for Data Science modules.

Duration - 15-18 hrs

Chapter 1: Core Python

- Installation, Jupyter notebook basics, variables, data types
- Conditionals, loops, functions, basic data structures

Chapter 2: Python Libraries

- NumPy fundamentals: arrays, operations
- Pandas basics: DataFrames, Series, data manipulation
- Matplotlib: basic data visualization

Machine Learning Fundamentals

We will cover the **fundamentals** of **Machine Learning**, exploring various **ML techniques** including **supervised** and **unsupervised** learning methods.

Duration - 10-12 hrs

Chapter 1: ML Basics

- Introduction, types of machine learning
- ML workflow: Data exploration, preparation, model building

Chapter 2: Supervised Learning

- Linear regression, logistic regression, decision trees
- Model evaluation: accuracy, confusion matrix, cross-validation

Chapter 3: Unsupervised Learning

- K-means clustering, hierarchical clustering
- PCA for dimensionality reduction

Deep Learning Basics

This module introduces fundamental concepts of Deep Learning, essential neural network architectures, and frameworks.

Duration - 10 hrs

Chapter 1: Deep Learning Foundations

- Neural Networks and Activation Functions
- Training Neural Networks: Backpropagation, Gradient Descent

Chapter 2: Practical Deep Learning

- Introduction to frameworks (TensorFlow, PyTorch)
- Hands-on: Image classification project

GenAI Developer Certification for professionals

Duration: 96 Hours - 3 Months

Outcome: Master advance GenAI tools like TensorFlow, PyTorch, OpenAI APIs, and LangChain, frameworks, and real-world applications to **lead AI-driven projects** confidently.

Topic 1 5 hours

Fundamentals of Generative AI

Overview of **generative models** and their real-world applications, highlighting differences from traditional AI.

Topic 2 5 hours

Use Cases of GenAI in Various Industries and Domains

- **Finance:** Fraud detection, automated report generation, and investment insights.
- **Healthcare:** Drug discovery, medical image analysis, and personalized treatment.
- **Retail and E-commerce:** Personalized recommendations, inventory management, and customer service automation.
- **Manufacturing:** Quality control, predictive maintenance, and process optimization.

Topic 3 5 hours

Deep Learning Foundations for GenAI

- **Neural networks** and deep learning basics, Backpropagation and optimization techniques
- Overview of popular deep learning frameworks (TensorFlow, **PyTorch**).
- **Hands-on Project:** Build a basic image classifier using CNNs with TensorFlow or PyTorch, applying optimization techniques learned.

Topic 4 5 hours

Prompt Engineering and optimisation

- Strategies for crafting effective **prompts to optimize AI** responses and improve user interaction
- Techniques for prompt optimization and **prompt chaining**.

Topic 5 5 hours

Transformers and Attention Mechanisms

- Introduction to transformers and self-attention, **BERT, GPT**, and other transformer-based architectures, Hands-on exercise: Fine-tuning a transformer model for text generation.
- **Hands-on Project:** Fine-tune a transformer model on a custom text dataset for a text classification or summarization task.

Topic 6 5 hours

Large Language Models (LLMs)

Overview of LLMs like GPT-3, ChatGPT, and **LLaMA**

Fine-tuning LLMs for specific use cases, Applications in chatbots, summarization, and **sentiment analysis**.

Hands-on exercise: Design and deploy a conversational AI model that simulates a customer service assistant for a chosen domain (e.g., retail or tech support).

Topic 7 5 hours

Integration of OpenAI APIs

- Techniques for effectively integrating **OpenAI APIs**, including authentication and best practices for data handling. Rate limits and error handling.
- **Hands-on Project:** Develop a web app that uses OpenAI's API for content generation based on user inputs, including authentication and error handling.

Topic 8 5 hours

Building Applications with LangChain

- Overview of **LangChain's** functionality for large language models.
- **Chain concepts:** sequential, memory, and conditional chains, Creating custom prompts and workflows.
- **Hands-on Project:** Personalized Financial Advice - Based on customer profiles (age, income, risk appetite), offer tailored financial advice or investment recommendations.

Topic 9 5 hours

Utilizing Hugging Face

- Accessing and deploying **Hugging Face** pre-trained models, **Fine-tuning models** on custom datasets, Using Hugging Face's pipelines for rapid deployment, Introduction to Hugging Face's Model Hub and Transformers library.
- **Hands-on Project:** Fine-tune a Hugging Face model for a sentiment analysis task and deploy it using the Hugging Face API.

Topic 10 5 hours

GANs (Generative Adversarial Networks)

- Fundamentals of GANs and their components (Generator and Discriminator).
- **Variants of GANs** (DCGAN, StyleGAN, CycleGAN).
- Applications of GANs in image synthesis, art creation, and more.
- **Hands-on exercise**: Building a simple GAN for image generation.
- **Hands-on Project**: Build and train a DCGAN to generate new images from a specific dataset, such as handwritten digits or facial images.

Topic 11 6 hours

Variational Autoencoders (VAEs)

Introduction to VAEs and their architecture

Comparison of VAEs with GANs, Applications in **anomaly detection** and data compression.

Hands-on exercise: Building a VAE for image reconstruction.

Topic 12 6 hours

Retrieval-Augmented Generation (RAG)

- Introduction to **RAG**.
- How RAG combines generative and retrieval-based techniques, Implementing a basic RAG model for a knowledge-based task.
- **Hands-on Project**: Build a RAG-based FAQ Assistant to answer customer questions by retrieving information from a domain-specific FAQ dataset, merging retrieval and generation for clear, concise responses

Topic 13 18 hours

Introduction to Agentic AI

- Understanding **Agentic AI** and Autonomous Agents
- Core principles of agentic systems (Autonomy, Goal-oriented behavior, Decision-making)
- **Use cases** in business and technology

Key Components of Agentic AI

- Task Management and **Automation**
- Planning, Execution, and Optimization
- **Decision-making** frameworks
- Practical demonstration using **LangChain**

Essential Tools for Agentic AI

- **LangChain**: Introduction and hands-on exercises
- **AutoGPT**: Setup and practical application
- **BabyAGI**: Basic usage and task automation
- **CrewAI**: Introduction and practical demonstrations

Agentic AI Integration

- Integrating agents with **OpenAI** APIs
- Building custom agents for specific tasks
- **Hands-on session with OpenAI's GPT models**

Real-world Projects

- **Project 1**: Build an autonomous assistant to automate content generation and social media posting using **AutoGPT** and **LangChain**.
- **Project 2**: Develop an intelligent customer support agent that autonomously handles FAQs and escalates complex queries using **BabyAGI** and GPT API.
- **Project 3**: Create collaborative workflows and team-based tasks automation using **CrewAI**.

Topic 14 6 hours

Model Deployment for Generative AI

- Overview of model deployment techniques.
- Best practices for **deploying generative models in production**.
- Setting up APIs and scaling model infrastructure.

Topic 15 6 hours

GenAI Copilot Tools for Coding

- Overview of GenAI Copilot tools and their applications in coding.
- **Hands-on with** GitHub Copilot, Tebnine, Amazon CodeWhisperer, Replit Ghostwriter, Codex (OpenAI)

Topic 16 6 hours

Ethical Considerations in AI

Discussion of ethical issues in AI, including bias, privacy, and responsible usage in development.

Executive-level real-time **Industrial Projects (Electives)**

#1



Financial Report Generator

Automatically create clear financial reports from raw data like balance sheets. **LangChain** summarizes key insights, while **Hugging Face** helps with data analysis and clarity.

Duration: 8 hours

#2



Project Performance Dashboard

Track and analyze the progress of projects in real time. This tool provides insights into timelines, **budgets, and risks**, enabling better decision-making and project management

Duration: 8 hours

#3



Smart Hiring Tool

A Generative AI-powered tool that screens resumes, matches candidates to **job profiles**, and drafts customized job descriptions. This tool will automate the **recruitment process** by understanding candidate profiles

Duration: 8 hours

#4



Employee Feedback Insights

This GenAI based tool will process customer **reviews and feedback**, identifying emotions, trends, and key themes. This insights will help to improve products, enhance customer satisfaction, and refine strategies.

Duration: 8 hours

Note: Pick any two

Thank you!

For more queries and information
please reach out to us at:

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Visit us at

www.learnbay.co

