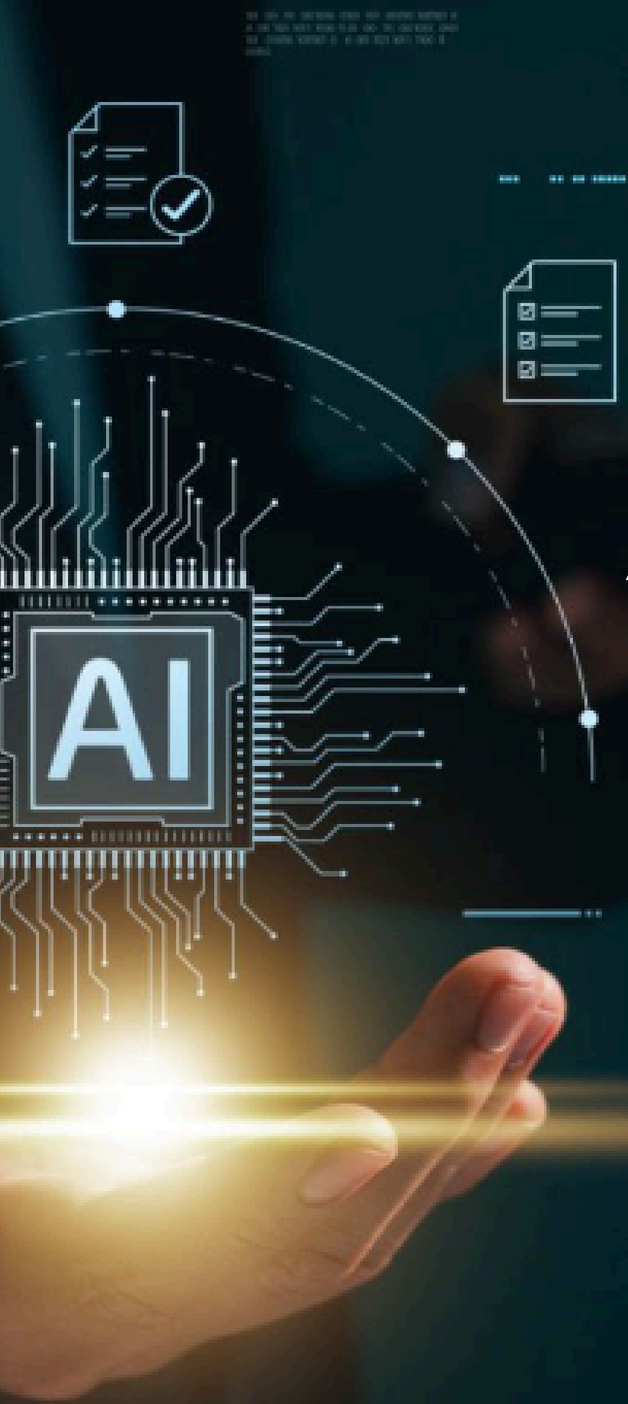

Advanced Certificate Program in

Generative AI

100% Project-based Program

Deploy 6+ AI apps in 16 weeks

INDEX

The Future with Generative AI

PROGRAM OVERVIEW

Build your own GenAI application

6+ hands-on projects

Refresher python fundamentals

Live Masterclass **from GenAI industry pioneers**

Student support is available 7 days a week, 24*7.

No cost EMI options

70+ learning hours

Unlocking Career Opportunities with Generative AI

Generative AI is transforming industries, creating high-demand career opportunities for professionals. Mastering this technology makes individuals invaluable to organizations seeking cutting-edge solutions, creative automation, and enhanced customer engagement.
For Indian professionals, Generative AI has a direct impact across key sectors:

Computer Vision: Contributing to advanced image recognition, autonomous vehicles, and AI-driven healthcare diagnostics.

Natural Language Processing: Enhancing language translation, conversational AI, and sentiment analysis for customer insights.

Upskilling in Generative AI not only fosters innovation in these industries but also positions professionals as experts in the global AI ecosystem. By acquiring these skills, they can work on pioneering projects, collaborate with international teams, and drive technological advancements in India and beyond.

With a specialized expertise in Generative AI, professionals gain a competitive edge, opening doors to lucrative career prospects and shaping the future of AI-driven solutions.

ABOUT GENERATIVE AI

Generative AI is a rapidly advancing field that offers transformative opportunities for professionals looking to expand their expertise in artificial intelligence. It focuses on developing intelligent systems capable of generating original content such as text, images, music, and videos by leveraging deep learning and neural networks. This enables machines to exhibit creativity, automate complex tasks, and solve real-world problems efficiently.

Generative AI has vast applications across multiple industries:

- Computer Vision: Creating realistic images, enhancing photos, and enabling AI-powered design.
- Natural Language Processing (NLP): Powering text generation, language translation, and conversational AI.
- Creative Industries: Assisting artists, designers, and musicians in generating innovative digital content.

Our Certificate Program in Generative AI is designed to equip professionals with in-depth knowledge and practical skills in this cutting-edge domain. Covering everything from fundamental concepts to advanced techniques, the program emphasizes hands-on projects, real-world case studies, and expert-led sessions, ensuring learners stay ahead in the rapidly evolving AI landscape.

Join us to gain industry-relevant expertise and become a key contributor to the future of AI-driven innovation! 🚀

Real-World Applications and Projects

Project

1. Personalized Travel Agent

Develop an AI-powered travel agent that creates customized itineraries based on user preferences, budget, and past travel history.

Core Tasks:

✅ Generate synthetic travel recommendations using LLMs
✅ Store and retrieve travel destinations in a vector database
✅ Implement semantic search to match user preferences with destinations
✅ Use RAG techniques to provide real-time personalized trip suggestions

2. AI-Powered Pricing Strategy Agent

Develop a dynamic pricing agent that adjusts product prices based on demand, competitor pricing, and seasonal trends.

Core Tasks:

✅ Generate synthetic pricing scenarios using LLMs
✅ Store and retrieve pricing history and competitor data in a vector database
✅ Implement semantic search to analyze market trends
✅ Use RAG techniques to generate real-time pricing recommendations

Real-World Applications and Projects

Project

3. Construct a Personalized Financial Advisor Bot

Create a chatbot that provides financial advice by referencing market trends, investment strategies, and economic data.

Core Tasks:

✅ Aggregate financial data from APIs, stock reports, and market analysis documents.

✅ Develop a recommendation engine using semantic search to personalize investment insights.

✅ Generate actionable advice by blending retrieved financial knowledge with generative AI reasoning.

4. Enhance Speech Recognition with Domain-Specific Fine-Tuning

Adapt a speech-to-text model for a specialized domain, such as medical or legal transcription.

Core Tasks:

✅ Load a foundation model trained on general speech recognition.

✅ Curate and preprocess an audio dataset containing domain-specific terminology.

✅ Apply parameter-efficient fine-tuning to improve transcription accuracy within the target domain.

Project

5. AI-Powered Product Variant Generation

Generate multiple variations of product images (different colors, textures, or angles) using generative AI models.

Core Tasks:

✅ Train a model to generate realistic variants from a base image.
✅ Apply AI-driven enhancements like background replacement.
✅ Automate variant generation for e-commerce catalogs.

6. Build AI-Powered Real Estate Price Prediction Model

Predict property prices based on historical data and market trends.

✅ Collect real estate data including location, property size, amenities, and market trends.

✅ Train a machine learning model to estimate property values.
✅ Develop an interactive dashboard to visualize pricing trends and forecasts.
✅ Implement an AI-powered chatbot for property recommendations.
✅ Deploy as a cloud-based service for real estate agencies and home buyers.

Real-World Applications and Projects

Project

7. Build AI-Based Smart Healthcare Assistant

Provide AI-driven health monitoring and symptom analysis for early disease detection.

✅ Train an AI model on medical databases to recognize health patterns.
✅ Implement AI-powered symptom checkers for preliminary diagnosis.
✅ Enable remote patient monitoring using wearable device data.
✅ Develop an AI chatbot for answering health-related queries.
✅ Deploy as a mobile app or telehealth integration.

CURRICULUM

Phase 1: Python & Data Foundations | **4 Weeks** | **Recorded**

- Master Python programming, data structures, and best coding practices.
- Work with Pandas for advanced text processing and data analysis.
- Learn Linux commands and environment setup.
- Understand exception handling, conditionals, loops, and functions.
- Explore relational databases, data cleaning, and preprocessing techniques.

CURRICULUM

Phase 2: AI-Powered Virtual Assistant - ShopAssistAI 6 Weeks Recorded

- Define the different components of the bot and design the workflow for creatiIntroduction to Prompt Engineering for improving chatbot responses.
- Understand Large Language Models (LLMs) like GPT-3, transformers, and RLHF.
- Learn to design a chatbot workflow and define performance metrics.
- Implement Chain of Thought prompting techniques for enhanced accuracy.
- Deploy the ShopAssistAI application using Flask and refine the UI with AI-generated code.

CURRICULUM

Phase 3: AI-Powered Knowledge Assistant - Mr.HelpMate AI **3 Weeks**

- Learn semantic search techniques and document embedding.
- Build and optimize vector-based search systems with ChromaDB.
- Implement Retrieval-Augmented Generation (RAG) by integrating LLMs with search models.
- Experiment with different vector stores, search algorithms, and LLMs to improve chatbot responses.

CURRICULUM

Phase 4: Advanced AI Systems - SemanticSpotter **4 Weeks** **LIVE**

- Build AI-powered knowledge retrieval systems using LangChain.
- Learn about document chunking, embedding, and retrieval techniques.
- Create intelligent query engines that improve over time.
- Implement entity extraction and indexing using LlamaIndex.
- Integrate LangChain & LlamaIndex for seamless AI-powered search systems.

CURRICULUM

Phase 5: Scaling & Deploying Generative AI Systems **2 Weeks** **LIVE**

- Explore cloud-based Generative AI solutions and responsible AI practices.
- Deploy AI-powered applications with scalable cloud infrastructure.
- Train custom LLMs using Reinforcement Learning from Human Feedback (RLHF).
- Work with multimodal AI models for text, image, and audio processing.

CURRICULUM

Phase 6: AI-Driven Image Generation - PixxelCraft AI | **2 Weeks** | **LIVE**

- Build and refine a Stable Diffusion pipeline for AI-powered image generation.
- Understand CNNs, Variational Autoencoders (VAEs), and GANs for image synthesis.
- Develop AI-powered creative tools that blend text and image generation models.

CURRICULUM

Phase 7: AI-Powered News & Code Generation - ShrewdNews AI **1 Week**

- Fine-tune language models for domain-specific text generation.
- Automate ML workflows using AI-powered coding assistants.
- Use vector embeddings to enhance real-world applications.

TOTAL DURATION **22 WEEKS**

ABOUT DEEPNEURON

DeepNeuron is an innovative online education platform dedicated to empowering individuals by enhancing their professional skills in an engaging and dynamic learning environment. Online education is a crucial and transformative force with far-reaching implications. At DeepNeuron, we strive to turn this educational shift into a revolutionary movement.

By integrating cutting-edge content, advanced technology, strategic marketing, and comprehensive support services, we deliver high-quality, industry-relevant programs at scale.

Collaborating with leading corporations and academic institutions, we ensure a rigorous and practical learning experience.

DeepNeuron is recognized as a trailblazer in Artificial Intelligence and Data Science education, shaping the future of learning and innovation.

DeepNeuron has been a leader in delivering industry-relevant programs and courses in data science and analytics. Our curriculum is designed with practical, hands-on projects and real-world case studies to equip learners with essential skills and experience.

DeepNeuron's Artificial Intelligence & Data Science programs are among the most sought-after, known for their industry relevance, high-quality curriculum, and personalized support.

We have empowered numerous professionals to upskill or transition into roles in data science, machine learning, and AI, driving growth and innovation in the field.

ADMISSION AND ENROLLMENT

Program Duration: 4.5 months (with an optional 1-month Python Programming Bootcamp included)

Program Start Date: Visit the official website for the latest start dates.

Program Fees: Check the official website for fee details and contact our counselor to explore scholarship opportunities.

Eligibility: Fundamental knowledge of Python required.

Weekly Commitment: Approximately 10 hours per week.

DEEPNEURON

www.deepneuron.in

For further details, **contact**

support@deepneuron.in **+91 98407 62315**

We are available 24*7