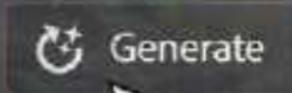


Generative Al

learn by Doing



Dec 1st 2025 - Feb 28, 2026

Summary:

An immersive, interactive course intended to take participants from Python foundations all the way to the construction and deployment of advanced generative Al (GenAl) applications. Participants will receive robust theoretical foundations and strong practical exposure through structured modules, real-world assignments, and a capstone project. Perfect for current and aspiring Al engineers, researchers, and professionals.

BROAD TOPICS

Core Technical Concepts:

- Python programming, data structures, machine Learning fundamentals, neural networks
- Deep learning concepts and training methods
- RNNS, LSTMS, GRUs, and sequence modeling
- Transformer architecture, foundation models
- Fine-tuning strategies: LORA, QLORA, Hugging Face workflows

Tools, Applications & Ethics:

- LangChain components and LangChain Expression Language (LCEL)
- Prompt engineering and LLM applications
- Retrieval-Augmented Generation (RAG): embeddings, vector databases, hybrid search
- Multi-agent systems: agent design, communication, coordination
- Model deployment: APIs, scaling, monitoring

SIMULATION MODULES

Core Frameworks & Tools:

- Python foundational scripting and logic building
- LangChain modular framework for building LLM applications
- Hugging Face Transformers pre trained model integration and fine-tuning
- Jupyter Notebooks interactive development and experimentation

Hands-on Modules:

- Text Processing & NLP Tasks
- Neural Network Implementation
- Text Generation Models
- Prompt Engineering Simulations
- Retrieval-Augmented Generation (RAG)
- Fine-tuning Exercises
- Model Deployment, multi-agent Interaction Simulations





Certification:

Upon completion of the program you will get a certificate from IIT Kharagpur - CEP Department.

Eligibility:

- UG students in Computer Science, Electronics, Electrical Engineering, or related disciplines
- PG/Research Scholars specializing in Machine Learning, Al, Data Science, or related fields
- · Working Professionals aiming to advance skills in Generative Al and LLM applications
- Entrepreneurs and Startup Teams interested in developing GenAl solutions for business challenges

Timing and Schedule:

Program Duration: 8 Weeks

Lecture Hours per week: 15

Timing- Live: 5 PM to 8 PM, recording accessible, doubt clearing and interaction sessions

Weekly Quizzes, Simulation Modules with online demonstrations

Platform: Ktech

Application Deadline:

24th October 2025

Program Information:

Program Fees:

Students: INR 10k + 18% GST

Working Professionals: 30k + 18% GST

Program Coordinators:

Prof. Mrigank Sharad, Mr. Ankit Soni Dr. Piya Sen

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