

"Master the Future with Generative AI/ML Training"

Unlock the potential of Generative AI and Machine Learning with our specialized training programs. Tailored for professionals, our courses dive into cutting-edge technologies like generative adversarial networks (GANs), large language models, and deep learning frameworks. Learn to create innovative AI-driven solutions, from text and image generation to advanced content personalization. Gain hands-on experience and practical insights to stay ahead in the transformative world of Generative AI/ML.

Here's a **detailed table of contents (TOC)** for a comprehensive training program on **Generative AI (Get AI)** and **Machine Learning (ML)** offered by EmhashLabs:

Module 1: Introduction to AI and ML

- 1. Overview of Artificial Intelligence and Machine Learning**
 - What is AI?
 - Types of AI: Narrow AI, General AI, and Superintelligence
 - Machine Learning vs. Traditional Programming
 - 2. Fundamentals of Machine Learning**
 - Supervised, Unsupervised, and Reinforcement Learning
 - Key Concepts: Features, Labels, and Training Models
 - Common Algorithms and Applications
 - 3. Introduction to Generative AI**
 - What is Generative AI?
 - Applications of Generative Models: Text, Image, Video, and More
 - Evolution of Generative Models
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Module 2: Data Fundamentals for AI/ML

- 1. Understanding Data**
 - Types of Data: Structured, Unstructured, and Semi-Structured
 - Data Collection and Cleaning Techniques
 - Exploratory Data Analysis (EDA)
- 2. Feature Engineering**
 - Selecting, Transforming, and Scaling Features
 - Handling Missing Data and Outliers
- 3. Data for Generative AI**

- Dataset Preparation for GANs and Transformers
 - Annotating and Preprocessing for Text and Image Generation
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Module 3: Core Machine Learning Concepts

1. **Linear Regression and Logistic Regression**
 2. **Decision Trees and Random Forests**
 3. **Clustering Algorithms (K-Means, DBSCAN)**
 4. **Neural Networks Basics**
 - Activation Functions, Loss Functions, and Optimization
 5. **Evaluating Models**
 - Metrics: Accuracy, Precision, Recall, and F1 Score
 - Cross-Validation and Hyperparameter Tuning
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Module 4: Deep Learning Fundamentals

1. **Introduction to Deep Learning**
 - Neural Networks and Backpropagation
 - Popular Frameworks: TensorFlow, PyTorch
 2. **Convolutional Neural Networks (CNNs)**
 - Applications: Image Recognition and Computer Vision
 3. **Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTMs)**
 - Applications: Time Series and Natural Language Processing
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Module 5: Generative AI Techniques

1. **Introduction to Generative Models**
 - Overview of Generative Adversarial Networks (GANs)
 - Variational Autoencoders (VAEs)
2. **Generative Adversarial Networks (GANs)**
 - How GANs Work: Generator vs. Discriminator
 - Training Challenges and Techniques
 - Applications: Image and Video Generation
3. **Transformers and Large Language Models**

- Attention Mechanism and Transformer Architecture
- GPT, BERT, and Their Variants
- Applications: Text Generation and Summarization

4. Diffusion Models

- Introduction to Diffusion-Based Generative Models
 - Applications in Art and Image Generation
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Module 6: Practical Applications of Generative AI

1. Text Generation and Natural Language Processing

- Text Summarization and Translation
- Chatbots and Virtual Assistants

2. Image and Video Generation

- Creating Realistic Images and Art
- Deepfakes and Ethical Considerations

3. Voice and Audio Generation

- Speech Synthesis and Audio Enhancement

4. Advanced Applications

- Generative AI in Healthcare (e.g., Drug Discovery)
 - AI-Driven Content Personalization
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Module 7: AI Ethics and Responsible AI

1. Ethical Considerations in AI/ML

- Bias and Fairness in Machine Learning
- Privacy Concerns in Generative Models

2. Responsible Use of Generative AI

- Addressing Misuse of Deepfakes and AI-Generated Content
- Ensuring Transparency and Accountability

3. Regulations and Guidelines

- Overview of AI-Related Laws and Standards
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Module 8: Hands-On Projects

1. **Project 1: Building a Text Generator using GPT**
 2. **Project 2: Image Synthesis using GANs**
 3. **Project 3: Creating a Simple Chatbot with Transformers**
 4. **Project 4: Developing an Audio Synthesizer**
 5. **Capstone Project: End-to-End Generative AI Application**
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Module 9: Tools and Frameworks

1. **Programming Languages for AI/ML**
 - Python and Libraries: NumPy, Pandas, and Scikit-learn
 2. **Deep Learning Frameworks**
 - TensorFlow, Keras, and PyTorch
 3. **AI/ML Development Tools**
 - Jupyter Notebooks, Google Colab, and AWS SageMaker
 4. **Generative AI-Specific Tools**
 - OpenAI APIs, Stable Diffusion, and DALL·E
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Module 10: Future of Generative AI/ML

1. **Trends and Innovations**
 - Multimodal Generative Models
 - AI in Art, Gaming, and Storytelling
 2. **Opportunities and Challenges**
 - Scaling AI Models and Managing Compute Resources
 - Addressing Emerging Ethical Concerns
 3. **Preparing for the Future**
 - Skills and Resources for Lifelong Learning
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Closing and Certification

1. **Final Assessment and Certification**
2. **Career Guidance and Resources**
3. **Q&A and Feedback Session**