ARTIFICIAL INTELLIGENCE

IN COLLABORATION WITH ST IIT BOMBAY

COURSE CURRICULUM

BSATES EdTech Foundation
Section-8 EdTech Company
CIN : U88900DL2024NPL440152

Duration

2 Days

14 Hours of Learning

Venue

Indian Institute of Technology IIT Delhi

Introduction

This workshop has been designed to provide a holistic learning experience. The curriculum balances theoretical knowledge and hands-on practice, ensuring participants gain both foundational understanding and practical expertise. Interactive sessions, real- world use cases, and collaborative hackathons help embed key concepts effectively. The structured flow, from basic concepts to advanced applications, caters to diverse learning paces while promoting teamwork and problem-solving. This methodology ensures a robust, engaging, and outcome-driven learning journey for all participants.

DAY 1: FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE (AI)

Session 1: Welcome & Icebreaker

Welcome & Introduction (15 minutes)
Brief overview of workshop agenda and objectives. Set the stage for learning and collaboration.

History of AI & Icebreaker Activity (45 minutes)
Alan Turing and the Turing Machine.
Evolution of AI and key milestones.
The Turing Test and its significance.
Participants share examples of AI in their personal/professional lives.
Explore examples of AI in daily life (spam filters, recommendations, camera filters, etc.).

Session 2: What is AI & how AI problem is resolved

Core Concepts Overview

- Difference between AI, Machine Learning(ML), Deep Learning(DL), and Generative AI (GenAI).
- What are different technologies used to implement these concepts
- How to solve any problems using AI

Finding Data
Selecting best model Testing
Training

Session 3: Core concepts of AI

Machine Learning Basics
Overview of Supervised, Unsupervised, and Reinforcement Learning. Categorize examples into ML types.

Hands-On Activity
Use Google's Teachable Machine to train a simple ML model (e.g., pose detection or image classification).

Session 4: Exploring use cases with Teachable Machines

- **Discussion**
  Applications of image, pose, and sound detection.
- **Preparation for Hackathon**
- **Brainstorm additional use cases:**
  Fitness Activity Tracker: Train a model to classify and count exercises (e.g., squats, push- ups).
  Plant Disease Detection:
  Train a model to identify plant diseases based on leaf patterns.
  Custom Hand Gesture Controls: Train a model to control devices using gestures like thumbs-up or open palm.

Session 5: Hackathon

Team Activity
Solve real-world problems using Teachable Machine.
Each team creates a working model and discusses its real-world application.

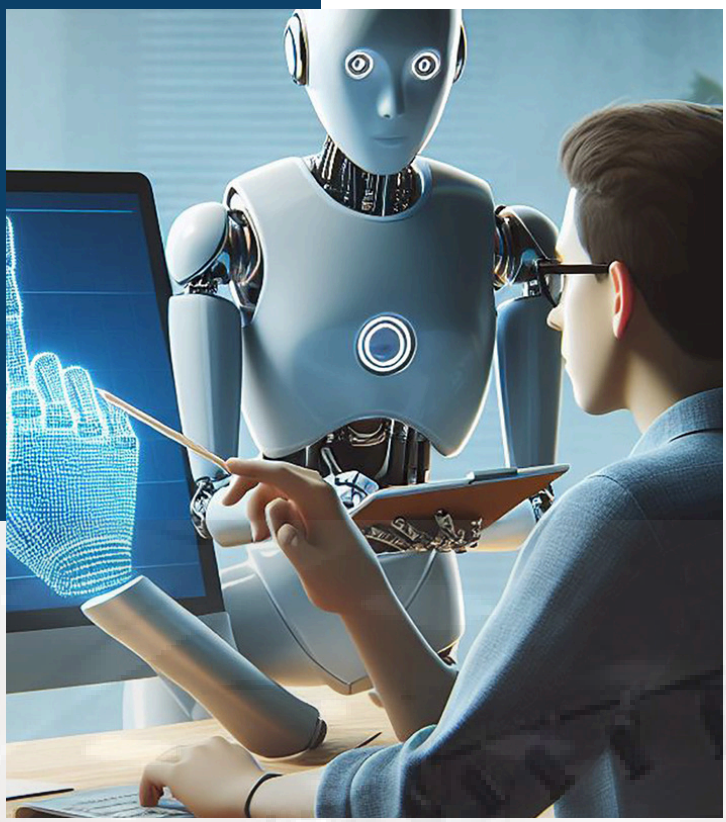
Resources Provided
Notebooks and step-by-step instructions to complete tasks.

Session 6: Wrap up & Reflection

Recap of Day 1 Concepts
Review the day's activities and key learnings.

Q&A Session
Open discussion for clarifications.

Preview of Day 2
Focus on Generative AI (GenAI) and Large Language Models (LLMs).



DAY 2: GENERATIVE AI (GenAI) & LARGE LANGUAGE MODELS (LLMS)

Session 1: Introduction to Generative AI

Overview
What is Generative AI and LLMs?
Applications in content creation, chatbots, and marketing.

Activity
Explore Generative AI tools like ChatGPT and DALLE.

Session 2: Practical Introduction of Hugging Face

Interactive Lecture
Overview of Hugging Face tools and pre-trained models.

Hands-On Activity
Solve problems like sentiment analysis or text summarization using Hugging Face.

Session 3: Building AI Applications

- Activity
- Build a chatbot using Hugging Face or similar platforms
- Compare local vs. cloud-based LLM solutions.

Session 4: Advanced Concepts with Langflow

Topics
- Introduction to Retrieval-Augmented Generation (RAG).
- Explore use cases with LangFlow.

Discussion
Address ethical considerations like bias and transparency in AI.

Session 5: Hackathon

Team Project
- Create projects leveraging Generative AI concepts.
- Examples: AI-powered chatbots or personalized marketing AI.

Session 6: Summary & Feedback

- Recap of Key Learnings
  Review concepts and activities from both days. Team Presentations
- Teams present their projects and discuss challenges. Feedback
- Collect feedback to refine future workshops.

Workshop Outcomes

- Foundational understanding of AI, ML, and GenAI.
- Hands-on experience with tools like Teachable Machine and Hugging Face .
- Ability to build and fine-tune AI models.
- Awareness of ethical considerations in AI applications.

Post Workshop Opportunities

- **What Participants Can Create**

Image classification models.

Chatbots and personalized AI tools.

Custom AI applications using ML and GenAI concepts.

- **What They Can Do After the Workshop**

Explore advanced AI/ML courses and certifications.

Apply learned concepts to solve domain-specific problems.

Build a portfolio showcasing AI projects to enhance career opportunities.

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