# Understanding AI: Large Language Models, Generative AI, and Agentic AI

*A Comprehensive Overview*

# 1 Introduction

This document explores key concepts in modern artificial intelligence: Large Language Models (LLMs), Generative AI, Agentic AI, and OpenAIs Agents SDK. Each section provides a clear explanation, highlights differences, and discusses practical applications.

# 2 Large Language Models (LLMs)

## 2.1 Definition

Large Language Models are a type of artificial intelligence trained on massive datasets of text. They learn patterns in human language, enabling them to generate human-like responses.

## 2.2 Key Features

- Understand and generate text.
- Answer questions, summarize content, and write code.
- Examples: GPT-4, Claude, Gemini.

# 3 Generative AI

## 3.1 Definition

Generative AI refers to systems capable of creating new content, such as text, images, audio, or code, based on learned patterns.

## 3.2 Key Features

- Generates diverse content types.
- LLMs are a subset, focusing on text generation.
- Examples: ChatGPT, DALLůE, Midjourney.

# 4 Agentic AI

## 4.1 Definition

Agentic AI extends beyond content generation to autonomously achieve goals. It can plan, reason, make decisions, and use tools to interact with environments.

## 4.2 Key Features

- Autonomous action and decision-making.
- Incorporates planning, memory, and tool usage.
- Suitable for complex, multi-step tasks.

# 5 Generative AI vs. Agentic AI

| Feature | Generative AI | Agentic AI |
|---|---|---|
| **Goal** | Content generation | Goal completion through action |
| **Interaction** | Single prompt-response | Multi-step, tool-using, autonomous |
| **Examples** | ChatGPT, DALLůE | AutoGPT, OpenAI Agents SDK |
| **Autonomy** | No | Yes |

Table 1: Comparison of Generative AI and Agentic AI

# 6 OpenAIs Agents SDK

## 6.1 Overview

OpenAIs Agents SDK enables developers to build goal-driven AI agents using LLMs like GPT-4. These agents can plan, reason, and execute actions using tools like APIs or custom functions.

## 6.2 Why Use It?

- Teaches building intelligent, autonomous systems.
- Enables understanding of workflows beyond simple chat.
- Prepares for real-world applications like personal AI assistants, automated researchers, or task managers.

## 6.3 Benefits

- Easy to start with Python.
- Includes built-in tools, memory, planning, and multi-turn execution.
- Supports safe experimentation with Agentic AI systems.

# 7 Conclusion

Understanding LLMs, Generative AI, and Agentic AI is crucial for leveraging modern AI technologies. While LLMs and Generative AI focus on content creation, Agentic AI introduces autonomy and goal-driven behavior. OpenAIs Agents SDK provides a practical platform for building such systems, paving the way for advanced AI applications.