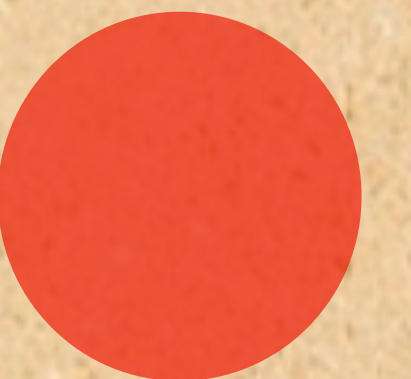


Module 4 - Topic 1

4.1.1 Intro to AI Agents





What are AI Agents?

An AI agent can be defined as a software entity that can perform tasks, make decisions, and interact with its environment autonomously.

(Google Definition)

Beyond Simple Prompts

The evolution from basic chatbots to intelligent systems requires a fundamental shift in how we utilize AI.

Current LLM Limitations:

- "One-shot" interactions miss broader context
- No ability to refine or correct their own outputs
- Limited to knowledge from training data
- Unable to interact with real-world tools and systems

The Agent Paradigm

AI Agents represent a new approach to AI, focusing on autonomous goal achievement rather than simple query-response patterns.

Core Principles:

- Goal-oriented rather than instruction-oriented
- Proactive rather than reactive
- Persistent rather than stateless
- Integrated rather than isolated
- Adaptive rather than fixed

Core of AI Agents

A well-designed AI agent combines multiple sophisticated systems working in harmony:

Key Systems:

- Reasoning Engine: Strategic decision-making
- Working Memory: Active context management
- Tool Repository: API and function access
- Feedback Loop: Self-evaluation and improvement
- Action Executor: Implementation of chosen strategies

Applications of AI Agents

AI Agents are reshaping how we approach complex tasks across different domains:

Example Implementations:

- Code Generation → Full Software Development Lifecycle
- Document Q&A → Comprehensive Research Assistant
- Finance Assistant → Autonomous Investment Tool
- Data Analysis → End-to-End Business Intelligence