The Evolution of AI: From LLMs to Agentic Systems

Explore AI's journey from language models to autonomous agents.

Focus on breakthroughs powering next-gen intelligent systems.

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Understanding Large Language Models: Capabilities and Limitations

Core Capabilities

- Natural language understanding

- Text generation and summarization

- Contextual reasoning

Limitations

- Lacks true understanding

- May produce biased output

- Contextwindow size constraints

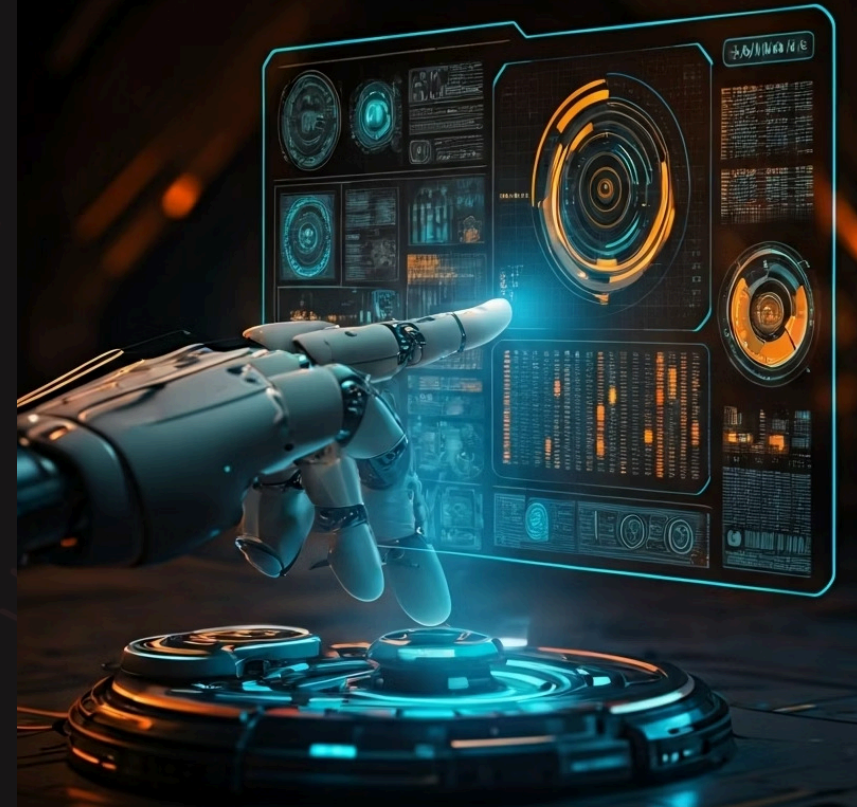# Introduction to Agentic AI: Autonomous Decision-Making

What is Agentic AI?

Systems that act autonomously with goals

Key Features

Self-directed decision making and adaptation

Benefits

Efficiency, scalability, reduced human intervention

The OpenAI SDK: Tools and Frameworks for Developers

API Integration

Seamless access to powerful LLMs

Modularity

Flexible components for custom workflows

Extensibility

Build agentic AI applications easily

Building Agentic Systems: Architecture and Components

Core Components

- Perception modules
- Decision-making engine
- Action execution layer

Supporting Elements

- Learning mechanisms
- Memory storage
- Feedback loops

Real-World Applications: Case Studies of Agentic AI in Action

Automation

Smart factories reduce manual labor

Transportation

Self-driving vehicles optimizing routes

Healthcare

Personalized treatment recommendations

Ethical Considerations and Safety Measures

1 **Bias Mitigation**

Addressing unfair outputs

2 **Transparency**

Explainable AI decisions

3 **Robustness**

Fail-safe mechanisms

4 **Human Oversight**

Ethical governance frameworks

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Future Directions: The Road Ahead for Agentic AI Development

Scalability
Deploying agentic AI at scale

Human-AI Collaboration
Augmenting human intelligence

Regulatory Standards
Global ethical frameworks

Technological Innovation
Next-gen AI capabilities

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