



The Fundamentals of AI: From the Basics to Practical Use

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"Dear friends, let us continue to love one another, for love comes from God. Anyone who loves is a child of God and knows God."
1 John 4:7

Artificial intelligence (AI) is constantly evolving and expanding into many aspects of our lives. This reality can feel both exciting and overwhelming, but AI can also be used to our advantage as a helpful tool. Understanding what AI is and how it works can make it feel less intimidating and easier to use in everyday tasks.

What is artificial intelligence (AI)?

Artificial intelligence (AI) refers to computer systems that are designed to mimic human-like tasks. It learns from data, recognizes patterns, generates responses, and automates workflows. While AI is a broad term that includes far more than large language models (LLMs) or chat bots, including self-driving vehicles, smart home devices, and streaming recommendations, we will focus on AI chatbots for a more in-depth explanation and understanding.

What are the fundamental concepts of AI?

Artificial intelligence is comprised of several key concepts that allow machines to analyze information, identify patterns, and generate helpful outputs. Below is a deeper explanation of the fundamental

concepts of AI:

1. **Machine Learning:** A combination of computer science, math, and coding used to develop algorithms that allow machines to learn from data and recognize trends and patterns.
2. **Deep Learning:** A subset of machine learning that processes large amounts of data to imitate the human brain and its decision-making process. It also recognizes patterns, but on a deeper level.
3. **Neural Networks:** Deep learning techniques that resemble the structure of the human brain.
4. **Natural Language Processing:** A form of AI that enables computers to understand, interpret, and respond to human language in spoken or written form. It enables machines to communicate with people in a more natural and human-like way.
5. **Expert System:** Applications to mimic the decision-making of human professionals, preserving and replicating their expertise.
6. **Computer Vision:** The ability for machines to process, analyze, and interpret images and videos.

How does AI work?

The foundation of AI is built upon algorithms, which are rules and instructions for how to perform tasks. These algorithms learn from data and recognize patterns, allowing them to produce responses that improve over time. The following steps outline a more detailed process for how artificial intelligence functions:

1. **Training Phase:** During training, developers provide AI models with large amounts of data, such as text, images, conversations, and documents. More information typically leads to more accurate responses.
2. **Pattern Recognition:** AI then uses algorithms to analyze the data and identify patterns in how languages, images, or actions are structured. This process is also known as machine learning, as discussed in the previous section.
3. **Response Generation:** Once the model has been trained, it interprets the request (or prompt), identifies relevant patterns, and predicts the most likely response. The more specific and detailed the prompts are, the more accurate and helpful the responses will be.
4. **Feedback & Improvement:** As users provide more specific instructions, corrections, or preferences, the responses improve over time to better meet their needs.

Quick Tip: Be polite in your prompts to AI for more natural and conversational results!

What AI tools are recommended or worth exploring?

Below is a list of AI tools that are worth exploring, with a specific focus on chatbots:

- CoPilot (for Microsoft users)
- ChatGPT
- Claude
- Gemini (for Google Suite users)
- MetaAI

While the list above focuses on chatbots, there are a variety of AI tools for other purposes, such as video and audio production, image creation, research, and professional writing.

How to implement AI into your workday?

Implementing AI into your workday can help you complete tasks more efficiently. The list below highlights practical ways to incorporate AI into your daily tasks:

1. Automate Repetitive Tasks: Utilize AI to handle repetitive, time-consuming tasks such as summarizing meetings, scheduling, and organizing information.
2. Generate & Improve Written Content: AI tools can help draft, refine, and rewrite written content such as emails and letters. When using AI for written content, make sure to use specific, detailed prompts for the most accurate responses.
3. Summarize & Digest Information: Use AI tools to condense lengthy documents, articles, and transcripts into quick summaries.
4. Brainstorm & Idea Generation: Consider using AI to create a list of ideas with fresh perspectives, creativity, and inspiration for your work.
5. Research & Information Gathering: AI tools can quickly collect relevant facts, explanations, and resources. However, it's important to verify the accuracy of the information provided.
6. Visuals & Content Creation: Utilize AI to create a variety of images, graphics, and captions for social posts, presentations, and other marketing materials.

How to create prompts for better, more accurate responses?

Creating clear, detailed prompts helps AI produce responses that are accurate and relevant to your tasks. The items below outline helpful steps for creating these prompts:

- Provide relevant background context. Describe the situation, audience, purpose, and what you're trying to accomplish in detail for the most effective responses.
- End your prompt with simple clarifying requests. Some examples include "Please ensure the response is clear and concise." and "Just Reply Okay."
- Follow up with refining requests. For example, "Please remove AI tells such as hyphens, repetitive phrasing, and generic language."

Note: Write out your content or ideas first, then use AI to refine them. Starting with your original wording before putting them into AI helps maintain a natural tone that is personal and relational.

Quick Tip: Due to the uncertainties around AI security, we do not recommend putting confidential information into your prompts. Depending on the type of confidential data, you can replace it with hypothetical information to still achieve the best results.

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By understanding the fundamentals of artificial intelligence, it becomes a powerful tool rather than a complicated technology. By applying these concepts and experimenting with different tools, you can confidently use AI to efficiently complete daily tasks. Use AI as a tool, not as a replacement for what you do best. □



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## AI Workshop

Would you be interested in a free virtual AI workshop that expands on these ideas and teaches you how to create effective prompts?

Please scan the QR code or paste the following link into your browser: <https://events.bssconsulting.com/AIWorkshopBSS>

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