



Artificial Intelligence



Artificial intelligence (AI) is considered one of the most revolutionary developments in human history, and the world has already witnessed its transformative capabilities. Not surprisingly, AI-based innovations are powering some of the most cutting-edge solutions we use in our daily lives.

Today, AI empowers organizations, governments and communities to build a high-performing ecosystem to serve the entire world. Its profound impact on human lives is solving some of the most critical challenges faced by society.

Artificial Intelligence refers to machines or systems that mimic cognitive functions like learning and problem-solving. It has been evolving over time. Two subsets are Traditional and Generative.

Traditional

Traditional AI, focuses on performing preset tasks using predetermined algorithms and rules.

These artificial intelligence applications are designed to excel in a single activity or a restricted set of tasks, such as playing chess, diagnosing diseases, or translating languages.

Examples: Virtual assistants like Siri, recommendation systems, and predictive text, recommendation engines on Netflix or Amazon, or Google's search algorithm, spam filters.

Limitations

- the need for extensive programming
- inability to handle complex tasks independently.

Generative Ai

Generative AI is the next evolution of artificial intelligence.

Generative artificial intelligence is able to produce text, video, images, and other types of content.

Generative AI models are fed vast quantities of existing content to train the models to produce new content. They learn to identify underlying patterns in the data set based on a probability distribution and, when given a prompt, create similar patterns (or outputs based on these patterns).



Generative AI relies on machine learning to understand, predict, and create content from data. It takes a massive amount of data for generative AI to function, and machine learning provides the training that fuels the AI to produce its result.

Put simply, the key difference between traditional and generative AI is that generative AI is able to create something new.

Examples are popular tools like ChatGPT, Bard, and DALL-E are all examples of generative AI.

Benefits

- Available 24/7
- Analyse large sets of data – fast
- Smart Decision-Making to streamline daily processes, analyze upcoming trends, forecast growth, and predict outcomes.
- Automation to stay connected with new and returning customers through auto-reply emails, appointment reminders, and feedback surveys
- Minimizing human error is another essential benefit of AI.

Some examples where AI is currently used

- Medical Diagnosis and monitoring
- Helping People With Disabilities
- Virtual assistants for communication, reducing isolation.
- Smart home devices for security and convenience
- Streaming Services
- Creative Work
- Education lesson plans and interactive text books
- Automated summarization of news articles for easy consumption.
- Language translation for seamless communication.
- Reporting Sexual Harassment:
- Optimizing Renewable Energy Generation:
- Combatting Human Trafficking:
- Developing New Drugs
- Car safety systems

Risks

- Lack of Transparency
- Bias and Discrimination AI systems can inadvertently perpetuate or amplify societal biases due to biased training data or algorithmic design.
- Privacy Concerns.
- Ethical Dilemmas
- Security Risks
- Concentration of Power



- The risk of AI development being dominated by a small number of large corporations and governments could exacerbate inequality and limit diversity in AI applications.
- Dependence on AI - Overreliance on AI systems may lead to a loss of creativity, critical thinking skills, and human intuition.
- Job Displacement
- Economic Inequality
- Legal and Regulatory Challenges
- AI Arms Race
- Loss of Human Connection
- Misinformation and Manipulation
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What are we doing to minimise risk

- Promote transparency and explainability
- Develop and adhere to ethical guidelines in AI development and deployment.
- Identify and mitigate biases in datasets used to train AI models.
- Implement robust data protection measures to safeguard user privacy.
- Identify and mitigate biases in datasets used to train AI models.
- Implement strong security protocols to protect AI systems from attacks.
- Support the development of regulations and standards for AI.
- Ensure compliance with existing laws and regulations.
- Incorporate human oversight in AI systems to catch errors and provide context.
- Implement systems for continuous monitoring and auditing of AI applications.
- Encourage collaboration among researchers, developers, and organizations to share best practices and insights.
- Establish channels for reporting and addressing potential risks and issues.
- Provide education and training on AI ethics and responsible development.
- Foster a culture of responsible AI within organizations and the broader community.

Ongoing research and developments

- Robotics
- Ethics
- Monitoring, managing, and mitigating the impacts of climate change and promoting sustainability.
- Human / Machine interface
- Hardware development
- Cybersecurity

Further reading resources

- <https://openai.com/research/overview>
- Beconnected Podcast
- <https://deepmind.google>



- <https://humanrights.gov.au/about/news/ethical-ai-and-global-governance>
- <https://initiatives.weforum.org/ai-governance-alliance/home>
- <https://www.un.org/techenvoy/ai-advisory-body>

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