

Introduction to the issue of artificial intelligence

Workshop #1



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Agenda

1. Introduction
2. Historical background
3. The moment we are in
4. Opportunities and potential risks of AI



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What is Artificial Intelligence?



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What is Artificial Intelligence?

- AI refers to the simulation of human intelligence in machines.
- These systems are programmed to think like humans and mimic their actions.
- Examples include speech recognition, decision-making, and visual perception.



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What is Artificial Intelligence?

Categories of AI

- Narrow AI: Specialized in one task (e.g., virtual assistants, recommendation systems).
- General AI: Mimics human intelligence across various activities (theoretical).
- Superintelligent AI: Beyond human intelligence (speculative).



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Historical Background



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Historical Background

Early Concepts

- Philosophical foundations: Aristotle's syllogistic logic.
- 1950: Alan Turing's paper "Computing Machinery and Intelligence."
- Introduction of the Turing Test.



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Historical Background

Milestones in AI Development

- 1956: Dartmouth Conference - birth of AI as a field.
- 1966: ELIZA, one of the first chatbots.
- 1997: IBM's Deep Blue defeats chess champion Garry Kasparov.



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Historical Background

Modern Developments

- 2011: IBM's Watson wins Jeopardy.
- 2012: The rise of deep learning.
- Present: AI in healthcare, autonomous vehicles, and more.



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The Moment We Are In



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The Moment We Are In

Current State of AI

- Extensive use in various industries (tech, healthcare, finance).
- Advanced machine learning algorithms: Neural Networks, GPT4, Claude, Gemini.
- Introduction of AI ethics.



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The Moment We Are In

Emerging Trends

- Explainable AI (XAI): Making AI decisions more transparent.
- AI in personalized medicine.
- Advancements in natural language processing (NLP).



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Opportunities in AI



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Opportunities in AI

Enhancing Efficiency

- AI streamlines operations in businesses.
- Examples: Automated customer service, supply chain optimization.



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Opportunities in AI

Driving Innovation

- Accelerates research and development.
- AI-driven drug discovery.
- Smart cities and improved infrastructure.



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Potential Risks of AI



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Potential Risks of AI

Ethical Concerns

- Bias in AI algorithms.
- Privacy issues and data security.
- Example: Discriminatory practices in hiring algorithms.



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Potential Risks of AI

Security and Safety

- AI in cyber warfare.
- Autonomous weapons and the potential for misuse.
- Example: Deepfakes and misinformation.



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Potential Risks of AI

Economic and Social Impacts

- Job displacement due to automation.
- Economic inequality.
- The role of education in preventing skill gaps.



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Case Studies



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AI in Healthcare

Benefits:

Early diagnosis, personalized treatment plans.

Risks:

Data privacy issues, accountability in medical decisions.



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AI in Autonomous Vehicles

Benefits:

Reduced accidents, efficient traffic management.

Risks:

Safety concerns, ethical dilemmas (decision-making in accidents).



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Regulatory Landscape



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Regulatory Landscape

AI Guidelines and Policies

- Overview of AI regulations globally.
- Examples: GDPR in Europe, EU AI Act, The AI Initiative in the USA.
- Need for international cooperation.



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Discussion



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Ethical Implications of AI

Question: Considering the biases present in AI algorithms, how should we approach the development and deployment of AI systems to ensure they are ethical and fair?

Discussion Points:

- Examples of AI bias in real-world applications
- Strategies for mitigating bias
- The role of diverse datasets and inclusive design



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Privacy Concerns in AI Applications

Question: With the growing use of AI in data collection and analysis, what are the most pressing privacy concerns, and how can we address them?

Discussion Points:

- Balancing data utility and privacy
- Regulatory measures like GDPR
- Consumer awareness and consent



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AI and Job Displacement

Question: How should society prepare for potential job displacement caused by AI and automation? What steps can be taken to manage this transition effectively?

Discussion Points:

- Sectors most likely to be affected
- The role of education and retraining programs
- Economic policies to support displaced workers



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AI in Healthcare: Benefits vs. Risks

Question: While AI has the potential to revolutionize healthcare, what are the main risks, and how can they be mitigated to ensure patient safety and data privacy?

Discussion Points:

- AI applications in diagnostics and treatment
- Data security in medical records
- Ethical considerations in AI medical decision-making



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Governance and Regulation of AI

Question: What should be the key components of effective AI governance and regulation? Who should be responsible for overseeing AI development and implementation?

Discussion Points:

- Current regulatory frameworks and their limitations
- The role of international cooperation
- Balancing innovation with public safety and ethical standards



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Thank you



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