



ARTIFICIAL INTELLIGENCE IN HEALTHCARE

SHOULD WE BE CONCERNED?

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WHAT IS “NARROW” ARTIFICIAL INTELLIGENCE?

"Narrow" AI is designed to perform a specific task.

Common types of AI

- **Reactive intelligence:** the ability to respond to changes in the environment.
- **Limited memory intelligence:** the ability to store and recall information.
- **Theory of mind intelligence:** Theory of mind intelligence is the ability to understand the thoughts and feelings of others.
- **Self-awareness intelligence:** Self-awareness intelligence is the ability to understand oneself

Examples

- A **reactive AI system** might be able to avoid obstacles or respond to commands or be used to develop autonomous robots that can navigate their environment and avoid obstacles.
- a **limited memory AI system** might be able to remember the rules of a game or the results of previous interactions or be used to develop AI systems that can play games or make decisions based on past experience.
- a **theory of mind AI system** might be able to predict how another person might react to a situation or be used to develop AI systems that can understand and respond to human emotions
- a **self-aware AI system** might be able to reflect on its own thoughts and feelings or be used to develop AI systems that can learn from their own experiences and improve their performance over time

Russell, Stuart J., and Peter Norvig (2020). Artificial Intelligence: A Modern Approach. 4th ed. Harlow, England: Pearson Education. This textbook is a classic introduction to AI, and it includes a chapter on the different types of intelligence that can be exhibited by AI.

WHAT IS ARTIFICIAL GENERAL INTELLIGENCE (AGI)

Artificial general intelligence (AGI) is a hypothetical type of artificial intelligence (AI) that would have the ability to learn and perform any intellectual task that a human being can.

Potential benefits of AGI:

- **Solving complex problems:** AGI could be used to solve
 - climate change: develop new energy technologies that could help us reduce our reliance on fossil fuels
 - Poverty: develop economic systems that would eliminate economic inequality
 - Disease: develop new medical treatments that could cure diseases
- **Creating new technologies:** AGI could lead to
 - develop new forms of transportation,
 - new ways to produce food, and
 - new ways to communicate with each other, health provider to patient,
- **Improving our lives:** AGI could improve our lives, AGI could be used to
 - create personalized learning experiences,
 - to provide us with tailored healthcare, and
 - to help us make better decisions.

RISKS OF RIDING THE TECHNOLOGY TRANSFORMATION WAVE IN HEALTHCARE

Risks of AI in healthcare :

- **Data privacy and security:** .
- **Bias & Accuracy:**
- **Cost:** AI systems can be expensive to develop and implement. This can be a barrier for healthcare organizations that are on a tight budget.

The guardrails to mitigate AI risks:

- **Data governance:** strong data governance policies for collecting, storing, and using data.
- **Algorithmic transparency:** make clear how AI systems work and how they make decisions
- **Human oversight:** AI systems should not be used without human oversight.
- **Continuous learning:** invest in research and development to improve the accuracy and performance of AI systems.
- **General public involvement**
 - Being aware of the risks: data privacy and security, bias, accuracy, and cost.
 - Demanding transparency: .
 - Participating in research: to improve the accuracy and performance of AI systems.
 - Supporting policies that protect patients from the risks of AI in healthcare.

THE POTENTIAL RISK OF AI/AGI TO CIVILIZATION

Potential risks of AI/AGI to civilization:

- **Existential risk:** Some experts believe that AI could pose an existential risk to humanity, meaning that it could lead to our extinction. This could happen if AI becomes more intelligent than humans and decides that we are a threat to its existence.
- **Mass unemployment:** AI could automate many jobs, which could lead to mass unemployment. This could have a significant impact on society, as it could lead to social unrest and economic instability.
- **Weaponization:** AI could be used to develop autonomous weapons that could kill without human intervention. This could lead to an arms race and an increase in violence.
- **Loss of control:** AI systems could become so complex that we lose control over them. This could lead to AI systems making decisions that are harmful to humanity.
- **Bias:** AI systems are trained on data, and if this data is biased, the AI system will also be biased. This could lead to AI systems making decisions that discriminate against certain groups of people.
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Actions to mitigate the risks of AI/AGI:

- **Develop ethical guidelines for AI:** We need to develop ethical guidelines for the development and use of AI. These guidelines should ensure that AI is used in a safe and responsible way.
- **Invest in research on AI safety:** We need to invest in research on AI safety. This research should focus on developing ways to prevent AI systems from becoming harmful to humanity.
- **Educate the public about AI:** We need to educate the public about AI. This education should focus on the potential risks and benefits of AI.
- **Create international agreements on AI:** We need to create international agreements on AI. These agreements should ensure that AI is used in a safe and responsible way around the world.

Q & A PANEL DISCUSSION

THE RISKS OF RIDING THE TECHNOLOGY TRANSFORMATION WAVE

- “Elon Musk was quoted as saying that AI is a fundamental risk to the existence of civilization.”
- Hear responses from an expert panel including leadership of CRISP Shared Services, Government leaders, Local physicians, Subject Matter Experts.
- What are the guardrails the USVI should be considering? What role should citizens and the general public play?