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Artificial Intelligence (AI) & Ethical Implications.

“Artificial intelligence” refers to systems that can be designed to take cues from their environment and, based on those inputs, proceed to solve problems, assess risks, make predictions, and take actions.

With the advancement in machine learning, statistical methods allow a system to “learn” from data, and make decisions, without being explicitly programmed. Such systems pair an algorithm, or series of steps for solving a problem, by constructing a working model of the world.

However, current AI systems' fragility stands in stark contrast to human intelligence, which is robust—capable of learning something in one context and swiftly applying it to another.

In addition to this, such applications raise troubling ethical issues because AI systems can reinforce what they have learned from real-world data, *even amplifying familiar risks, such as racial or gender bias*.

- **For example**, type **“greatest leaders of all time”** in your favorite search engine, and you will probably see a list of the world’s prominent male personalities. How many women do you count?

  An image search for **“school girl”** will most probably reveal a page filled with women and girls in all sorts of sexualized costumes. Surprisingly, if you type

“schoolboy,” the results will mostly show ordinary young schoolboys—no men in sexualized costumes or very few.

- These are examples of gender bias in artificial intelligence, originating from stereotypical representations deeply rooted in our societies.

  This goes to show how AI-systems deliver biased results. Search-engine technology is not neutral as it processes big data and prioritizes results with the most clicks relying on user preferences and location. Thus, a search engine can become an echo chamber that upholds the real world's biases and further entrenches these prejudices and stereotypes online.

During the past few years, **self-driving cars** that rely on rules and training data to operate have caused fatal accidents when confronted with unfamiliar sensory feedback or inputs their guidance systems couldn’t interpret.

- **For example,** Imagine an autonomous car with broken brakes going at full speed towards a grand-mother and a child. By deviating a little, one can be saved.

  This time, it is not a human driver who is going to take the decision, but the car’s algorithm.

  Who would you choose, the grandmother or the child? Do you think there is only one right answer?

This is a typical ethical dilemma, that shows the importance of ethics in the development of technologies.

AI has a huge impact in a wide range of areas, from the **legal professions and the judiciary** to aiding legislative and administrative decision making bodies.

- **For example,** they can increase lawyers' efficiency and accuracy in both counseling and litigation, with benefits to lawyers, clients, and society. Existing software systems for judges can be complemented and enhanced through AI tools to draft new decisions. This trend towards the ever-increasing use of autonomous systems has been described as the automatization of justice.

  Some argue that AI could help create a fairer criminal judicial system. Machines could evaluate and weigh relevant factors better than humans, taking advantage of their speed and large data ingestion. AI would, therefore, make decisions based on informed decisions devoid of any bias and subjectivity.

But there are **many ethical challenges:**

- Lack of transparency of AI tools: AI decisions are not always intelligible to humans.
- AI is not neutral: AI-based decisions are susceptible to inaccuracies, discriminatory outcomes, embedded or inserted bias.
- Surveillance practices for data gathering and privacy of court users.
- New concerns for fairness and risk for Human Rights and other fundamental values.

Algorithms are being deployed in decision-making systems across every facet of human life —

- How we view ourselves, who we interact with; how we get hired, who gets fired; what we buy, what we can buy; where we live, how we commute, what news we read, all the way to who gets policed and who doesn't.

Algorithms can yield unfair and discriminatory outcomes. Put two and two together; the need to hold algorithmic systems accountable cannot be understated.

A lot of the ethical concerns around AI stem from its inherent "black box" behavior. This is partly because companies do not want to share the "secret sauce" that makes their model click and partly because so much of the learning in machine learning is locked in large complex math operations.