

## Chapter 2: Benefits and Risks of AI

Artificial intelligence (AI) offers numerous advantages for productivity, health, education, and innovation, but it also carries significant risks related to privacy, social justice, security, and human decision-making power. (1)

### 2.1 Main Benefits of AI

1. **Automation and efficiency gains:** AI enables the automation of repetitive tasks (invoicing, data sorting, production, etc.), reducing human error and increasing productivity in industries such as logistics, finance, and services. (2)
2. **Improved decision-making:** By analyzing large amounts of data, AI helps produce more accurate forecasts (weather, economic trends, predictive maintenance) and supports decision-making in healthcare, environmental management, or urban planning. (3)
3. **Innovation and scientific progress:** AI accelerates research (in medicine, materials science, astrophysics, and climate studies) by uncovering complex patterns and simulating scenarios impossible to test manually. (4)
4. **Personalization and tailored services:** Content recommendations, smart filters, and personalized voice or educational assistants improve user experience and access to information. (5)
5. **Safety and reduction of human risk:** Robots, drones, autonomous vehicles, and intelligent monitoring systems can operate in hazardous environments (combat zones, mines, fires, etc.), limiting human exposure. (6)

Here are a few illustrative examples.

#### **Education: Personalized Learning**

AI-powered learning platforms adapt exercises, pacing, and content to each learner's level (for example, by calculating their success rate and suggesting targeted reviews).

Virtual tutoring systems can track a student's progress, identify weak points, and generate clinical or scientific case scenarios to strengthen understanding.

## **Businesses: Automation and Error Reduction**

AI automates repetitive tasks like data entry, invoicing, inventory management, or payroll processing, significantly reducing human errors and operational costs.

For instance, an AI system can analyze reimbursement requests, detect duplicate invoices or anomalies, and block them before payment, thereby limiting financial losses.

## **Transportation and Logistics: Route Optimization**

AI algorithms optimize delivery routes by factoring in traffic, weather, and logistical constraints, which reduces delivery times and fuel consumption.

Transportation companies thus use AI to plan truck routes that minimize mileage while meeting deadlines, improving punctuality and customer satisfaction.

## **Customer Relations: Chatbots and Personalization**

AI chatbots provide 24/7 support, answer common questions, resolve simple issues, and direct customers to human agents only when necessary.

Meanwhile, AI analyzes purchasing behaviors to recommend tailored products or services (personalized suggestions on Amazon, Netflix, etc.), boosting satisfaction and sales.

## **Environment and Energy: More Efficient Management**

### **Continuation of AI Benefits and Risks**

## **Environment and Energy: More Efficient Management**

AI helps optimize energy consumption in buildings, factories, or electrical grids by adjusting air conditioning, lighting, or production in real time.

## 2.2 Main Risks of AI

1. **Bias, discrimination, and injustice:** AI models learn from often biased data (historical, social, cultural), leading to discriminatory decisions in recruitment, credit, justice, or predictive policing.[7]
2. **Job loss and labor market evolution:** Automation threatens repetitive low-skilled jobs, potentially causing unemployment, increased inequality, and difficult transitions if reskilling policies lag.[8]
3. **Security and sophisticated cyberattacks:** AI systems can be hacked, hijacked, or used to generate deepfakes, misinformation, or targeted attacks, threatening democracy, businesses, and individuals.[9]
4. **Technological dependence and loss of control:** Excessive AI use can weaken human critical thinking, creativity, and independent decision-making, making society vulnerable to system failures.[10]
5. **Autonomous weapons and militarization:** Military research develops autonomous weapons (drones, robots, vehicles) capable of targeting and firing without direct human decisions, risking loss of control and flash wars.[11]
6. **Over-dependence and loss of human control:** In healthcare, AI aids diagnosis, but over-reliance by practitioners weakens expertise and raises accountability issues if errors occur. Socially, heavy AI use in decisions (recruitment, education, credit, justice) reduces critical thinking and the ability to challenge automated rulings.[12]

Here are a few illustrative examples.

### **Examples: Facial Recognition Less Reliable for Dark Skin**

Facial recognition systems (e.g., for security or policing) make more errors on people with dark skin or certain ethnic minorities because training datasets are mostly white faces.

This leads to false identifications, arrests, or abusive checks targeting specific groups.

### **Examples: Voice Recognition Limited to "Dominant" Accents**

Voice assistants (chatbots, personal aides) perform better on majority or native accents, underperforming for non-native speakers, regional accents, or dialects.

This limits accessibility for underrepresented groups in training data.

## **Zelensky Calling for Surrender**

In March 2022, a deepfake of Ukrainian President Volodymyr Zelensky appeared on hacked TV channels, showing him seemingly urging Ukrainian soldiers to surrender to the Russian army.

The video was quickly debunked and removed, but it spread widely first in Russia, demonstrating AI's potential to spread disinformation during armed conflicts.[\[13\]](#)

## **Greta Thunberg "Pro-Sustainable Weapons"**

In 2023, a satirical account published a deepfake of Greta Thunberg using one of her real interviews, but altered the text to make her appear in favor of "vegan grenades" or "biodegradable missiles."

Several internet users believed the video was authentic, showing how a deepfake can damage a person's reputation, even if the original intent was humorous.

## **Bella Hadid "Changing Her Mind" on Israel**

A deepfake of model Bella Hadid, known for her support of Palestine, showed a manipulated version where she seemed to apologize and express support for Israel after a Hamas attack.

The video was viewed over 30 million times on X/Twitter, and the controversy highlighted how AI can manipulate public opinion on highly sensitive conflicts.

## **Deepfake Frauds Involving Elon Musk and Business Leaders**

A 2024 deep fake video of Elon Musk circulated, pretending to promise \$20 million in crypto currency to those who sent money, leading to financial losses for some individuals.

Similarly, audio deep fakes of CEOs (e.g., at Arup or LastPass) tricked employees into authorizing fund transfers, causing multimillion-dollar losses.

## **2.3 Balance and Governance**

To harness AI's benefits without its risks, many experts and organizations (OECD, UN, European parliaments) advocate for governance based on algorithm

transparency, bias audits, data protection, new legal liability rules, and investments in safe, ethical AI.[\[14\]](#)

In summary, AI is a powerful tool that can positively transform society, but only if its deployment is framed by clear rules, human values, and constant vigilance regarding its social and ethical impacts.[\[14\]](#)