

Chapter 5: AI Innovations: Shaping the Future

1. Setting the Stage

Artificial Intelligence is no longer confined to the pages of science fiction or the labs of research institutions—it is now a defining force of our era. From redefining how we work and learn, to reshaping healthcare, transportation, and communication, AI is driving profound transformations across nearly every sector of society.

Yet, with its astonishing potential comes a complex set of ethical dilemmas, unforeseen consequences, and social disruptions. This chapter analyses the evolving landscape of AI innovations, examining how these technologies are accelerating progress and challenging us to rethink responsibility, regulation, and the very nature of human decision-making. As we explore what lies ahead, one question remains central: how do we harness the promise of AI while dealing the uncertainties it brings?



Activity 1: AI Headlines — Fact or Fiction?

Read the following headlines and mark each one as either **FACT** (a real AI development) or **FICTION** (a made-up scenario).

Headlines:

1. AI Diagnoses Rare Diseases More Accurately Than Doctors.
2. AI App Translates Dreams into Text Messages.
3. Estonia Uses AI Judges for Small Claims Court Cases.
4. AI Emotion Chips Implanted to Improve Focus in Students.
5. Self-Driving Ambulances Operate in Remote Australia.
6. AI-Powered Fridge Chooses Your Weekly Diet Based on Mood.

Activity 2: The "What If" Journal Prompt

Read the following "What if" scenarios and explore the consequences.

Prompt 1: What if AI replaced all university instructors within the next 10 years?

Prompt 2: What if AI determined who gets hired in all companies?

Prompt 3: What if AI could read your thoughts and emotions accurately?

Activity 3: Agree or Disagree — AI Quick Takes

Read each statement below and write "Agree" or "Disagree" next to it. Then write **one sentence explaining your position**.

1. AI should have the right to make medical decisions.
2. AI surveillance is acceptable if it improves public safety.
3. AI will benefit the job market more than it will harm it.
4. AI-generated art should be protected by copyright laws.
5. AI should never be allowed to replace human teachers.

2. Take a Listen



Activity 4: AI Trend or Tech Hype?

Match the AI trends mentioned in the video with their correct definitions. Then, explain in 1–2 sentences how each trend could impact society in the next 5 years.

Work in pairs or groups, and compare answers.

AI Trend	Match to Description	Explanation (your own words)
A. Autonomous AI	_____	
B. Hyper-personalization	_____	

AI Trend	Match to Description	Explanation (your own words)
C. General-purpose robotics	_____	
D. Multimodal AI	_____	
E. Edge AI	_____	

1. AI embedded in devices like phones or appliances that processes data locally
2. AI capable of switching between various tasks and learning from its environment
3. AI systems that combine visual, audio, and text data for decision-making
4. AI that creates, trains, and improves other AI models without human help
5. Services tailored to individuals based on behavior, mood, and habits

Activity 5: Now or Not Yet? AI in Action

Read each AI advancement below and decide whether it's "Already Real" or "Still Emerging." Circle your choice.

1. AI systems creating hyper-personalized playlists based on your emotions.
2. AI robots navigating homes to assist the elderly.
3. AI completely replacing human therapists for mental health care.
4. AI models learning continuously without forgetting old data.
5. AI designing entire urban layouts to reduce emissions.

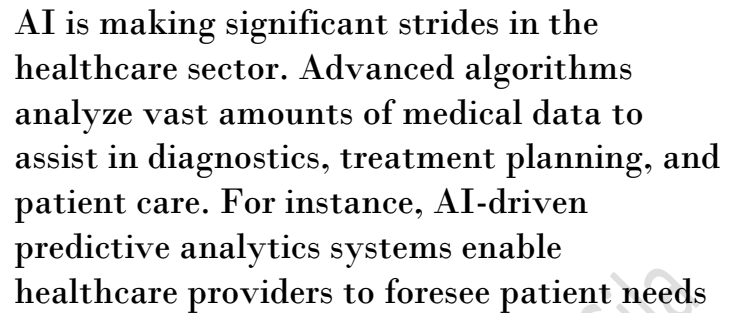
3. Read & Reflect

AI Innovations: Shaping the Future

Artificial Intelligence (AI) is no longer a futuristic concept; it is an integral part of our daily lives, revolutionizing industries and redefining the way we interact with technology. From healthcare to education, and from business operations to entertainment, AI's impact is profound and far-reaching.



AI in Healthcare: Revolutionizing Patient Care



AI in Education: Personalized Learning Experiences

AI in Business: Streamlining Operations

The entertainment industry is also experiencing AI-driven transformations. Streaming platforms like Netflix and Spotify use AI algorithms to recommend content based on user preferences, enhancing the user experience. Additionally, AI tools are being used to generate music, write scripts, and create artwork, opening new avenues for creativity and artistic expression.



Ethical Considerations: Navigating the Challenges

As AI continues to evolve, it brings forth ethical considerations that must be addressed. Issues such as data privacy, algorithmic bias, and job displacement are at the forefront of discussions. Ensuring responsible AI development involves implementing regulations and ethical guidelines to balance innovation with societal values.

Toxigon. (2025). *AI Innovations Shaping the Future: What to Expect in 2025*. Retrieved from <https://toxigon.com/ai-innovations-shaping-the-future>

Activity 6: Vocabulary in Context

Fill in the blanks with the correct word from the word bank. Each word is used once.

Word Bank: ethics – predictive – algorithms – diagnostics – entertainment – transportation

1. AI-powered _____ tools are revolutionizing disease detection in healthcare.
2. In the business sector, fraud detection often relies on advanced _____.
3. One of the key challenges of AI development involves concerns about _____ and privacy.
4. AI in _____ includes autonomous vehicles and smart traffic systems.
5. Platforms like Netflix use _____ models to suggest content to users.
6. AI is transforming the _____ industry through facial recognition and interactive content.

Activity 7: Choose the Right Word Activity on Moodle

Activity 8: Categorize AI Applications

Place each item under the correct category.

Items: self-driving cars – Netflix recommendations – AI medical diagnostics – chatbot tutors – virtual actors – fraud detection

Categories:

- **Healthcare:**
- **Education:**

- **Transportation:**
- **Entertainment:**
- **Business:**

4. Grammar in Action



Conditional Sentences (Type 1, Type 2, and Mixed Conditionals)

Conditional sentences express possible or hypothetical situations and their outcomes. They are divided into **types** based on the time and reality of the condition.

Type 1 – Real Possibility (Present or Future)

- **Structure:**

If + present simple, will + base verb

- **Use:**
To talk about real and possible situations in the present or future.
- **Example (AI Context):**
 - ✓ *If developers improve AI ethics, users will trust the technology more.*
 - ✓ *If AI continues to advance, it will reshape the job market.*

Type 2 – Unreal/Hypothetical (Present or Future)

- **Structure:**

If + past simple, would + base verb

- **Use:**
To talk about imaginary or unlikely situations in the present or future.
- **Example (AI Context):**
 - ✓ *If AI were more transparent, it would be easier to regulate.*
 - ✓ *If I had advanced AI tools, I would finish this research faster.*

◆ Type 3 – Unreal Past (Imaginary Past and Result)

- **Structure:**

If + past perfect, would have + past participle

- **Use:**
To express regret or imagine a different outcome in the past.
- **Example (AI Context):**
✓ *If companies had invested in security, data breaches would have been prevented.*
✓ *If the AI system had been tested more thoroughly, it wouldn't have failed.*

◆ Mixed Conditional – Past Condition with Present Result

- **Structure:**
If + past perfect, would + base verb
- **Use:**
To talk about a past action that affects the present.
- **Example (AI Context):**
✓ *If tech leaders had taken action earlier, people would feel safer using AI today.*
✓ *If more schools had integrated AI tools, students would benefit now.*

👉 Quick Tips:

- Use **Type 1** for *likely* events.
- Use **Type 2** for *unlikely or imagined* scenarios.
- Use **Type 3** for *regrets or hypothetical pasts*.
- Use **Mixed** when the past affects the present.

Activity 9: AI Futures – Predict, Imagine, Reflect

Below are eight incomplete sentences about AI. Complete each using the correct type of conditional (Type 1, 2, 3, or mixed).

✂ Sentences:

1. If AI governance continues to evolve, ...
2. If AI were fully unbiased, ...
3. If engineers had tested the system more thoroughly, ...
4. If social media platforms had integrated ethical AI earlier, users ...
5. If we don't address data privacy today, ...
6. If I were leading an AI research team, ...

7. If education systems had adopted AI tools five years ago, students ...
8. If developers had considered long-term risks, today's algorithms ...

Activity 10: What If AI Changed History?

You will be given four real or fictional AI-related scenarios. For each, write two conditional sentences:

- One imagining a **different past** (Type 3 or Mixed)
- One predicting a **possible or imaginary future** (Type 1 or 2)

☐ Scenarios:

1. In 2020, a healthcare AI system misdiagnosed several patients.
2. You are leading a global team designing ethical AI policies.
3. Several schools refused to adopt AI in their curriculum.
4. Imagine that in 2030, AI will control most global logistics.

5. Speak & Debate

Activity 11: The AI Ethical Dilemma

Consider the following AI-related ethical dilemma:

AI is used in job recruitment to filter out candidates based on algorithms that might include biased data.

Provide a clear description of the ethical dilemma, and your

stance on the issue. Use predictions (Type 1), hypothetical reflections (Type 2), past alternatives (Type 3), and past-present impacts (Mixed).



Writing for Impact



Write a **well-structured argumentative essay** (500–800 words) in response to the topic:

Should Humanity Place Legal and Ethical Limits on Artificial Intelligence Development? Discuss with Reference to Real-World Examples

Your essay should:

1. Introduce the topic clearly and state your **thesis**.
2. Present **at least two main arguments** supporting your position.
3. Address **one counterargument** and explain why you disagree or partially agree.
4. Use **real-world examples** of AI technologies.
5. Include **conditional sentences** (Type 1, 2, 3 or Mixed) to show the consequences of action or inaction.
6. Conclude with a strong restatement of your thesis and a final reflection.