

Lecture (5)

AI in our daily lives

AI in smartphones and virtual assistant

like Siri or Google assistant

1. Artificial Intelligence in Our Daily Lives (AI in Our Daily Lives)

Artificial intelligence is integrated into many aspects of modern life, such as:

E-commerce: recommendation systems (e.g., Netflix, Amazon).

Healthcare: diagnosing diseases through medical image analysis.

Transportation: self-driving cars and navigation applications (e.g., Google Maps).

Entertainment: engines that generate music or digital art.

Source: Mitchell, M. (2019). Chapter 1: "What Is Artificial Intelligence?" (1st ed.).

2. Artificial Intelligence in Smartphones (AI in Smartphones)

AI technologies are used in phones to enhance users' daily experiences through:

a. Smart Cameras (Computational Photography):

Face and Object Recognition: Automatically identifying faces to adjust focus (e.g., Portrait Mode on the iPhone).

Lighting Optimization: Using algorithms like HDR+ in Pixel phones to improve image quality in low light.

Smart Filters: Removing noise or adding effects based on the context of the image.

Source: Mitchell, M. (2019). Chapter 5: "Computer Vision."

B. Battery Management and Performance:

Predictive Machine Learning: Predicting app usage (such as Android's Adaptive Battery) to close unused apps.

Charging Optimization: Adjusting charging speed based on user habits.

C. Smart Keyboard:

Word Prediction: Using language models (such as GPT-3) to suggest words or correct errors.

Instant Translation: Translate text in real time (such as the built-in Google Translate feature).

3. Virtual Assistants like Siri and Google Assistant

These assistants rely on a combination of AI technologies:

A. Natural Language Processing (NLP):

Intent Recognition: Converting voice commands into text and understanding context (e.g., "What's the weather tomorrow?").

Smart Response: Generating personalized responses using models such as BERT or LaMDA.

Source: Russell, S. (2019). Chapter 4: "AI in Practice" (1st ed.).

B. Machine Learning:

Personalization: Analyzing user habits to provide recommendations (e.g., reminding you to recharge your phone based on your usage).

Adapting to Dialects: Improving voice recognition accuracy by training models on diverse data.

C. Integration with IoT Systems:

Smart Home: Controlling lights or the refrigerator via voice commands.

Sequential Tasks: Creating automated routines (e.g., "Good Morning" to turn on coffee and display the news).

4. Challenges and Ethical Considerations

Privacy: Storing voice data may violate users' privacy (e.g., Amazon Echo recordings).

Bias: Models may fail to understand non-standard dialects or rare languages.

Over-reliance: Reducing direct human interaction in everyday tasks.

Source: Russell, S. (2019). Chapter 7: "Ethics and Risks of AI."