

*Education on the Horizon: Teaching
and Learning with Technology*

Week 7: Personalized and
Adaptive Learning Pt. 1

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Have you experienced these in your everyday life?

- YouTube suggests new videos based on what you have watched
- Your smart phone can automatically create an album with photos with your face in it
- You have to prove "I'm not a robot" during login
- These are possible because of “artificial intelligence” (AI)

What is artificial intelligence (AI)?

- AI are intelligent computer programs that mimic the problem-solving and decision-making capabilities of the human mind
- Traditional computer program: Input \rightarrow Output is predetermined
- AI: Input \rightarrow Output is conditional
 - training data \rightarrow algorithm \rightarrow real data

Key features of AI

- **Autonomy:** The ability to perform tasks in complex environments without constant guidance by a user.
- **Adaptivity:** The ability to improve performance by learning from experience.

Why is it "intelligent"?

- Learning is the acquisition of associations: what input leads to what output
- AI can make inferences about new inputs based on learned associations
- Therefore AI is capable of "learning" based on "past experience", similar to human decision making
- Computer Scientist Explains Machine Learning

Some interesting *AI* demos

Generative Text

- AI writes news
- AI answers any questions

Generative Graphic

- AI draws anything based on your prompt
- AI video

Generative Voice and Sound

- Deep fake voice
- Another highly realistic voice generator
- Generative music

Moving AI

- AI talk to human
- AI talk to AI

