

6-1 Journal: Emerging Technology

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1. What is the identification and description of each technology?

For this week's journal regarding emerging technology, the two I have decided to choose are Machine Learning (ML) and Artificial Intelligence (AI). Machine learning (ML) is a branch of artificial intelligence (AI) and computer science that focuses on the using data and algorithms to enable AI to imitate the way that humans learn, gradually improving its accuracy (IBM, n.d.). Machine learning allows a computer to make decisions or predictions from data without being programmed. While ML and AI go hand in hand, Artificial intelligence, or AI, is technology that enables computers and machines to simulate human intelligence and problem-solving capabilities (IBM, n.d.). Artificial intelligence requires some human interaction to be involved unlike Machine Learning.

2. What are the likely impacts on computer science or your career?

While Machine Learning and Artificial Intelligence may have their benefits, I believe there will be significant impact on computer science and in related careers. According to Anna Johansson, "By some estimates, within 15 years, automated algorithms and robots could take over approximately 40 percent of global jobs available to humans today." They then mention "The jobs being replaced are often entry-level, or those that require highly repetitive manual tasks." While some opinions about ML and AI in the field of computer science may be wrong, there is no denying that many jobs within the field will eventually be obsolete. I have been able to accept this change and have realized that we are in the forefront of these new technologies. Luckily enough, the field of computer science is not going away overnight. Eventually I suspect that computer science as a career will be even more competitive than it already is. Even though

many jobs will be replaced with these technologies, there will be more opportunities that will open. Anna Johansson also mentions, “Roughly 20 percent of companies will have employees dedicated to monitoring and guiding neural networks, and more than 10 percent of new IT hires in customer service will be responsible for writing scripts for chatbots, one application of AI.”

3. How might the two technologies impact humans, communities, or the world?

Machine Learning and Artificial Intelligence can impact humans, communities, and the world in various ways. When looking at the impact on humans, these two technologies will eventually change many industries, making them fully automatic. This means there is a chance of job displacement while creating new jobs in other areas. On a more consumer side of human interaction these two technologies will play a big role in personalization. ML and AI will be able to analyze large sets of data to make recommendations for an individual's preference. Vincent Caruana states, “Right now, 92% of businesses are using AI-driven personalization to drive growth and revenue, and they’re finding personalization so powerful.”

4. Which course outcomes have you achieved so far, and which ones remain?

The course outcomes I have currently achieved so far include:

- Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution while managing the trade-offs involved in design choices.
- Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals.

- Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources.
- Employ strategies for building collaborative environments that enable diverse audiences to support organizational decision-making in the field of computer science.
- Design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts.

Status Checkpoints for All Categories

Checkpoint	Software Design and Engineering	Algorithms and Data Structures	Databases
Name of Artifact Used	Artifact name: Inventory Management Android Mobile App Origin: CS 360 Mobile Architect and Programming	Artifact name: Inventory Management Android Mobile App Origin: CS 360 Mobile Architect and Programming	Artifact name: Inventory Management Android Mobile App Origin: CS 360 Mobile Architect and Programming
Status of Initial Enhancement	Enhancements completed	Enhancements completed	Enhancements completed
Submission Status	Submitted with feedback from the instructor	Submitted with feedback from the instructor	Submitted with feedback from the instructor
Status of Final Enhancement	Feedback was applied, and the final polish was applied	Feedback was applied, and the final polish was applied	Feedback was applied, and the final polish was applied
Uploaded to ePortfolio	Completed with polished narrative and confirmed navigation on GitHub Pages site	Completed with polished narrative and confirmed navigation on GitHub Pages site	Completed with polished narrative and confirmed navigation on GitHub Pages site
Status of Finalized ePortfolio	Ready for review in Module Seven	Ready for review in Module Seven	Ready for review in Module Seven

References

What is machine learning (ML)? (n.d.). <https://www.ibm.com/topics/machine-learning>

What is Artificial Intelligence (AI)?. IBM. (n.d.). <https://www.ibm.com/topics/artificial-intelligence>

Johansson, A. (2019, May 17). *How AI and Machine Learning are affecting the computer science industry*. IEEE Computer Society. <https://www.computer.org/publications/tech-news/trends/how-ai-and-machine-learning-are-affecting-the-computer-science-industry>

Caruana, V. (2024, February 15). *The abcs of artificial intelligence personalization*. Algolia. <https://www.algolia.com/blog/ai/how-ai-powered-personalization-is-transforming-the-user-and-customer-experience/>