6-1 Journal Entry: Emerging Technology and Artifact Update

Noah Khomer

Southern New Hampshire University

CS-499 (Capstone Project)

Joseph Martinez

10/11/2025

6-1 Journal Entry: Emerging Technology and Artifact Update

One of the most emerging and disruptive technologies in 2025 has been artificial intelligence and machine learning. The reason for this is because they are transforming how software and systems operate on a large scale. These technologies allow computers to learn from patterns so that they can make better predictions and then automate decision-making. It combines three different steps of intelligence into one. For example, for natural language processing, tools like ChatGPT or Javani are being used to build recommendation systems that are used by Netflix and Amazon for user engagement. AI is starting to reshape how industries range from healthcare to finance.

AI has expanded a lot into the field of computer science by introducing a brand-new subfield in data science, reinforcement learning, and even neural networks. One example of this is the new Tesla Autopilot system that works on neural networks. As a software engineer, it is important to understand how to implement these machine learning models that can give me an advantage in automation, analytics, and intelligent system design. It also helps me make better-designed software applications that can respond dynamically to user behavior to keep them engaged.

Artificial intelligence is starting to impact humans and communities a lot. It has become every part of daily life because it is improving so much accessibility through unique features like voice assistants, automating repetitive work, and even supporting medical diagnostics in some places. It brings up an incredibly huge problem. The problem that artificial intelligence is posing is ethical challenges such as artificial intelligence learning from human patterns, and human patterns are shown to have bias and cause job displacement. So, bias and innovation with responsibility will be a crucial part of modern development to avoid bias.

Another disruptive technology that has completely changed how data and applications are being managed and delivered is cloud computing. Instead of saving everything locally, developers can deploy apps to global cloud platforms. Some of these global platforms are Amazon Web Services, Azure, and even Google Cloud, which gives users access to their files from anywhere.

There is not that big of an impact on computer science or my career when it comes to cloud computing because cloud computing is just redefining software scalability, networking, and security. So, in my work, deploying a full-stack application through the cloud makes sure that it is dependable and the performance is good across different regions of the world. Being able to learn DevOps and containerization such as Docker or Kubernetes is starting to become more essential for career growth and modern deployment practices.

The main beauty of cloud computing is that it allows startups and nonprofits, including individuals, to innovate without large infrastructure costs. You no longer need a physical processing data center because you can connect with teams globally through online learning, remote healthcare, and even digital collaboration. The environmental impact of massive data centers will remain a concern, but cloud computing is supposed to reduce the footprint.

For Part 2 about the status checkpoints of all categories, I have already demonstrated skill in software design and architecture through my Pirate AI reinforcement learning. I have focused on algorithms and databases through my Traveler project, and lastly, I have applied secure version control and modular design principles. But overall, I am ready to submit my portfolio.

| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| --- | --- | --- | --- |
| **Name of Artifact Used** | Pirate Agent (CS-370) | Pathfinding Agent (CS-370) | Travlr Getaways (CS-465 → CS-499) |
| **Status of Initial Enhancement** | Improved UI and architecture | Enhanced logic and algorithm structure | Refactored schema and relationships |
| **Submission Status** | Submitted | Submitted | Submitted |
| **Status of Final Enhancement** | Completed | Completed | Completed |
| **Uploaded to ePortfolio** | Yes | Yes | Yes |
| **Status of Finalized ePortfolio** | Finalized and submitted | Finalized and submitted | Finalized and submitted |

References

Cloud computing services - amazon web services (AWS). (n.d.).

[https://aws.amazon.com/](%20https:/aws.amazon.com/%20)

*Using generative AI in content production*. Netflix. (n.d.).

[https://partnerhelp.netflixstudios.com/hc/en-us/articles/43393929218323-Using-Generative-AI-in-Content-Production](https://partnerhelp.netflixstudios.com/hc/en-us/articles/43393929218323-Using-Generative-AI-in-Content-Production%20)

Wang, Y. (2007). Engineering Foundations of Software Engineering. *Software Engineering Series*, 575–653.

[https://doi.org/10.1201/9780203496091.pt3](https://doi.org/10.1201/9780203496091.pt3%20)