**6-1 Journal: Emerging Technology and Artifacts Update**

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CS-499 - Computer Science Capstone

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**Part One:**

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

According to IEEE and Your Team India (IEEE, 2025) (Guleria, 2025), they both identify computer science and engineering technologies emerging trends that will have the most significant impact in 2025 and beyond. They both place Artificial Intelligence and Machine Learning at the top of the lists. Currently, AI and ML estimate the current valuation of 100 billion dollars and is projecting to increase to close to 2 trillion dollars by 2030. The success of AI and ML impacts every field, ranging from finance and healthcare to manufacturing and retail, which is why it is such a huge emerging trend. Both aim to help businesses make informed decisions, project purchasing behavior, extract data to provide business insights, automate takes, increase safety and security and enhance system capabilities. Another clear emerging trend is Augmented and Virtual Reality. This trend is finding its way into many fields from entertainment, marketing, retail tourism to healthcare. Other emerging trends identified by both these organizations are LLM deployment and Natural Language Processing, Internet of Things (IoT), and Wearable Health Devices. These emerging trends overlap both major organizations’ top trends because they will have significant impacts on the global ecosystem, focusing on the most advancement, largest market adoption, and market maturity.

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

Most articles and experts within the field of computer science are naming these as emerging trends over the next 5 years. Just getting into the computer science field, it is important to understand trends to stay above the curve and continue learning new skills that will make me successful and relevant in the field. For example, with the rise of AI, new roles within the field are starting to emerge while others will soon become obsolete. Knowing and studying upcoming trends will ensure that my position in the computer science industry does not also become obsolete.

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

These trends are so beneficial because they will have direct daily impacts on consumers. With some of the continued advancements in AI, creation of miniaturized electronics and better battery lifespans, it will put these technologies right into the hands, quite literally, of consumers at a reasonable price. It will also allow human to better understand and analyze data, make more informed decisions, and potentially identify and diagnose issues and trends.

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

I have now completed all course outcome including updating and polishing my enhancements while incorporating professor feedback. I have started working on the ePortfolio which is due next week.

## Part 2: Status Checkpoints for All Categories

| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| --- | --- | --- | --- |
| **Name of Artifact Used** | **Artifact name:** Grocery Tracking Program  **Origin:** CS210 – Programming Languages. | **Artifact name:** Grocery Tracking Program  **Origin:** CS210 – Programming Languages. | **Artifact name:** Grocery Tracking Program  **Origin:** CS210 – Programming Languages. |
| **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** | Planned but not yet completed | Planned but not yet completed | Planned but not yet completed |
| **Status of Finalized ePortfolio** | Planned but not yet completed | Planned but not yet completed | Planned but not yet completed |

# References

Guleria, R. (2025, March 20). *25+ Emerging Trends in Information Technology [2025].* Retrieved from YourTeamIndia: https://www.yourteaminindia.com/blog/emerging-trends-in-information-technology

IEEE. (2025, January 14). *IEEE Reveals Predictions for Top Technology Trends of 2025.* Retrieved from IEEE: https://www.ieee.org/about/news/2025/ieee-reveals-predictions-for-top-technology-trends-of-2025