Mitchell Fontaine

CS-499

04/10/2025

6-1 Journal: Emerging Technologies and Artifact Update

In this journal, I will discuss the emerging technologies of quantum computing and augmented reality. Quantum computing leverages quantum mechanics to solve complex problems much faster than classical computers and has many implications for cryptography, drug discovery, and climate modeling. While it promises breakthroughs in science, it also poses risks, such as breaking current encryption methods, requiring a shift to post-quantum security (Biondi et al., 2021). Meanwhile, AR overlays digital content onto the physical world, transforming industries like retail, healthcare, and education through immersive experiences. However, it raises concerns about privacy and digital dependency as AR devices become more pervasive (Aliwi et al., 2023). Both technologies demand new skill sets while challenging developers and policymakers to address ethical and security concerns.

These innovations highlight the accelerating pace of technological change and its dual impact on society. Quantum computing could revolutionize fields like medicine and energy but requires careful governance to prevent misuse. AR enhances real-world interactions but may deepen societal inequalities if access is limited. As these technologies mature, computer scientists must adapt by learning new tools while considering their broader societal implications. The future will likely see further convergence of quantum computing with AI and AR with the metaverse, creating even more transformative and disruptive possibilities.

| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| --- | --- | --- | --- |
| **Name of Artifact Used** | **Artifact name:** Event Tracker Android Mobile App  **Origin:** CS 360 Mobile Architect and Programming | **Artifact name:** Event Tracker Android Mobile App  **Origin:** CS 360 Mobile Architect and Programming | **Artifact name:** Event Tracker 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 instructor | Submitted and awaiting feedback from instructor |
| **Status of Final Enhancement** | Feedback was applied, and the final polish was applied | Feedback was applied, and the final polish was applied | Awaiting Feedback |
| **Uploaded to ePortfolio** | Enhancement uploaded with confirmed navigation on GitHub Pages site | Enhancement uploaded with confirmed navigation on GitHub Pages site | Initial enhancement uploaded with 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

Aliwi, I., Schot, V., Carrabba, M., Duong, P., Shievano, S., Caputo, M., Wray, J., De Vecchi, A., & Biglino, G. (2023). The role of immersive virtual reality and augmented Reality in Medical Communication: A scoping review. *Journal of Patient Experience*, *10*. <https://doi.org/10.1177/23743735231171562>

Biondi, M., Heid, A., Henke, N., Mohr, N., Pautasso, L., Ostojic, I., Wester, L., & Zemmel, R. (2021, December 14). *Quantum computing use cases are getting real—what you need to know*. McKinsey & Company. <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/quantum-computing-use-cases-are-getting-real-what-you-need-to-know>