# CS 499 Module Six Journal: Emerging Technology and Artifact Update

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## Part One: Emerging Technologies

The first emerging technology shaping the future of computer science is Quantum Computing. Unlike traditional binary computing, quantum systems use qubits that can exist in multiple states simultaneously, enabling massive parallel computation. This breakthrough has the potential to transform industries reliant on complex problem-solving, such as cybersecurity, materials science, and data analysis. Quantum computing could redefine encryption standards, optimize large-scale systems, and accelerate artificial intelligence by allowing algorithms to process exponentially larger datasets at once. For my career path, it represents a new domain of algorithmic thinking and secure software design that I intend to explore as the field matures.

The second game-changing technology is Neuromorphic Computing, which seeks to replicate the structure and function of the human brain through artificial neural architectures implemented directly in hardware. This approach drastically reduces power consumption and increases processing efficiency, opening new frontiers for AI systems and robotics. Neuromorphic chips can learn and adapt in real time, which could revolutionize areas like autonomous vehicles and natural language processing. For humanity, these innovations bring both opportunity and responsibility, as ethical and privacy considerations will be essential in balancing automation with accountability. These developments directly impact my career goals by emphasizing intelligent systems, adaptive algorithms, and ethical AI design. So far, I have achieved most course outcomes related to designing secure, efficient, and innovative software systems, and I am now focused on refining communication and collaboration skills for my final ePortfolio.

## Part Two: Status Checkpoints for All Categories

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| --- | --- | --- | --- |
| Checkpoint | Software Design and Engineering | Algorithms and Data Structures | Databases |
| Name of Artifact Used | Inventory Management Android App Origin: CS 360 – Mobile Architecture & Programming | Top 5 Destination Slideshow Origin: CS 250 – Software Development Life Cycle | Grazioso Salvare MongoDB CRUD and Dash Application Origin: CS 340 – Client-Server Development |
| Status of Initial Enhancement | Enhancement completed and verified through testing | Enhancement completed with algorithmic optimization and validation | Enhancement completed with secure connection implementation and data optimization |
| Submission Status | Submitted with instructor feedback | Submitted with instructor feedback | Submitted with instructor feedback |
| Status of Final Enhancement | Final version polished and tested | Polished for efficiency and documentation clarity | Polished for security and usability improvements |
| Uploaded to ePortfolio | Complete and accessible on GitHub Pages | In progress and pending final review | Planned for Module Seven submission |
| Status of Finalized ePortfolio | Ready for Module Seven review | Final refinements in progress | Will be finalized after instructor feedback |

## Feedback

I would appreciate confirmation that my database artifact (Grazioso Salvare) fully meets the expectations for demonstrating secure, optimized data management and effective integration of MongoDB with the Dash visualization interface before I finalize my ePortfolio. Additionally, I would welcome feedback on the clarity and polish of my artifact narratives to ensure they effectively communicate my growth and technical abilities across all three enhancement categories.