Journal Entry #4

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CS-499-10941-M01 Computer Science Capstone 2024 C-4

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**Quantum Computing** is pretty exciting because it’s the next big thing in tech. It uses quantum mechanics to handle data in ways our computers can’t even touch. Imagine solving super complex problems in seconds instead of years—that’s what quantum computing aims to do. It will revolutionize things like cryptography and drug discovery because it can process information much faster and differently than we're used to.

**Artificial Intelligence (AI)** is another huge trend that’s already changing our lives. Think about all the smart assistants, recommendation systems, and self-driving cars. AI is making all of that possible. It’s fascinating because it can learn from data and make decisions, sometimes better than humans. This trend isn’t just cool tech—it’s transforming industries like healthcare, finance, and transportation by automating tasks and providing deep insights from data.

For regular folks, these trends mean better, faster, and more secure tech. Quantum computing could make our online transactions safer and help find cures for diseases more quickly. Conversely, AI makes our lives more convenient with personalized recommendations on Netflix or Spotify and more competent tech at home and work.

These trends fit perfectly with my career goals. AI is directly tied to what I aim to do in software engineering and data science, helping me build more intelligent systems. While a bit more specialized, Quantum computing represents a cutting-edge field I’d love to explore further.

So far, I've achieved many course outcomes, especially those related to designing and evaluating computing solutions. I still need to work more on strategies for collaborative environments and developing a security mindset, but I’m getting there.

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| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| **Name of Artifact Used** | 3D Graphics Project (CS330) | Animal Shelter Management System (CS340) | Family Tree Database (SQL Project) |
| **Status of Initial Enhancement** | Completed dynamic rotation and texture mapping | Animal Shelter Management System (CS340) | Family Tree Database (SQL Project) |
| **Submission Status** | Initial enhancement submitted for review | Initial enhancement submitted for review | Initial enhancement submitted for review |
| **Status of Final Enhancement** | Refining interactive controls and optimizing performance | Implementing interactive visualizations | Normalizing database schema and optimizing queries |
| **Uploaded to ePortfolio** | Not yet uploaded | Not yet uploaded | Not yet uploaded |
| **Status of Finalized ePortfolio** | Pending final enhancements | Pending final enhancements | Pending final enhancements |