Module 6 Journal

CS 499: Computer Science Capstone

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The two technologies I have seen the most recently have been Google’s Gemini 2.0 which is a family or AI programs that go from just chat bots to full on deep fake video generators. The other is new quantum computing chips which will make quantum computing more effective by allowing separated qubits to talk to each other. Googles Gemini is likely to upend a lot of what we do and know in coding with its ability to create code and assist coders by laying out frameworks. This could be positive for my future career if I learned how to use it appropriately but it also means that I will have to keep an eye out for AI code common issues in addition to the normal problems. The new quantum computing chip spells great benefits in the computing world but means that it must be considered when making code that deals with large datasets. It could also uproot all we know when it comes to data optimization as true quantum computing would make even the least optimized programs run at blazing speeds. In addition quantum computing puts a big wrench in our current security standards for encryption.

Beyond my career both of these technologies could benefit the world through faster solutions and more expansive options to tackle world problems. On the other hand, Gemini could be used to create fake videos to disrupt the world or be heavily influenced by bad data and then influence others through its many programs. Quantum computing could allow hackers to break through some of the toughest existing encryptions and thus leave entire industries open to attacks they were previously fortified against.

At this point I have employed strategies for building a collaborative environment, designed and developed professional communications about my code, demonstrated my ability to use well-founded techniques to solve industry-specific goals, and developed a security mindset when designing the software to help prevent software attacks or bugs.

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| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| **Name of Artifact Used** | CS 340 | CS 340 | CS 340 |
| **Status of Initial Enhancement** | Partial. Started conversion but didn’t not finish complete functionality. | Changed plan to utilize an algorithm to create faster filtering in a live search function for breeds. | Started API integration. Got calls to work but being blocked so more work needed. Seeded database successfully with real rescues data. |
| **Submission Status** | Second submission | Delayed | Second submission |
| **Status of Final Enhancement** | Could not get Piechart to work. Enhanced and finished table. Added geolocation based on animal selected. Added filters for specific rescue types. |  | Added full CRUD operations as well as a secure login and registration options. Enhanced data efficiency in the process by having database only pulled when data is modified in the database. |
| **Uploaded to ePortfolio** |  |  |  |
| **Status of Finalized ePortfolio** |  |  |  |

**Status Checkpoints for All Categories**