**Samuel Rincon**

**CS 499 Journal 5**

Artificial intelligence is reshaping industries everywhere. It automates complex tasks and analyzes data for better decision-making. In healthcare, AI helps diagnose diseases faster. In finance, it detects fraud. Developers now have to integrate AI models in applications. I have worked on backend development, and I see how much AI depends on optimized data pipelines. This fits my interest in database management. AI will bring more personalized services to consumers. Workers will use it to automate repetitive tasks. Businesses can make better predictions. I plan to learn more about AI frameworks since it could open new opportunities in my career.

Cloud computing has changed how we use technology. Companies no longer need to maintain their own servers. They can rent resources from cloud providers like AWS. Cloud platforms scale easily and support new technologies like containerization and microservices. This trend makes global teamwork possible with remote access tools. Consumers benefit from constant access to digital services. In backend development, I have already worked with scalable databases, and I see how the cloud could enhance performance. I am looking into certifications for cloud platforms because these skills are highly valued.

I have made progress with data structures, algorithms, and backend development. I need to improve security practices and learn more about integrating cloud and AI technologies.

**Status Checkpoints for All Categories**

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| --- | --- | --- | --- |
| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| Name of Artifact Used | E-commerce web application | Binary Search Tree Implementation | Animal Shelter Management Dashboard |
| Status of Initial Enhancement | Completed authentication and error handling | Optimized traversal algorithms, added balanced tree functionality | Enhanced CRUD operations, added logging, optimized queries, updated Dash callbacks |
| Submission Status | Submitted for review | Submitted for review | Submitted for review |
| Status of Final Enhancement | Pending revisions | Pending feedback | Completed for Milestone 4 |
| Uploaded to ePortfolio | Pending upload | Pending upload | Pending upload |
| Status of Finalized ePortfolio | Pending completion | Pending completion | Pending completion |