Mihir Patel

CS 499

Prof. Sherin Aly

August 4, 2025

Two trends in computer science that I find particularly impactful are Artificial Intelligence (AI) and Edge Computing. AI is transforming how organizations make decisions—especially in areas like predictive analytics and automation. It's significant because it's not just about machines making predictions but helping businesses improve efficiency and personalization. Edge computing, on the other hand, is all about processing data closer to where it’s generated. That reduces latency and is essential for real-time applications like IoT and smart devices.

These trends are important to me because they align well with my long-term career goal in data science and analytics. I’ve already worked on customer churn analysis using Python and Snowflake, and I can see how incorporating machine learning would take that further. I’ve thought about pursuing certifications in AI/ML after this program to build on what I’ve learned. So far, I’ve met course outcomes related to software engineering and databases. I still plan to improve my skills in algorithm optimization and model building.

|  |  |  |  |
| --- | --- | --- | --- |
| Checkpoint | Software Design and Engineering | Algorithms and Data Structures | Databases |
| Name of Artifact Used | churn\_etl\_pipeline.py- Python-based ETL from AWS S3 | churn\_feature\_engineering.py- (feature logic and scoring) | CustomerChurn.sql -  snowflake view |
| Status of Initial Enhancement | Complete – used environment variables, added logging, refactored functions | Done – created tenure buckets, flag logic, and scoring | Tables created and loaded, view built using joins and filters |
| Submission Status | Submitted as part of Milestone Two | submitted | submitted |
| Status of Final Enhancement | Working on adding optional CLI inputs and failure logging | Considering additional risk scoring logic | Finalizing SQL optimization and documenting table design |
| Uploaded to ePortfolio | Yes – draft version uploaded | Yes – uploaded as draft | Yes – uploaded as draft |
| Status of Finalized ePortfolio | In progress – narrative and documentation being polished | Will add performance considerations in final version | Almost ready – final screenshots and query examples being added |