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Reflective Journal – Module 03: Machine Learning Workflow

Understanding and Breakthroughs

At first, the machine learning workflow seemed complicated because there were so many steps — data collection, cleaning, training, testing, and evaluating. But after running the notebook cell by cell, I started to see how each stage builds on the last.
The moment it clicked for me was when I saw how changing the model or scaling the data changed the performance results. That helped me understand that machine learning isn't just coding — it's about improving accuracy through testing and learning from mistakes. While inputting data I found myself changing numbers and rerunning the code to see the change. Of course, I got errors but I was enjoying the process

Challenges and Problem-Solving

One of the hardest parts was understanding data splitting and why we need training and testing sets. I originally thought all data could be used to train, but then I saw how that caused overfitting. I learned to trust the metrics and double-check confusion matrices to see how well the model was really performing. When I got errors in Colab, I took time to read them carefully instead of guessing — this helped me learn more about debugging and Python syntax.

Connections to What I Knew Before

Before this lab, I only thought machine learning was about predictions. Now I realize it's a lot like problem solving — you have to plan, test, and analyze results just like in real-world projects. The marketing example made it easier to understand because I could connect it to how companies use data to make better decisions and reach the right customers.

Questions and Curiosity

I'm still curious about how models improve when given new data over time, and how advanced models like neural networks differ from the simple ones we used. I also wonder how companies make sure their models are fair and unbiased when they use customer data.

Changes in My Thinking

I used to think machine learning was mostly math and coding, but now I see it as a creative process too. Each step requires you to think critically, test ideas, and make smart choices about what to try next.