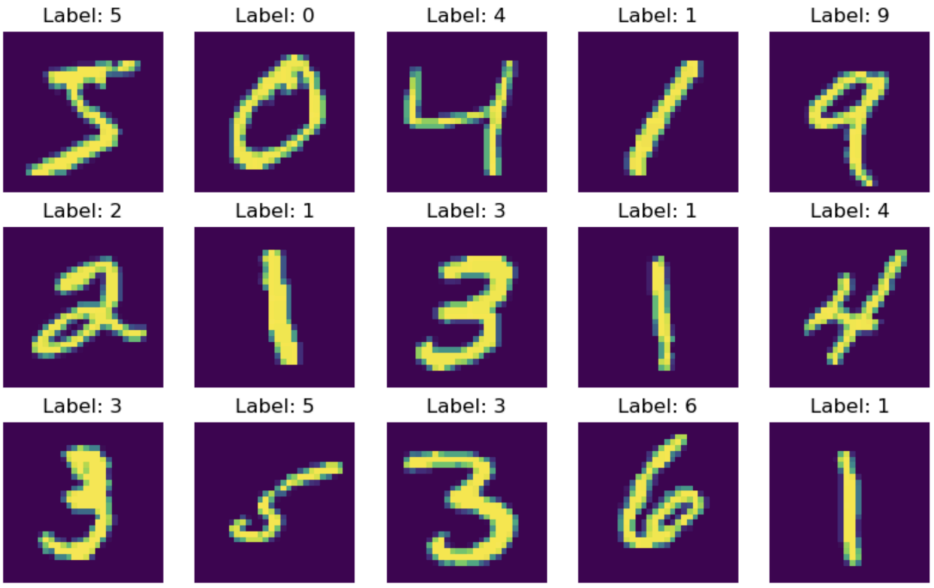
Mission Brief: Can You Train a Machine to Read?

A DS 4002 Case Study by Emily McMahon



Imagine you're working at a leading tech company tasked with building a system that can instantly read handwritten digits from checks, envelopes, or even scanned homework. Your team is under pressure to deliver something fast, accurate, and efficient because every second saved at scale is worth millions.

You've been given access to thousands of labeled handwriting samples, and it's your job to decide which type of machine learning model will form the core of your solution. Will you lean into the simplicity of classical models like Random Forest or LDA, or harness the power of deep learning with Neural Networks and CNNs?

This isn't just academic theory, it's a practical challenge at the intersection of human behavior and machine intelligence. You're in total control. The decisions you make—what models to try, how to evaluate success—will determine how well your system performs in the real world.

Your goal is to design and test a solution that can classify handwritten digits with a high degree of accuracy using the tools of modern data science. You'll compare different approaches, weigh trade-offs, and ultimately deliver a set of results that reveal which model performs best.