Tanyag Johann Francois | **BSCS3B** | **Mr. Mark**

"My First End-to-End ML Experience"

Implementing the end-to-end Machine Learning (ML) Pipeline has given me valuable insight into how Artificial Intelligence (AI) truly works. In today's generation, AI has become deeply integrated into our daily lives, powering many tools and services we use every day. Most companies now rely on AI to enhance productivity and efficiency, making it an essential skill to understand in the field of Computer Science. Through this activity, I gained a clearer understanding of how AI systems are created and how they function, allowing me to keep up with the evolving trends in the tech industry.

By developing the End-to-End ML Pipeline, I experienced firsthand how AI models are built from start to finish. I learned about the five key stages of the Machine Learning Pipeline: Data Collection, Preprocessing, Training, Evaluation, and Deployment. Each stage plays a crucial role in ensuring the development of a reliable and accurate model. These phases guide developers to carefully plan, analyze, and test their systems, ensuring that every part of the process is properly executed for optimal results.

During the activity, one of the main challenges I encountered was dealing with the issue of overfitting. This occurs when a model performs well on training data but fails to generalize on new, unseen data. To address this, I ensured that my training data was clean, relevant, and sufficient for the model to learn effectively. This process taught me the importance of proper data handling and balanced training in producing a robust and dependable AI system.

A practical example where I could apply a similar ML pipeline is in creating a model for renting college dorms. As a student, I've seen many peers searching for affordable dorm options close to campus. By using an ML model that analyzes factors such as location, population, age of the building, and room quality, I could help students find dorms that best suit their needs and preferences.

In conclusion, implementing the End-to-End Machine Learning Pipeline has been a meaningful and eye-opening experience. It not only deepened my understanding of how AI models are developed but also strengthened my skills as a future computer scientist. This activity inspired me to explore more applications of AI and machine learning, as I now realize their potential to solve real-world problems and make technology more intelligent and impactful.