**Jay Jajoo**

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Dear Hiring Manager,

I am excited to apply for the Data Engineer Intern position at Murphy USA. With a strong academic background in Data Science from Northeastern University and hands-on experience in data processing, machine learning, and cloud technologies, I am eager to contribute to your innovative team. The opportunity to work with cutting-edge Big Data technologies like Databricks on Microsoft Azure aligns perfectly with my aspirations to enhance my technical skills and support impactful data-driven solutions in a dynamic retail environment.

My experience as a Data Science Intern involved developing robust ETL pipelines, conducting exploratory data analysis, and building machine learning models with Python and PyTorch. Notably, I designed a neural network to predict customer conversions with an F1 score of 0.89. Additionally, I have worked on projects like anomaly detection using LSTM Autoencoders, achieving minimal reconstruction errors, and object detection with YOLOv8 for real-time perception. My proficiency with SQL, cloud services like AWS, and data frameworks such as PySpark, combined with my academic coursework in data management, algorithms, and machine learning, make me well-equipped to support Murphy USA's data infrastructure.

Currently, I am working on a project involving the development of an anomaly detection system for home security data using LSTM Autoencoders. This project involves data cleaning, feature extraction, and model evaluation to identify unusual activity with high accuracy. The skills I am honing—such as handling large datasets, deploying models in cloud environments, and optimizing performance—are directly applicable to the data pipeline development and system automation tasks at Murphy USA. My experience with cloud platforms like AWS and my ongoing research into scalable data solutions will enable me to contribute effectively to your team’s goals.

Thank you for considering my application. I am enthusiastic about the opportunity to bring my technical expertise, problem-solving skills, and passion for data engineering to Murphy USA. I look forward to the possibility of discussing how I can contribute to your team’s success and support your company's growth initiatives.

Best regards,

Jay Jajoo