Capstone Report: Dynamic Parking Pricing

This project implements a real-time dynamic pricing engine for 14 parking spaces based on historical and real-time features. We used Python, Pandas, Numpy, and the Pathway streaming framework.

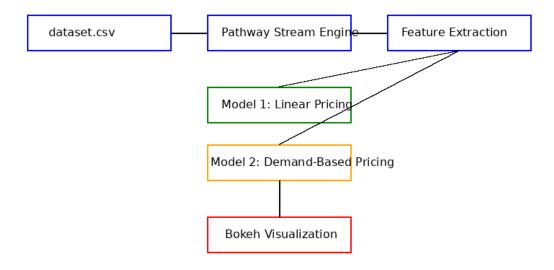
Models Implemented

- 1. Model 1: Linear Pricing price increases linearly with occupancy ratio.
- 2. Model 2: Demand-Based Pricing considers occupancy, queue length, traffic, special day, and vehicle type.

Architecture Overview

The system uses Pathway to stream data row-by-row, simulates real-time processing, applies custom pricing logic, and visualizes results using Bokeh in Panel.

Dynamic Parking Pricing Architecture



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