MICHIGAN STATE UNIVERSITY

Alpha Presentation

Optimizing OEM Parts Sales Through AI Analytics

The Capstone Experience

Team Urban Science

Carlos Gutierrez
Sahana Balaji
Bhavya Mrinal
Aayush Keshan
Raghul Kannan
Noah Zemba

Department of Computer Science and Engineering
Michigan State University

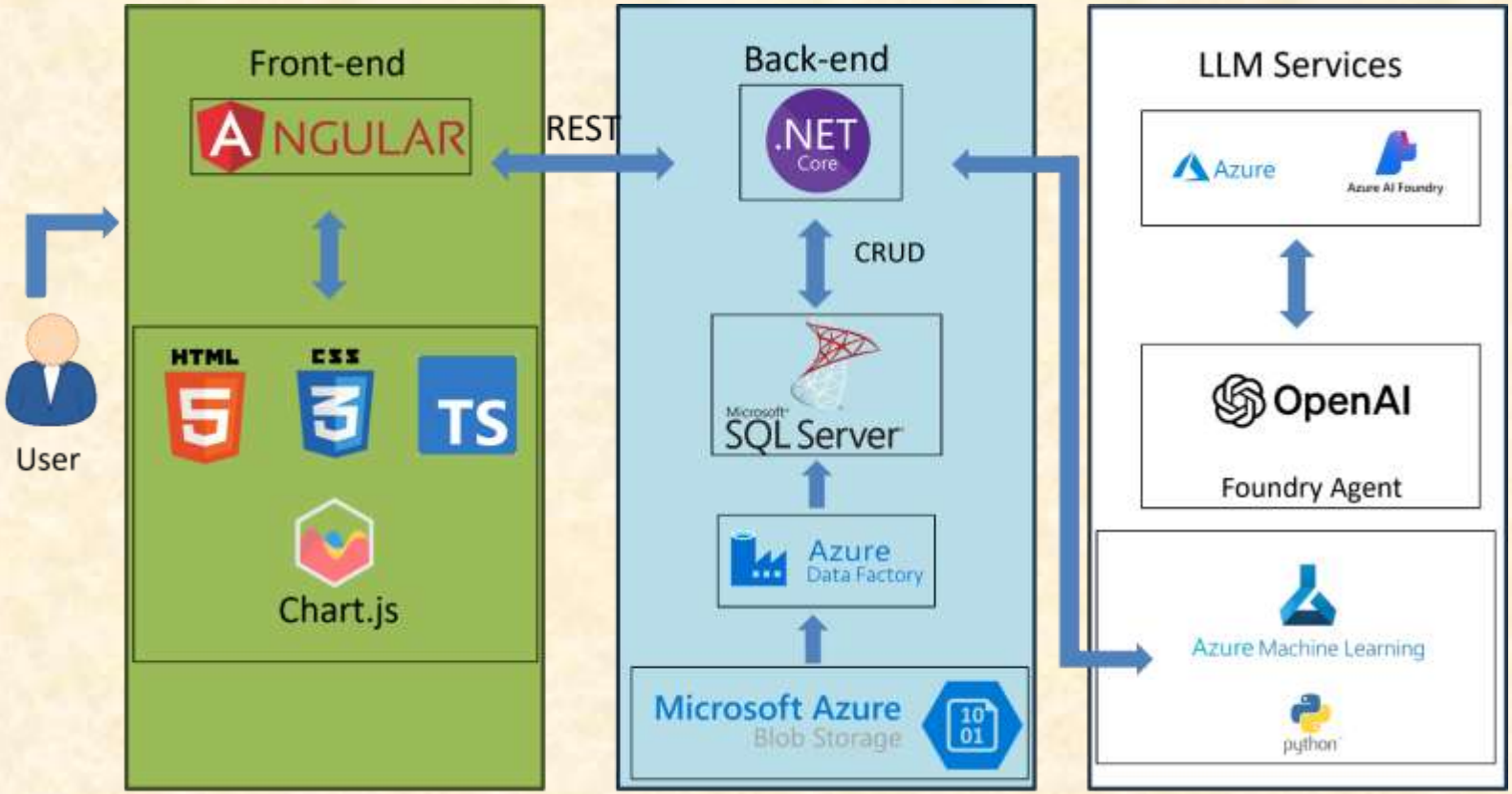
Spring 2026

From Students…
…to Professionals

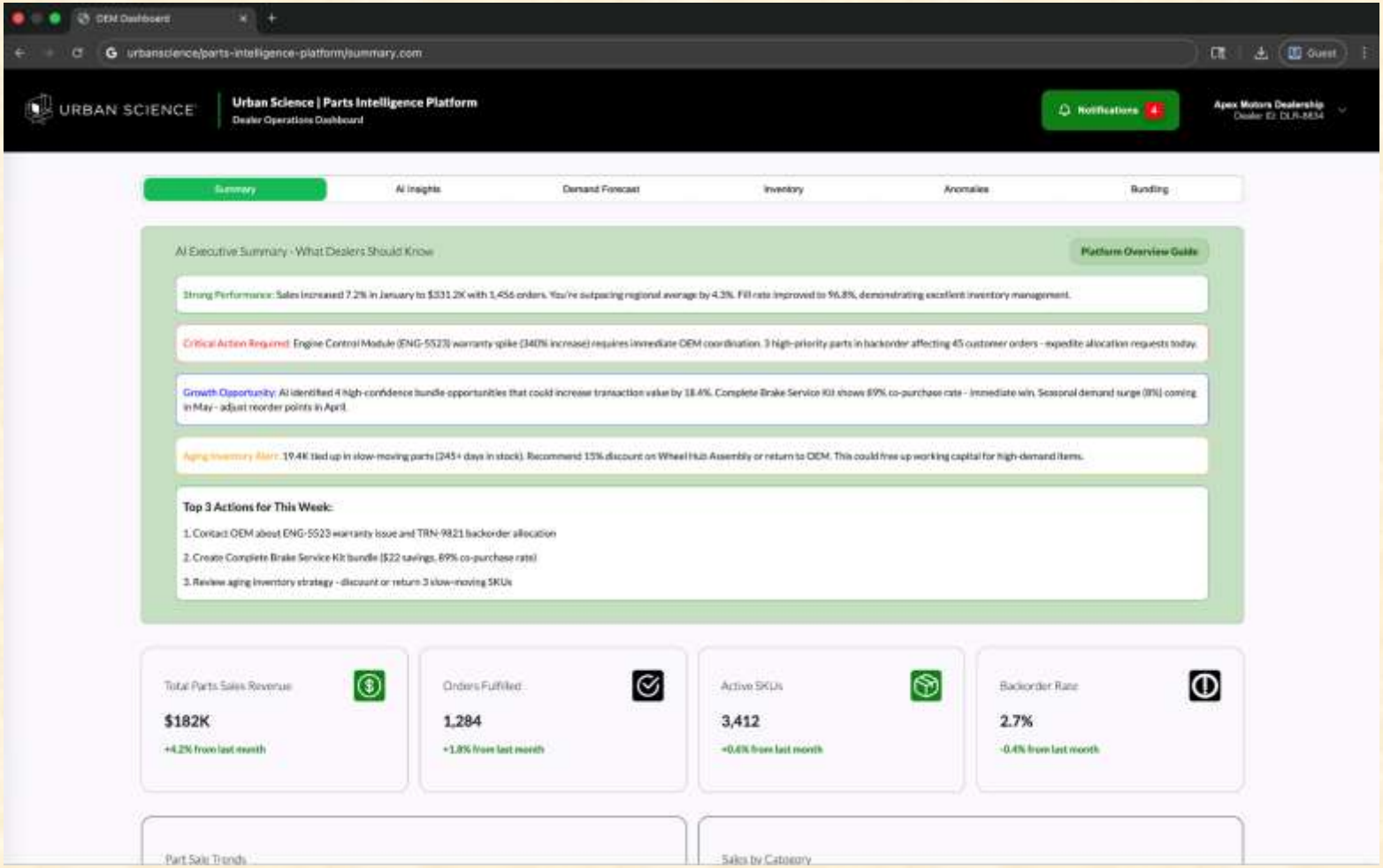
Project Overview

- Organizes data to help OEM and dealer parts teams identify trends, demand shifts, and performance patterns over time
- Uses historical dealer data to forecast both bundle and individual part demand
- Creates and displays AI-driven insights through an interactive web-based dashboard
- Improves dealer decision making speed and effectiveness by providing action items

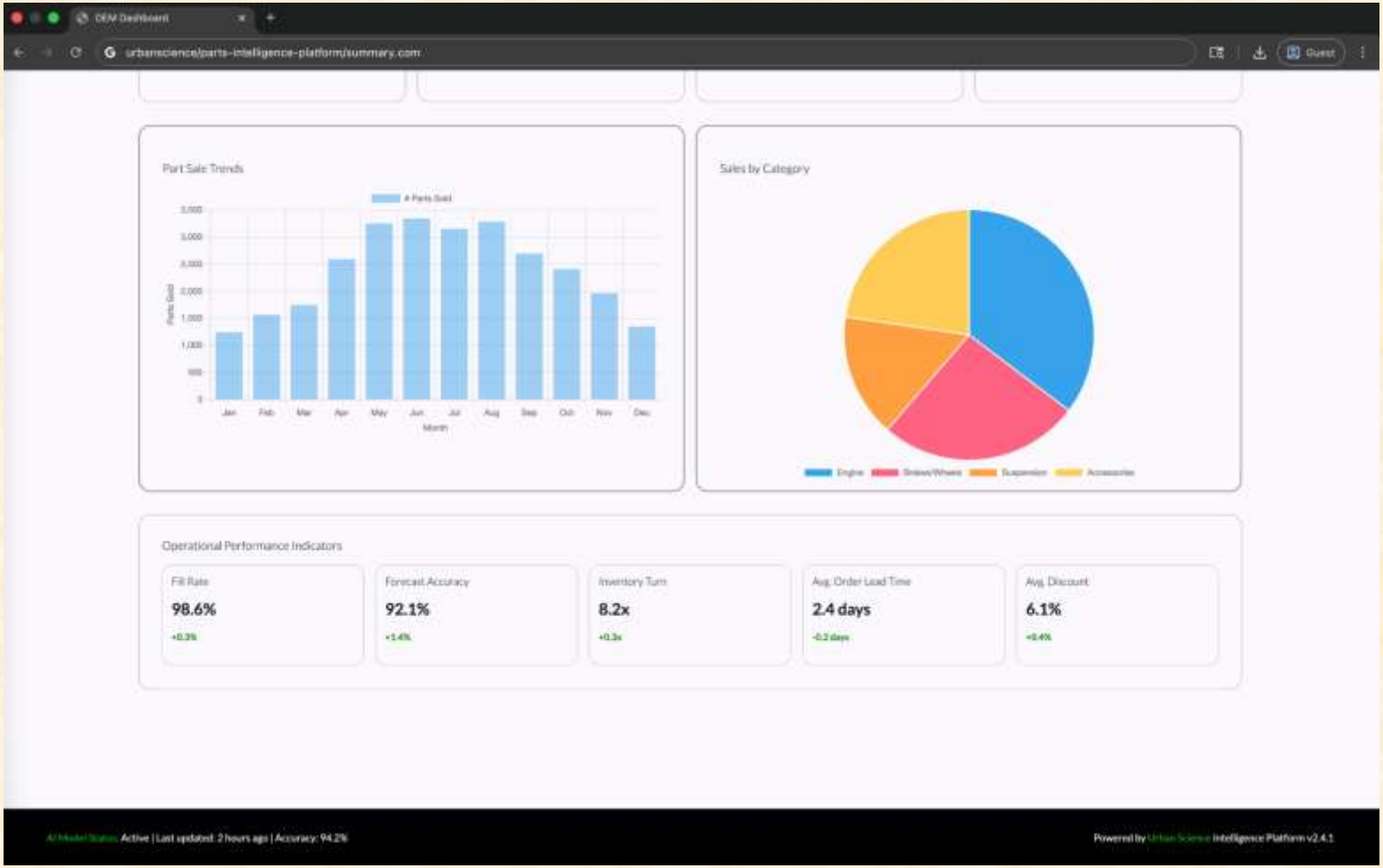
System Architecture



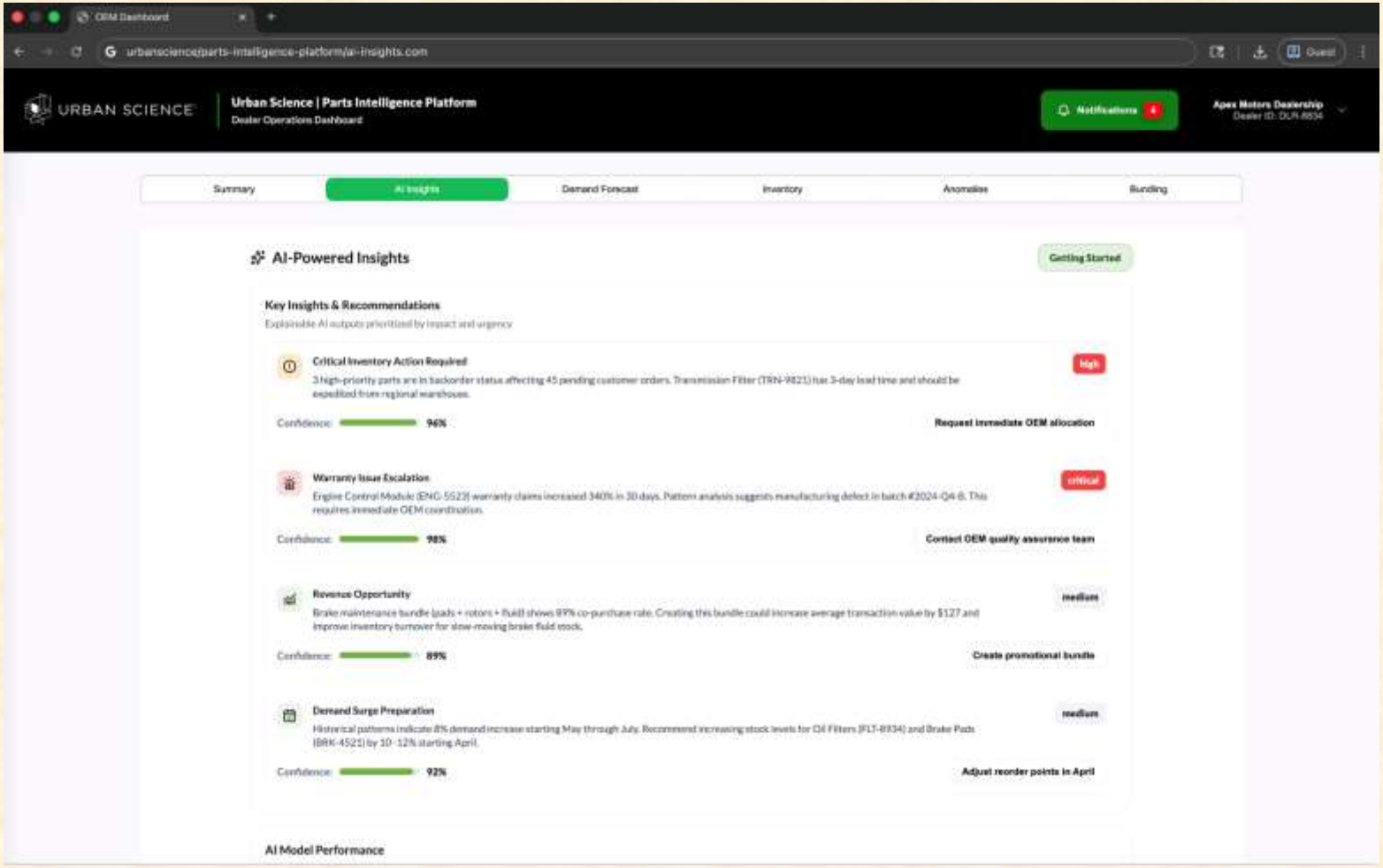
Summary Page



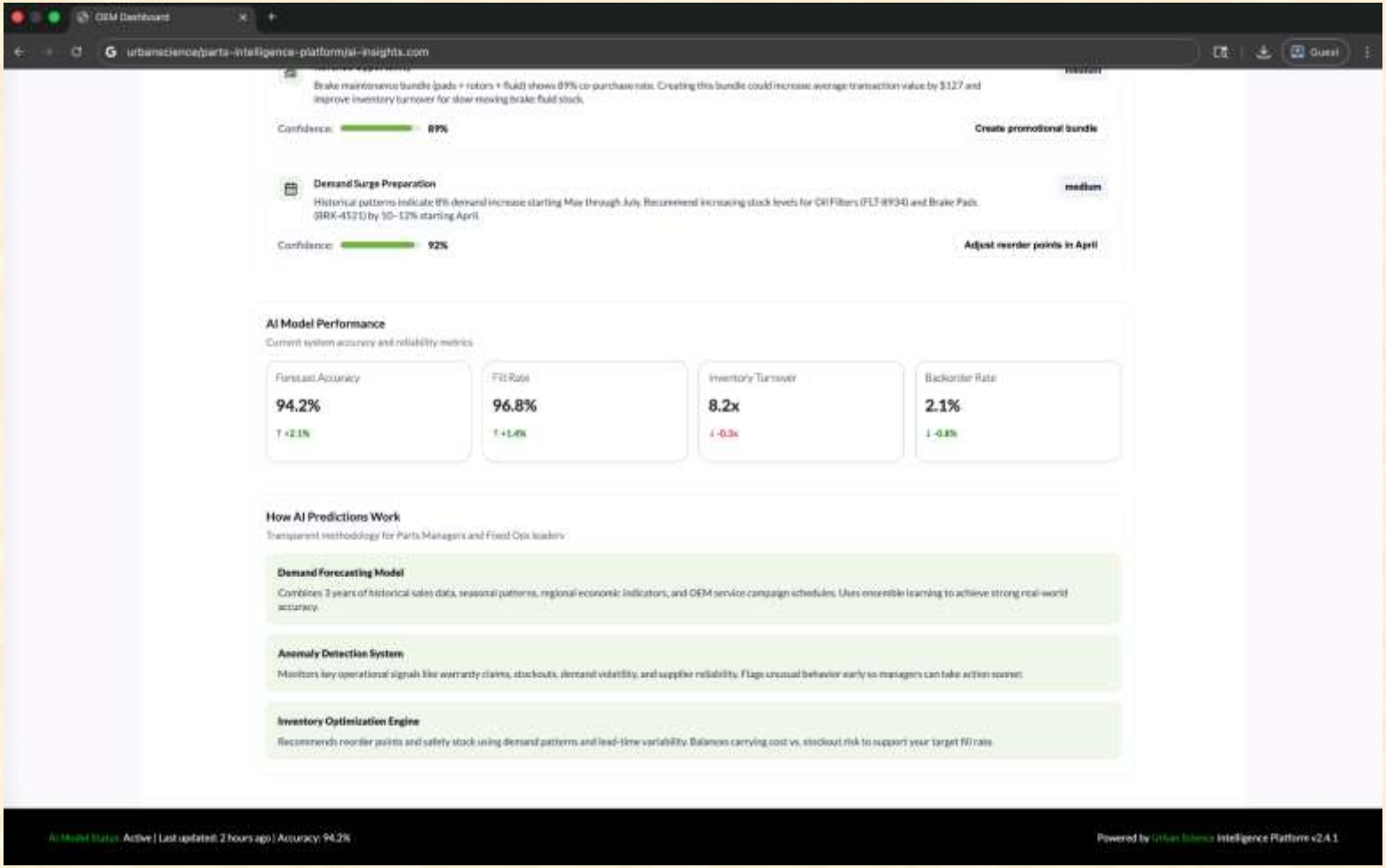
Summary Page Continued



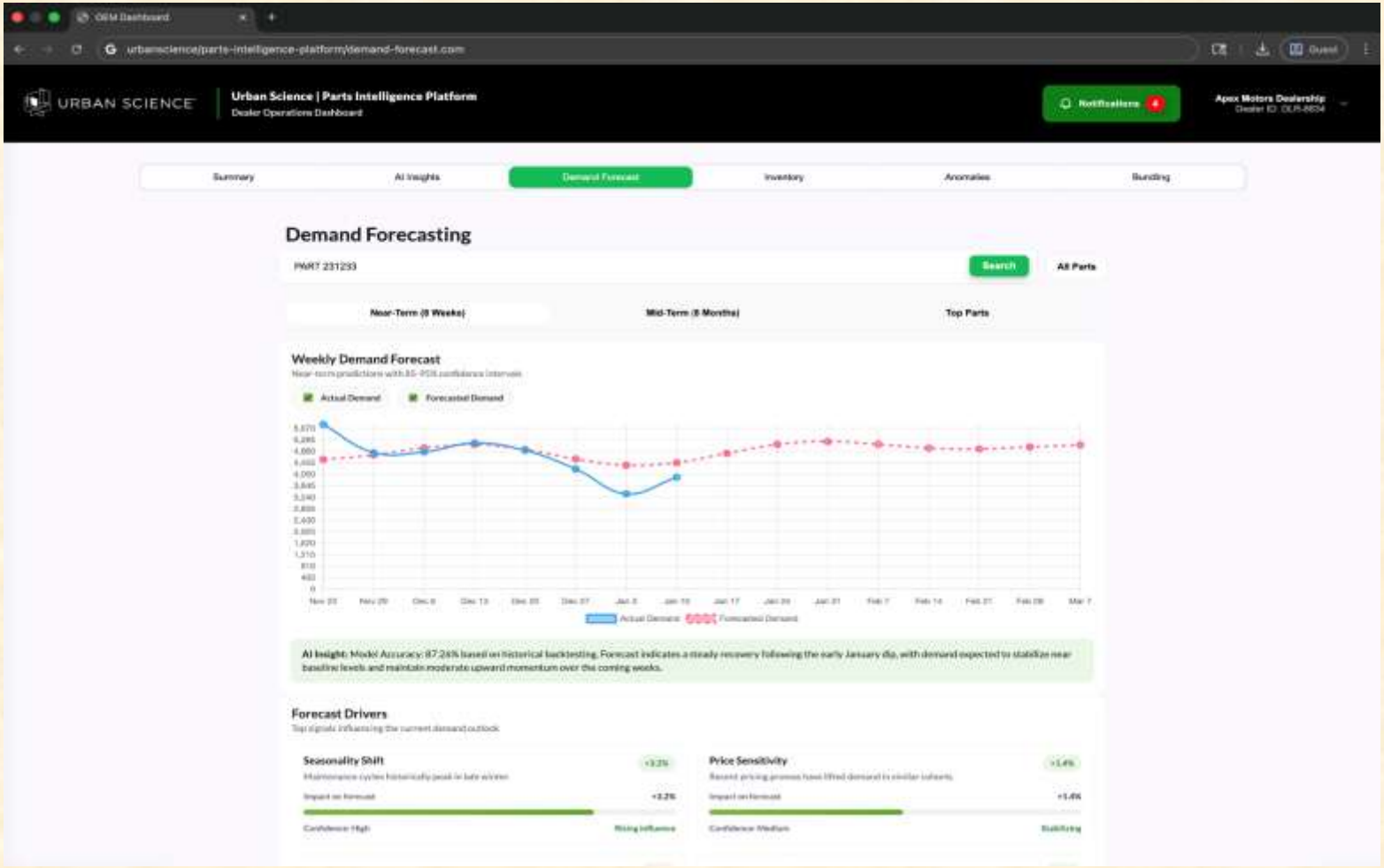
AI Insights Page



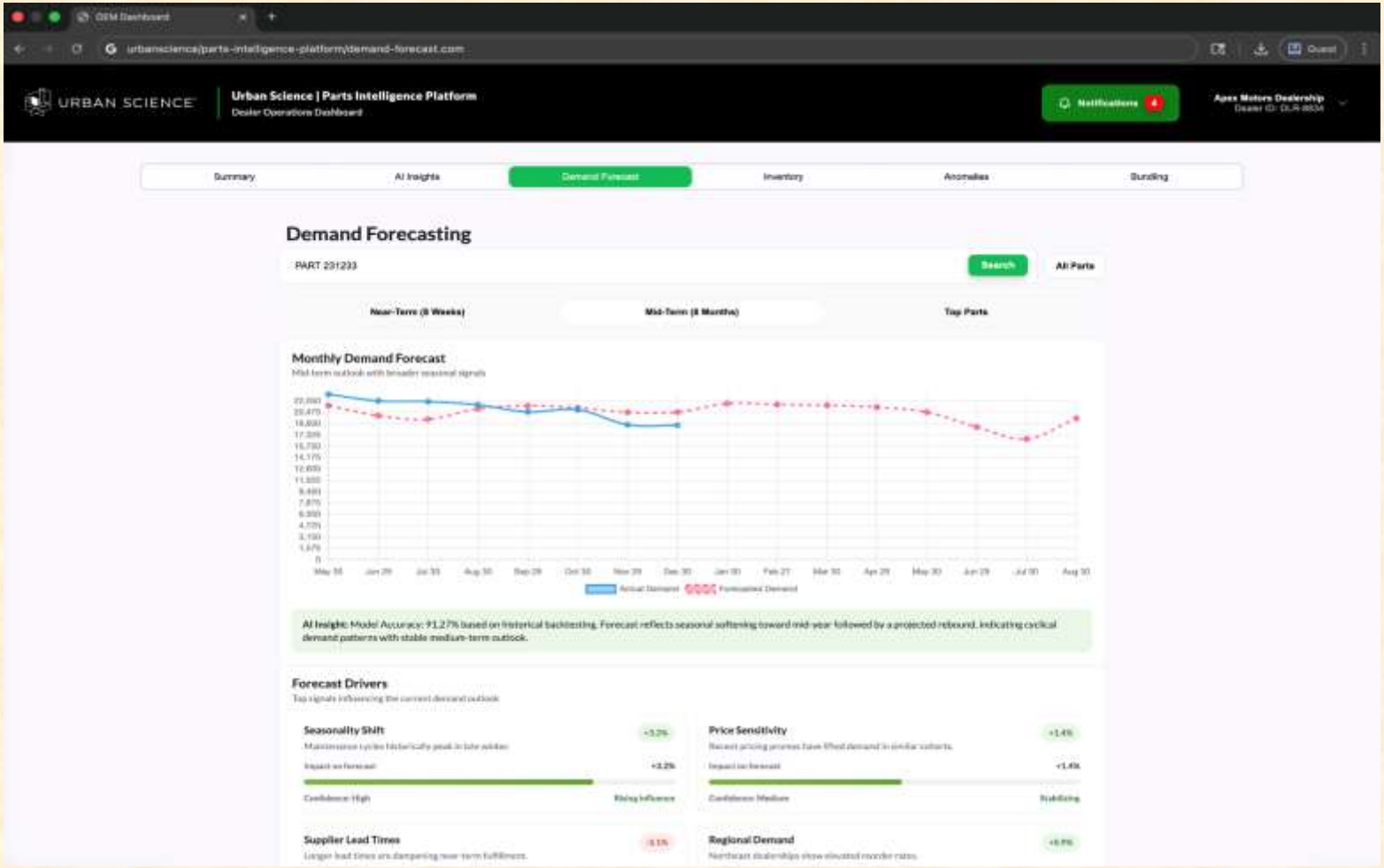
AI Insights Page Continued



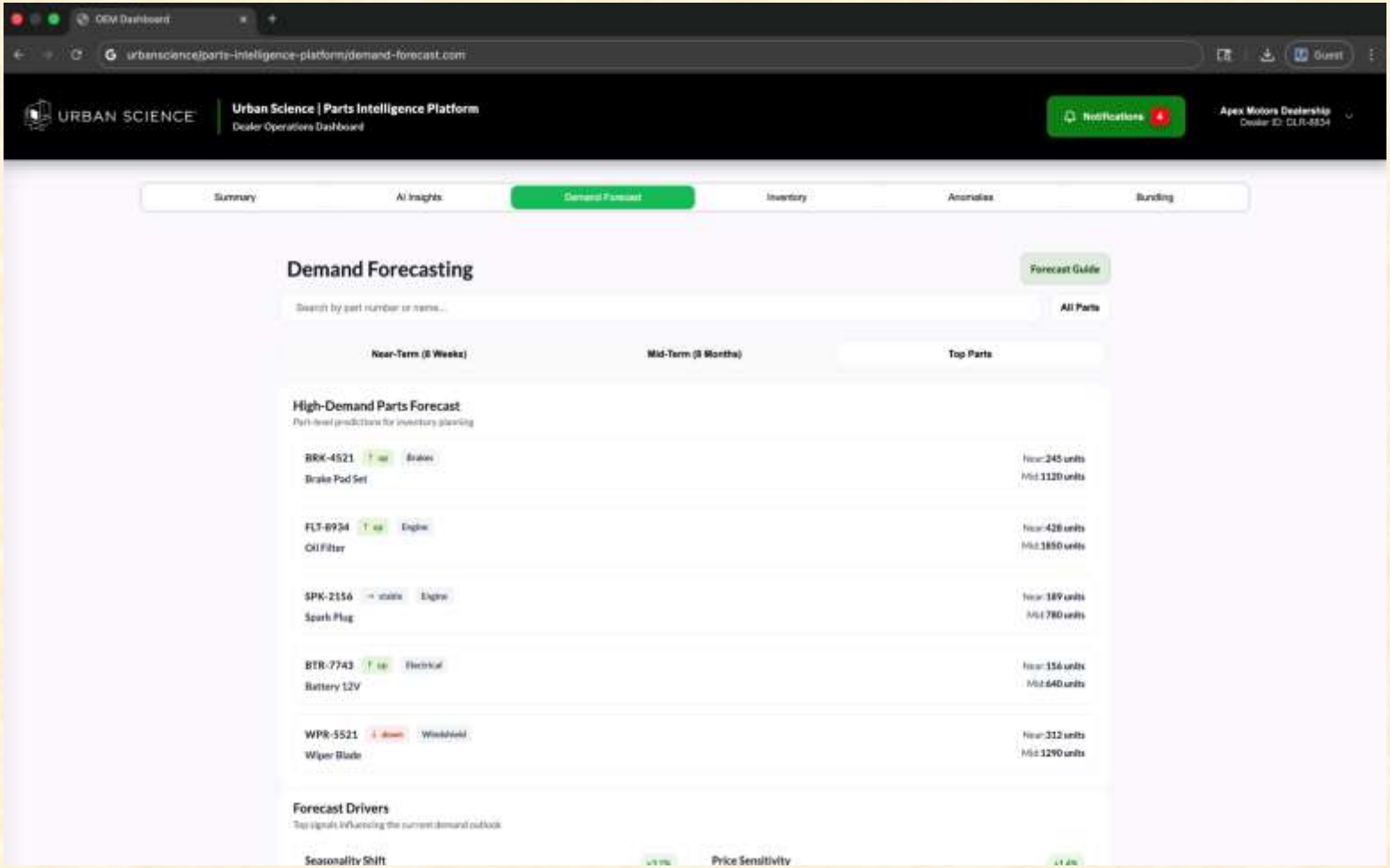
Near-Term Demand Forecast Page



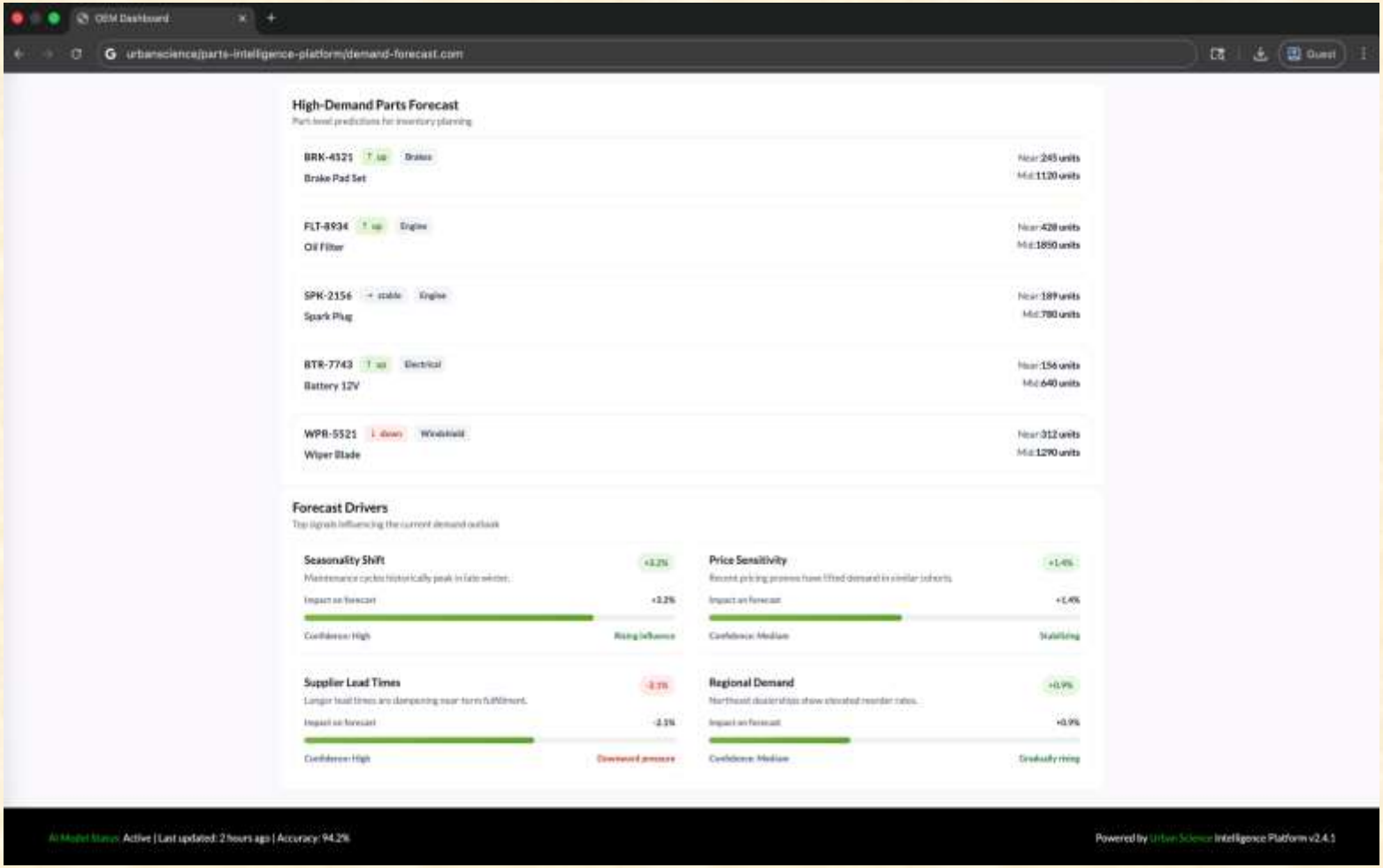
Mid-Term Demand Forecast Page



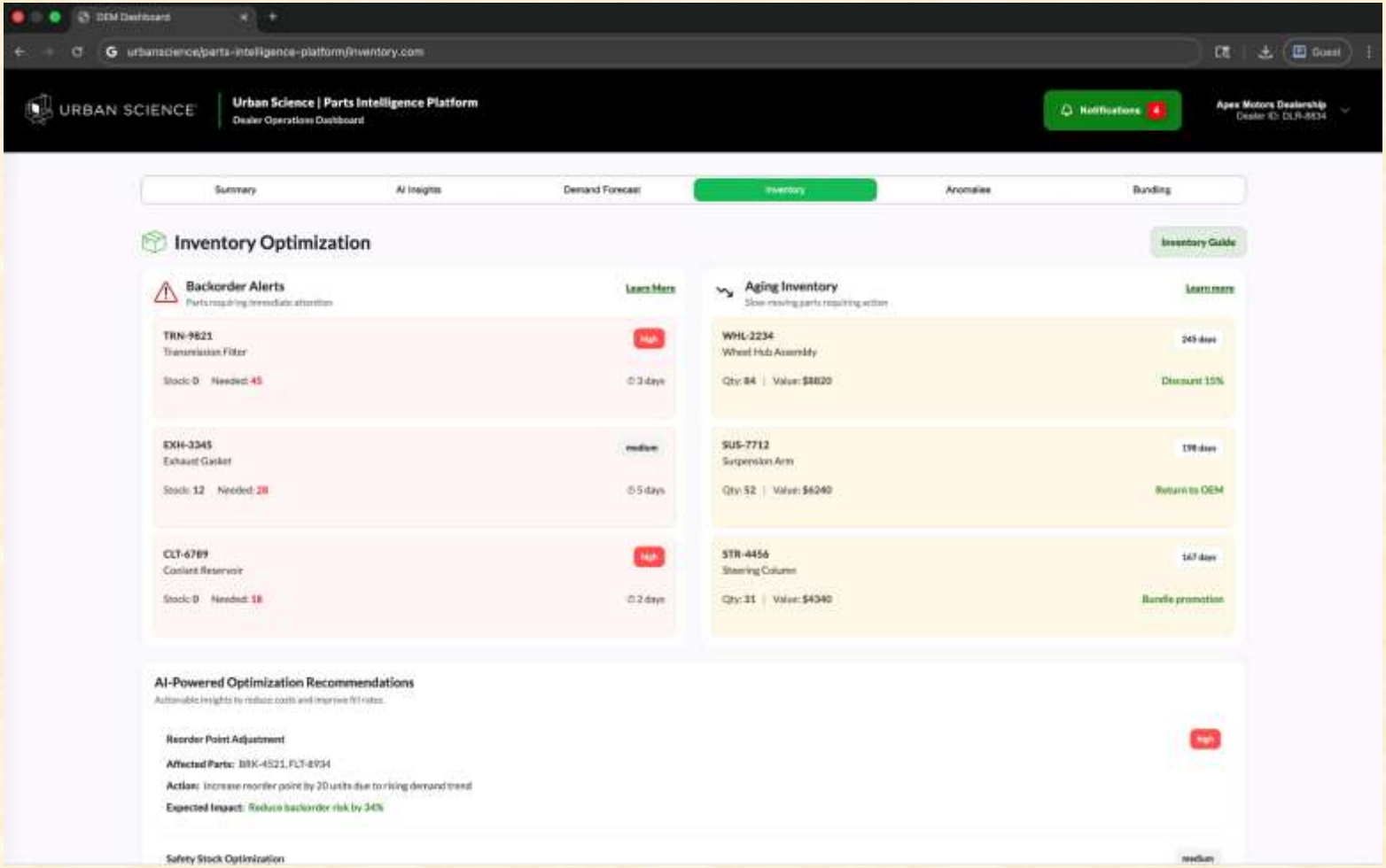
Top Parts Demand Forecast Page



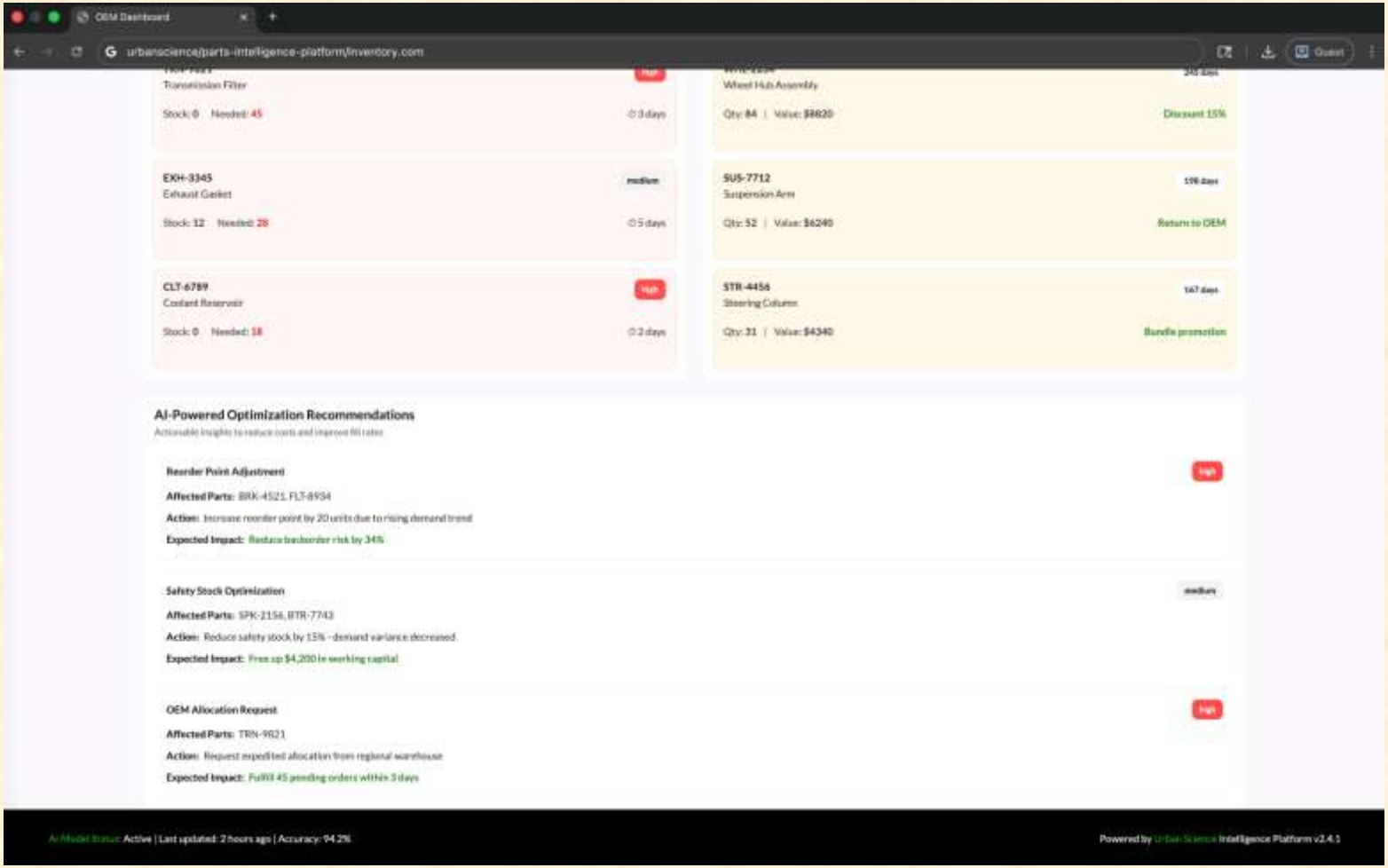
Demand Forecast Drivers



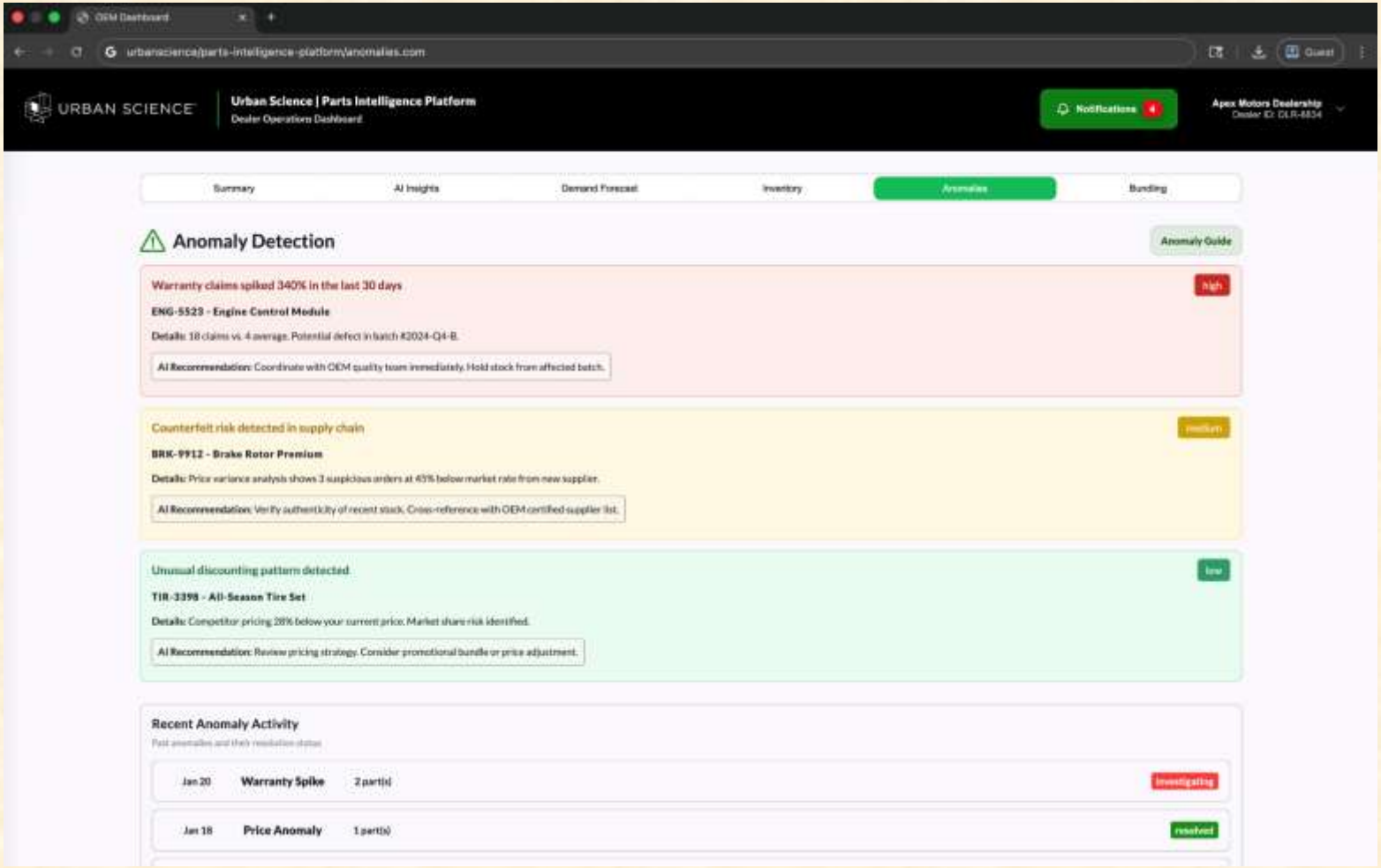
Inventory Page



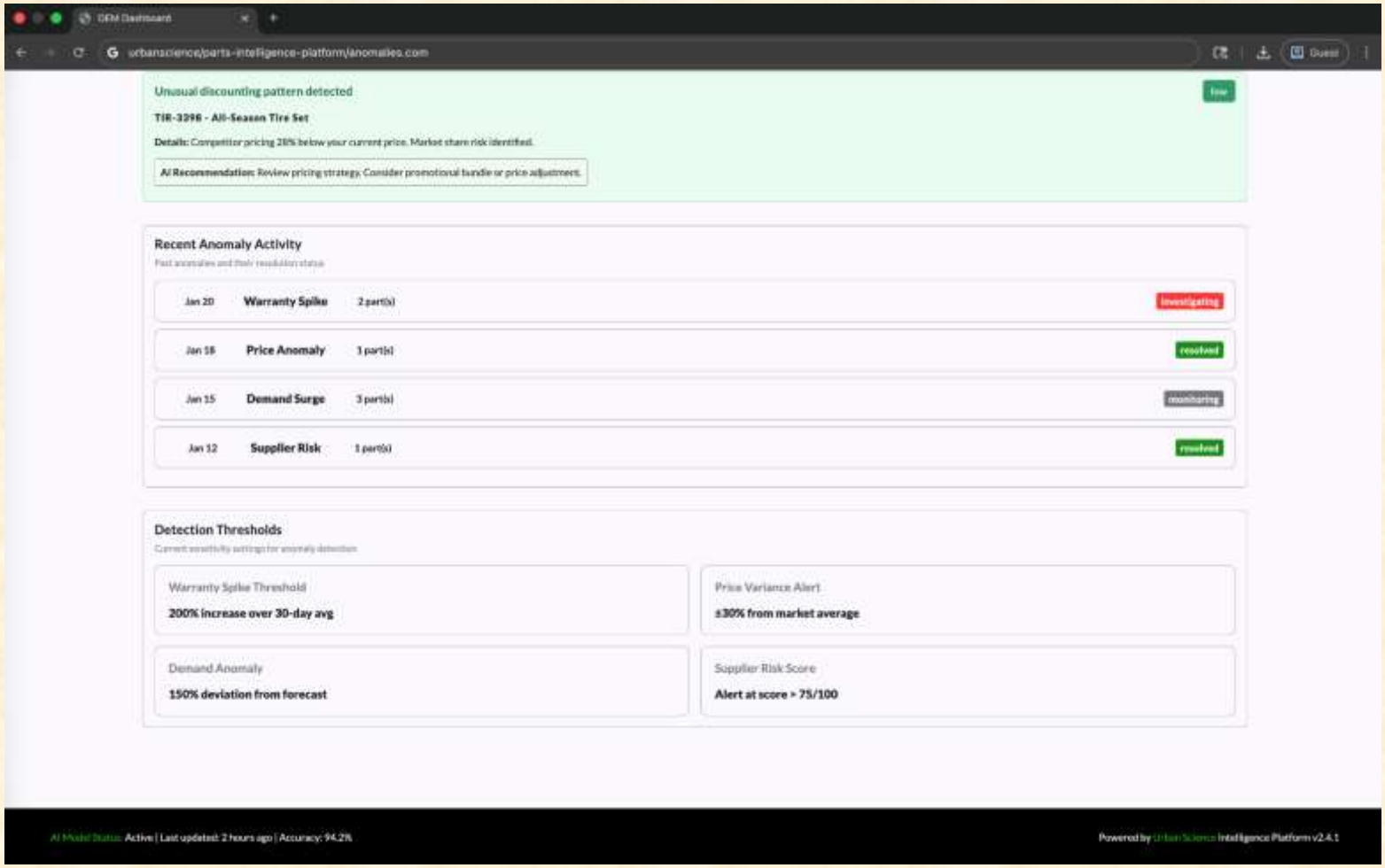
Inventory Page Continued



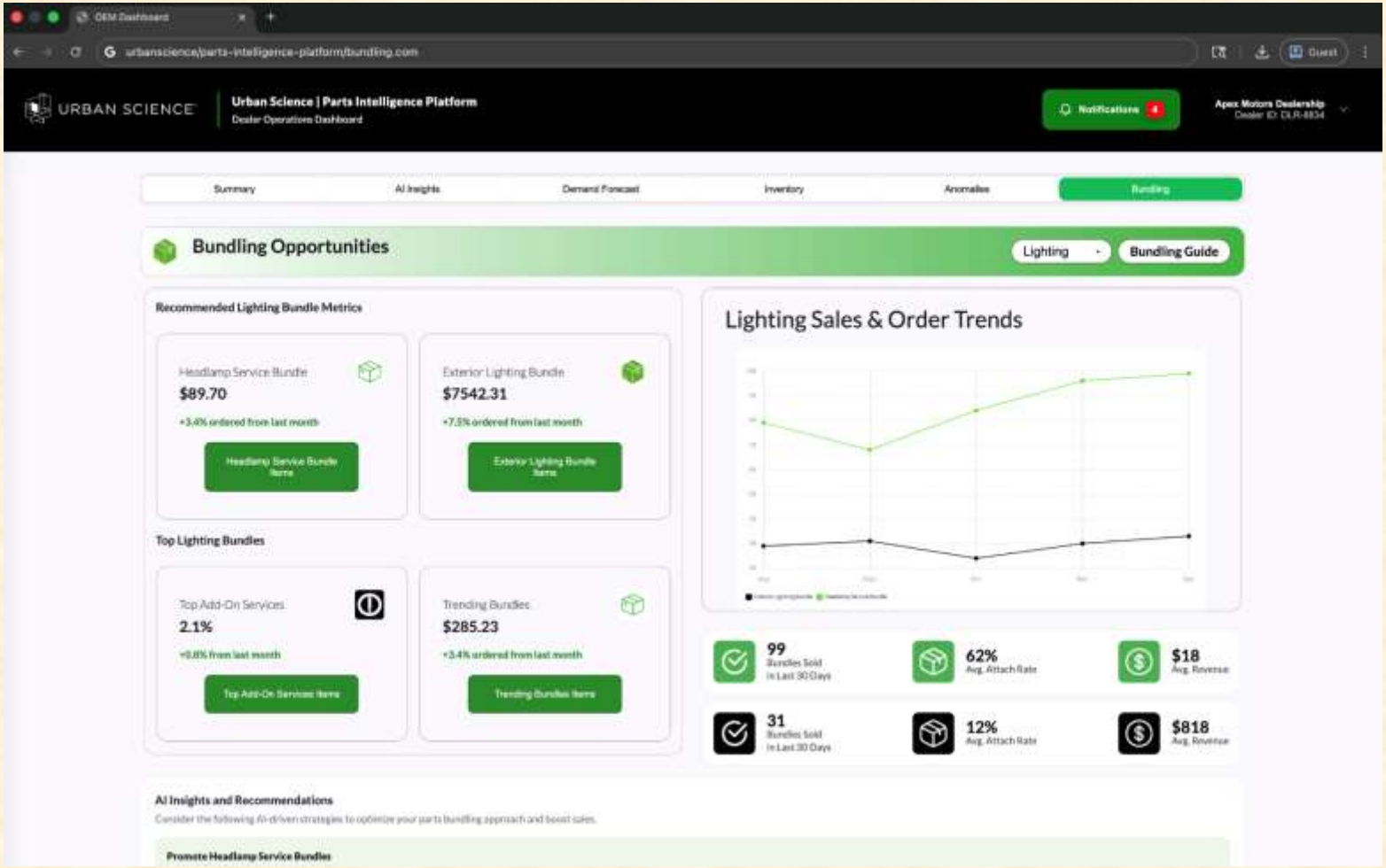
Anomalies Page



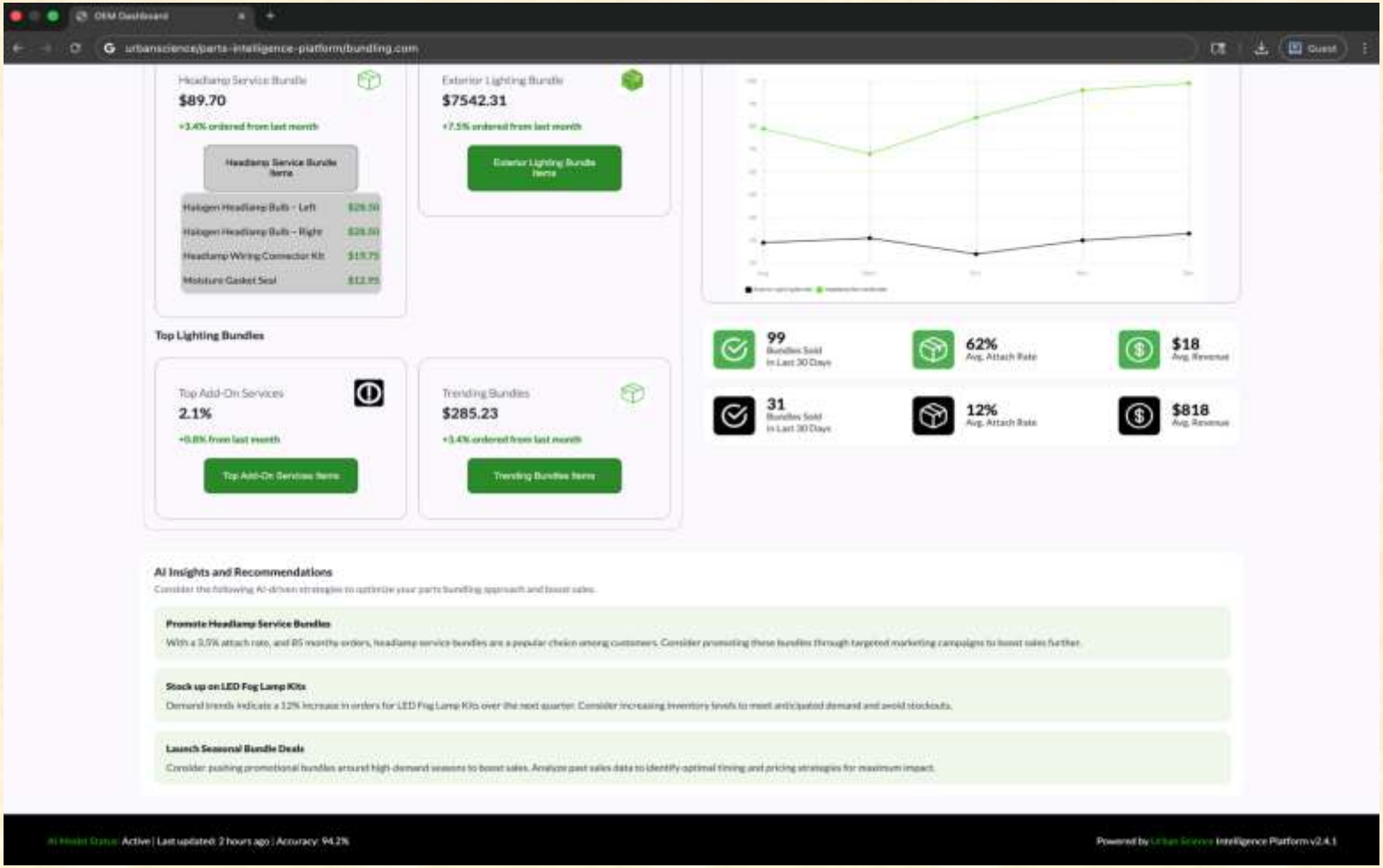
Anomalies Page Continued



Bundling Page



Bundling Page Continued



What's left to do?

- Develop specialized AI agent configurations for different functions
- Implement role-based authentication for dealers and OEMs
- Deploy a separate OEM interface
- Identify more advanced operational and predictive performance metrics
- Improve model precision through additional training data and validation

Questions?

