

# **StorePulse**

Demand Forecasting Automation Platform using NB-INGARCH Models

MTech Technical Presentation - Complete System Architecture

# Academic Contributions

## 1. Model Innovation

First production implementation of NB-INGARCH for retail demand forecasting with full uncertainty quantification

## 2. Feature Engineering

Novel 21-feature set combining temporal, autoregressive, and volatility indicators optimized for count data

## 3. Quality Gates

Automated validation framework ensuring models beat baselines before deployment

## 4. Desktop Deployment

Zero-cloud architecture using Tauri for local-first predictive analytics

**Project Status:** Production-ready system with verified ML pipeline, comprehensive testing, and full documentation. All code is open-source and metrics are reproducible.

**StorePulse - Demand Forecasting Automation Platform**

MTech Project | NB-INGARCH Implementation | Verified Metrics

All diagrams, metrics, and architecture details are based on actual implementation