Project Overview & Key Findings

A

📊 ODA & Trade Correlation: Strong statistical relationships found between ODA outstanding and trade volume.
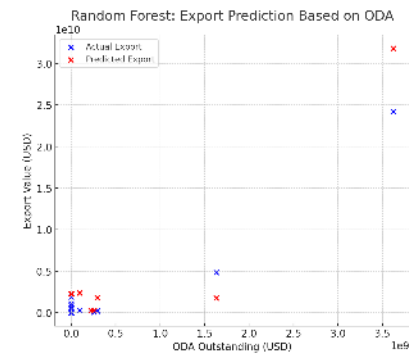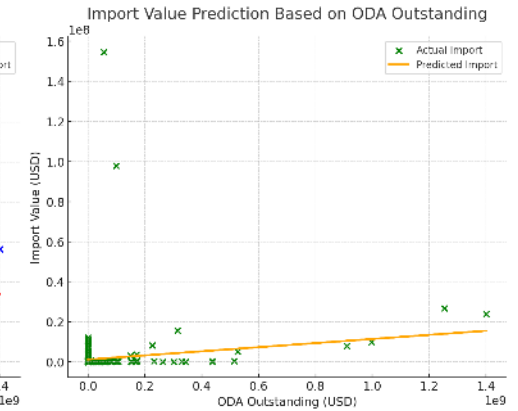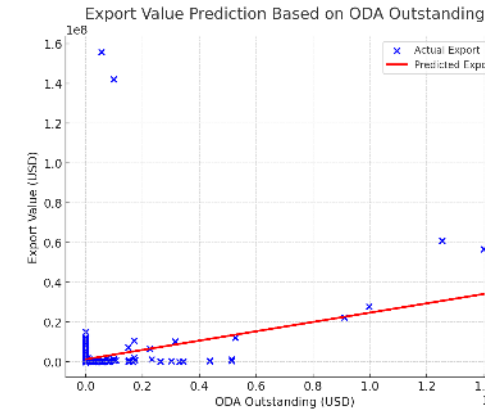🌍 Geopolitical Trade Impact: South Korea's ODA policies are aligned with key trading partners.

B

🤖 Predictive Analysis: Machine Learning models (Random Forest, Linear Regression) effectively predict trade flows based on ODA data.

C

🔥 ODA-Tied Trade Growth: Higher ODA disbursements often lead to increased bilateral trade with South Korea. Export volume shows higher correlation than import volume

Correlation Analysis between Trade and ODA

Export Value Prediction Based on ODA Outstanding

Import Value Prediction Based on ODA Outstanding

Random Forest: Export Prediction Based on ODA

Random Forest: Import Prediction Based on ODA

Random Forest: ODA Prediction Based on Trade
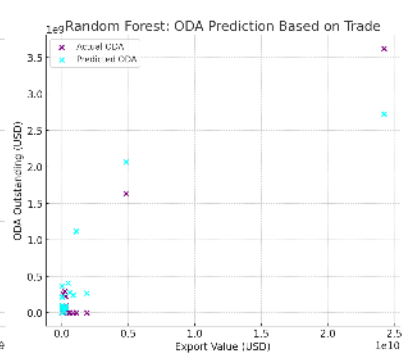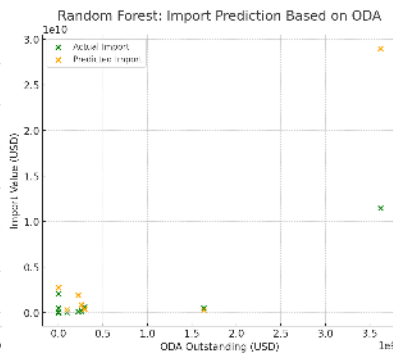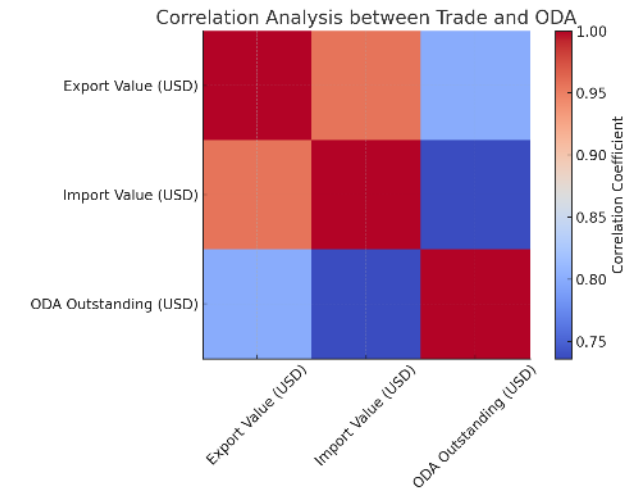
01 🚀 Future Possibilities

Deep Learning: Implementing Neural Networks for long-term forecasting.

Expanded Datasets: Integrating more trade & economic indicators for deeper analysis.

Automated Policy Recommendations: AI-driven insights for ODA & trade strategy optimization.

Global Trade Expansion: Extending analysis beyond South Korea's trade partners to a global scale.

02 🛠 Technical Decisions

FastAPI & React (TypeScript) + VITE: Efficient backend & frontend integration.

Google OAuth Authentication: Secured data access.

Docker & CI/CD: Simplified deployment & automation.

Machine Learning Models: Implemented Random Forest & Linear Regression for trade/ODA forecasting.

Bokeh & Interactive Heatmaps: Advanced visual analytics tools for data exploration.