**Housing Price Prediction Project - Meeting Log**

**Date:** March 19, 2025 **Phase:** Advanced AI/ML Models Presentations **Focus:** Time Series Models

**Key Points**

* Time series models capture market dynamics
* ARIMA and Prophet models evaluated
* Temporal features improve prediction accuracy

**Discussion Summary**

We presented our analysis of housing market temporal dynamics using time series models. ARIMA models showed reasonable performance but struggled with spatial components. Facebook Prophet models handled seasonality well. Most importantly, we demonstrated that incorporating temporal features from these models into our main gradient boosting models improved overall performance.

**Model Performance**

* ARIMA: Moderate performance
* Prophet: Better handling of seasonality
* Gradient Boosting with temporal features: Best performance

**Key Time Series Features**

* Price momentum (3-month, 6-month, 12-month)
* Seasonality components
* Days-on-market trends
* Interest rate correlations

**Next Steps**

* Integrate time series predictions into ensemble approach
* Develop neighborhood-specific time series forecasts
* Incorporate economic indicators as exogenous variables
* Prepare for LSTM implementation
* Begin developing hybrid model architecture