

# Model Card — NL Rent Prediction (v1)

## 1. Model Overview

This model predicts monthly rent prices (EUR) for residential listings in the Netherlands. It was trained on a 2019–2020 Kaggle dataset of NL rental data, with an uplift factor of 1.50 applied to account for price growth. The model is deployed as a FastAPI web service with monitoring and feedback.

## 2. Intended Use

This model is intended for educational and demonstration purposes only. It showcases end-to-end deployment, observability, and CI integration for a regression task.

## 3. Model Details

- Algorithm: XGBoost Regressor
- Features: areaSqm, latitude, longitude, propertyType, furnish, internet, kitchen, shower, toilet, living, smokingInside, pets, city\_prior, pc4\_prior
- Frameworks: scikit-learn (pipeline), FastAPI, XGBoost
- Data split: 85% train / 15% test

## 4. Performance

Test  $R^2 \approx 0.845$ , MAE  $\approx €142$  on the held-out validation set.

## 5. Limitations

- Data covers only 2019–2020 period and may not reflect current rental market.
- Geographic coverage limited to the Netherlands.
- Uplift factor introduces estimation bias for newer listings.
- No external economic or seasonal factors considered.

## 6. Ethical Considerations

Model should not be used for real rental pricing decisions or credit-related purposes. Predictions are for educational visualization only.

## 7. Author

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