

IN SAMENWERKING MET

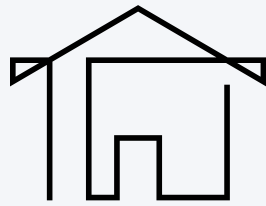
KR&A

Criminaliteitsdata als voorspeller op de huizenmarkt

ABE DIJKSTRA
FLORENCE LONT
PUCK VOORHAM
VERA WESTERMAN



Data



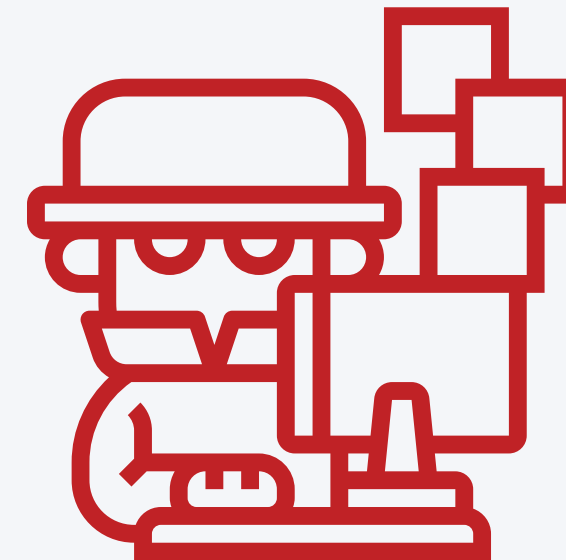
Traditioneel



Alternatief

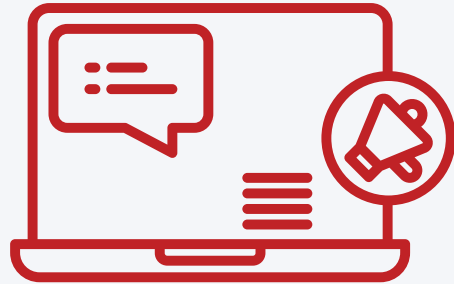


Datasets van KR&A



Criminaliteitsdata

Data

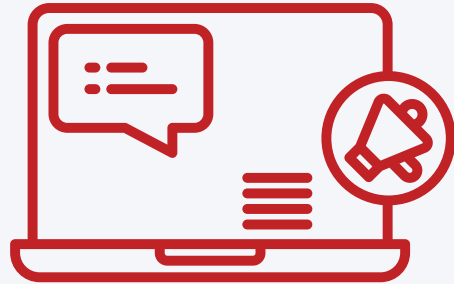


Dataset van KR&A

Opschoning:

Huur- en Koophuizen
Voorwerpen en percelen
Duplicaten

Data



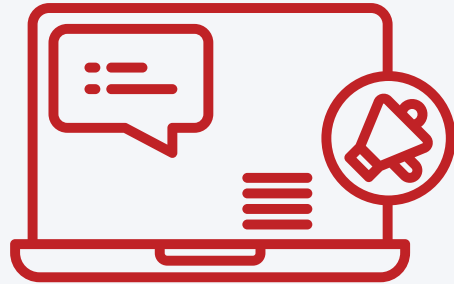
Dataset van KR&A

Opschoning:

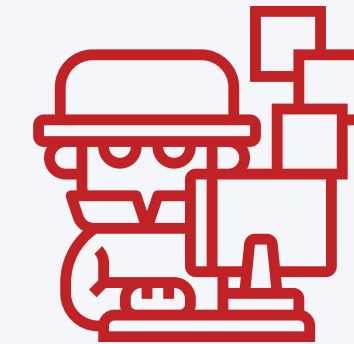
Huur- en Koophuizen
Voorwerpen en percelen
Duplicaten

Koophuizen 137.630

Data



Dataset van KR&A



Woninginbraken (politie)

Opschoning:

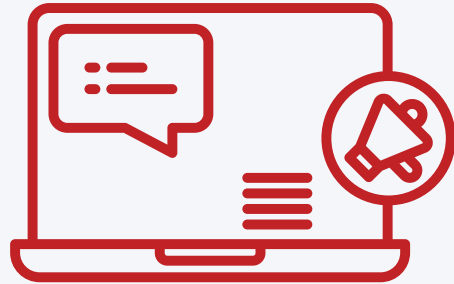
Huur- en Koophuizen
Voorwerpen en percelen
Duplicaten

Afgelopen 3 maanden

Postcode

Koophuizen 137.630

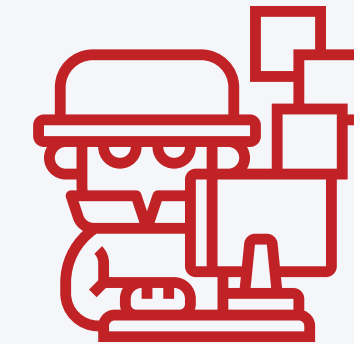
Data



Dataset van KR&A

Opschoning:

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Woninginbraken (politie)

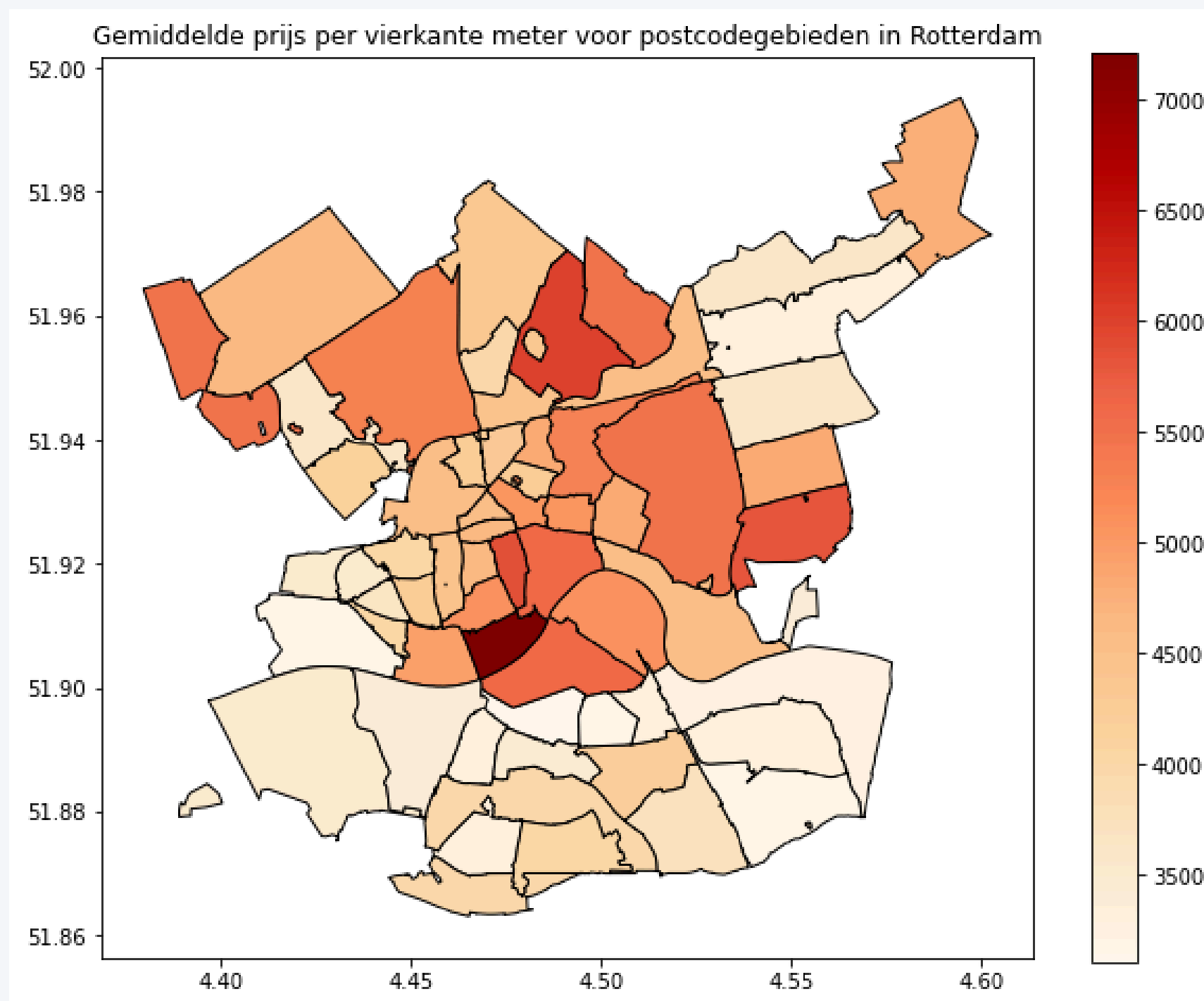
Afgelopen 3 maanden

Postcode

Koophuizen 106.564

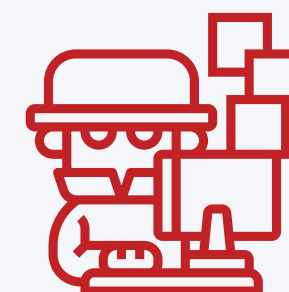


Visualisatie

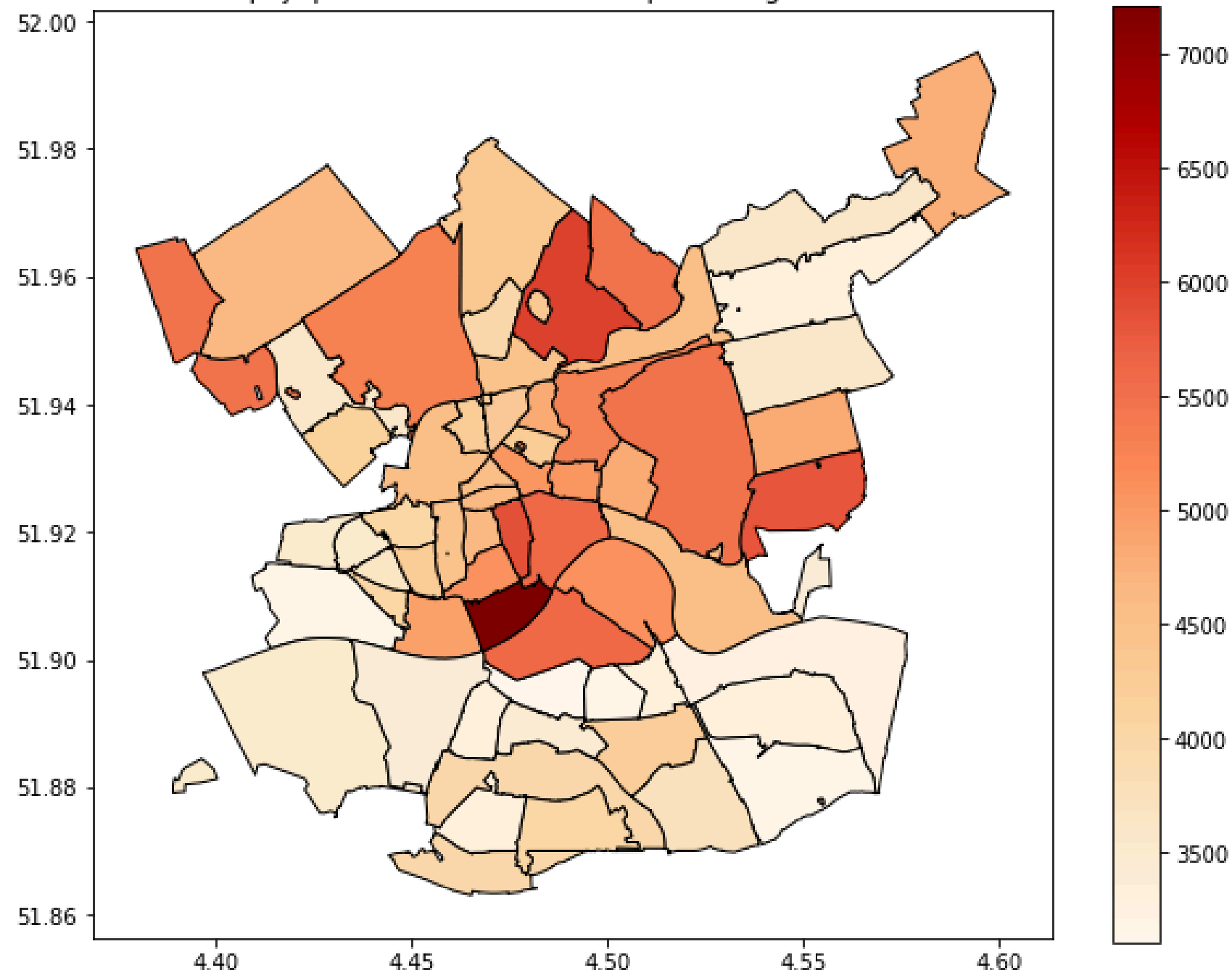




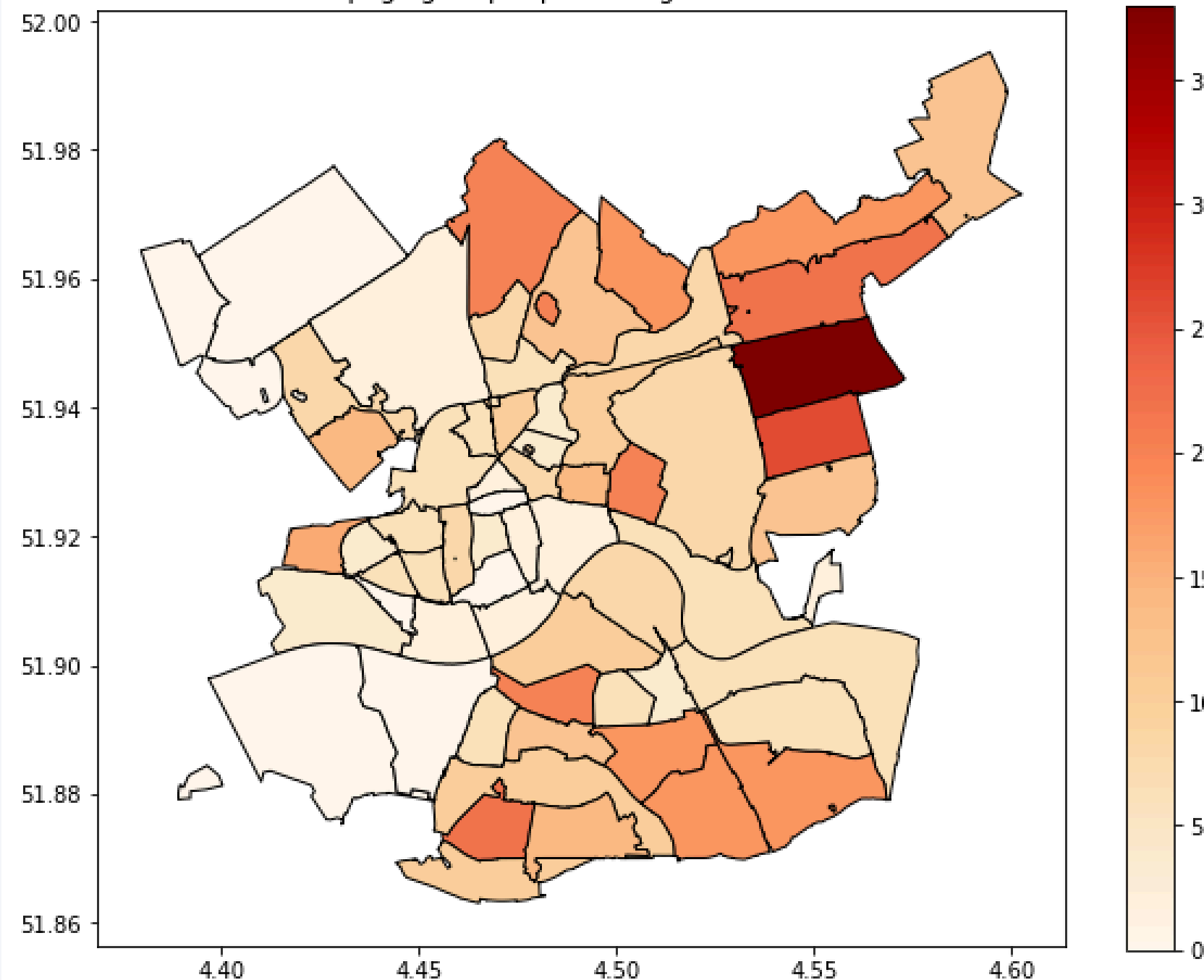
Visualisatie



Gemiddelde prijs per vierkante meter voor postcodegebieden in Rotterdam



Inbraak(pogingen) per postcodegebied in Rotterdam



Methode

Regression

Ensemble

Individuell

k-fold cross-validation (parallel)

Decision tree

Support Vector Machine

Nearest Neighbours

Linear regression:

- Ridge regressor
- Lasso regressor

Artificial Neural Networks:

- Multilayer Perceptron (sklearn)
- Deep Neural Network (Tensorflow)

Bagging:

- Random Forest
- Bagging Regressor

Voting Regressor

Stacking Regressor

Boosting:

- XGBoost
- Gradient Boost
- AdaBoost

Methode

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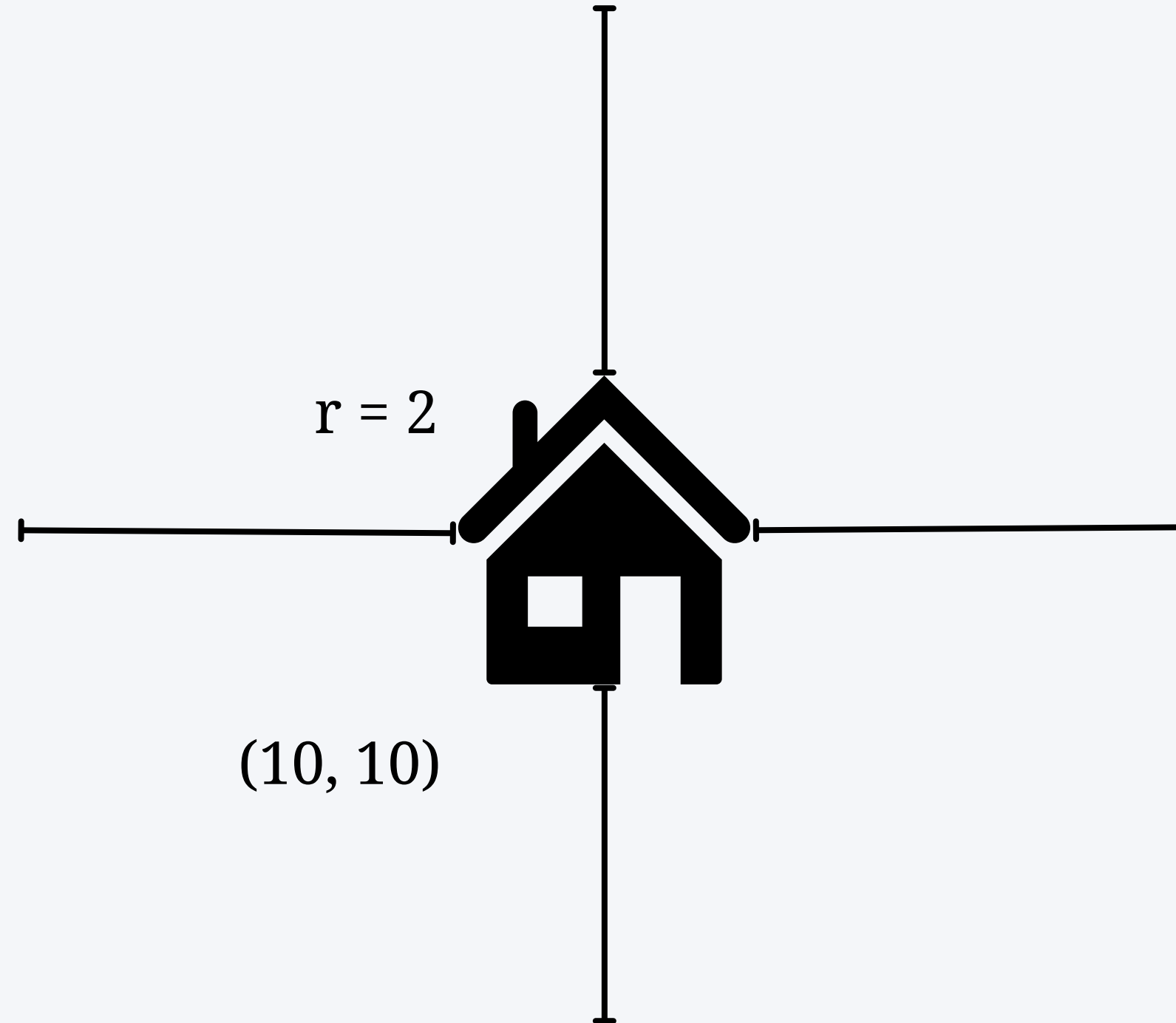
Stacking Regressor

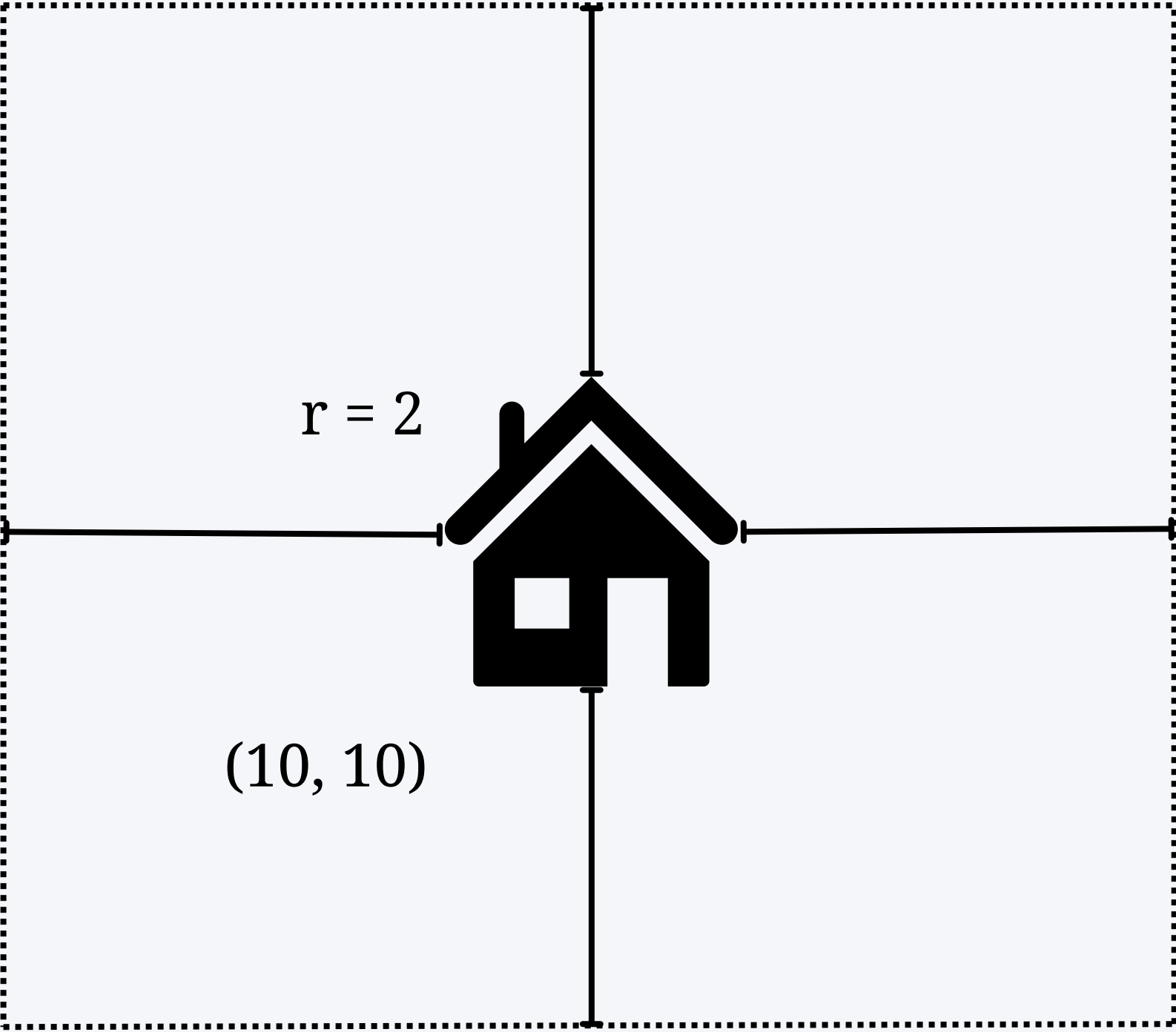
Boosting:

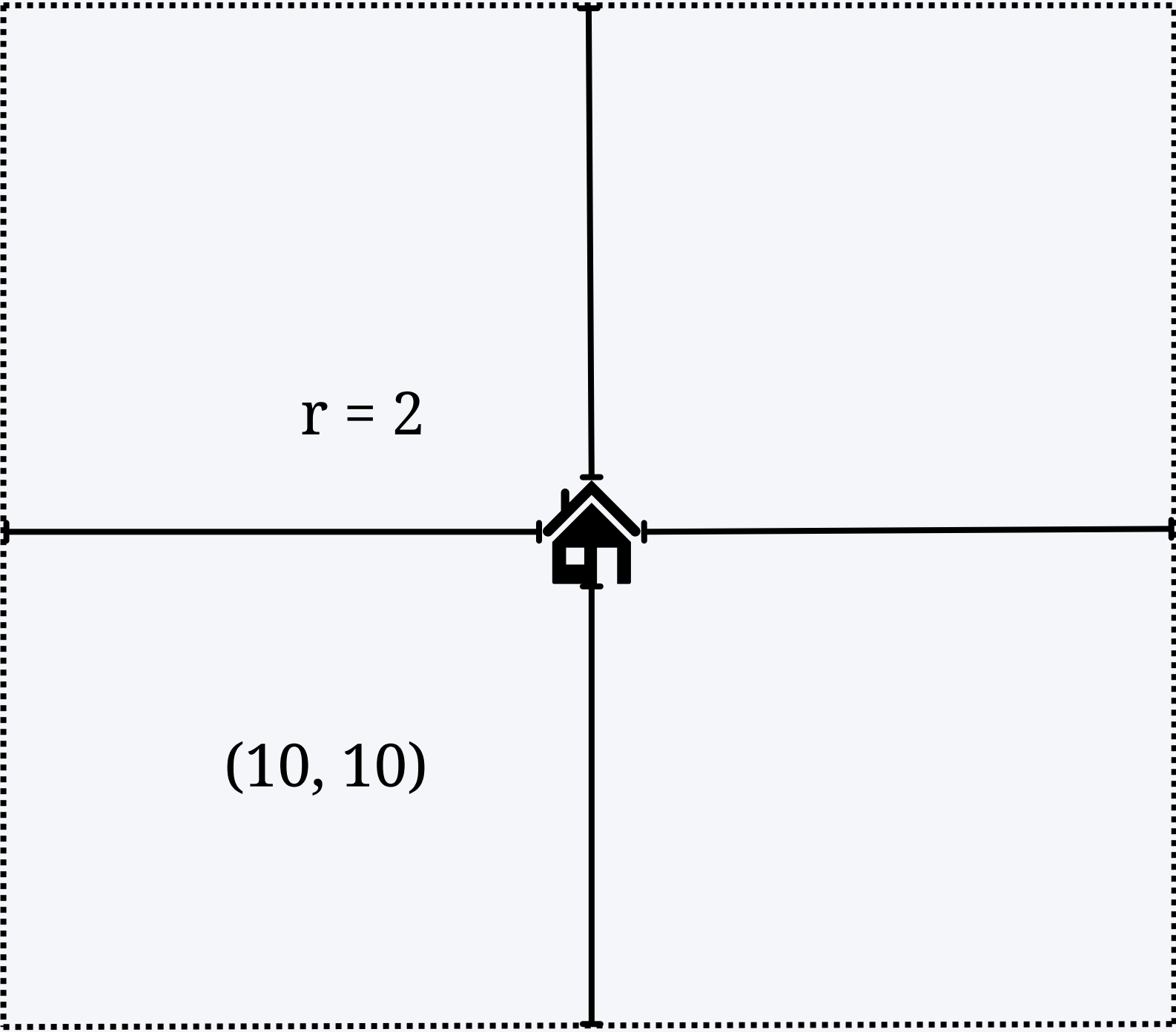
- XGBoost
- Gradient Boost
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(10, 10)







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Bagging:

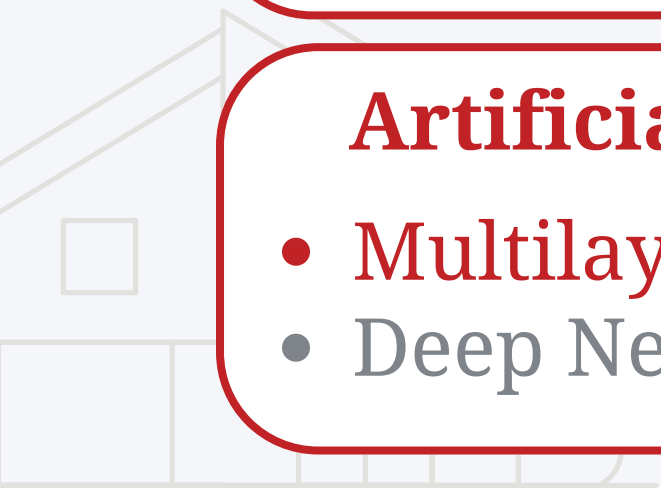
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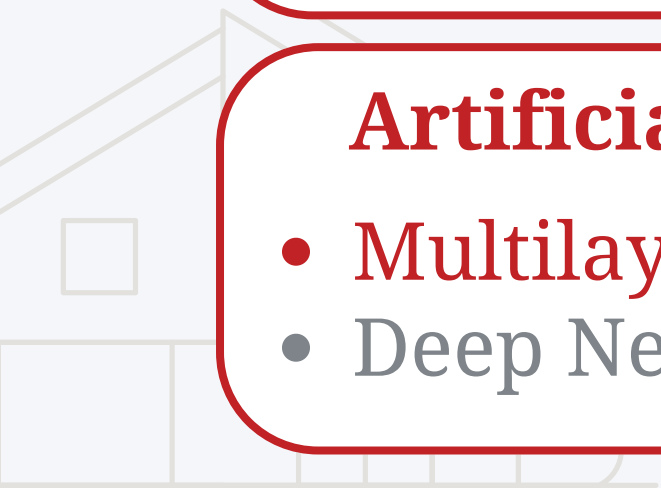
- Random Forest
- Bagging Regressor

Voting Regressor

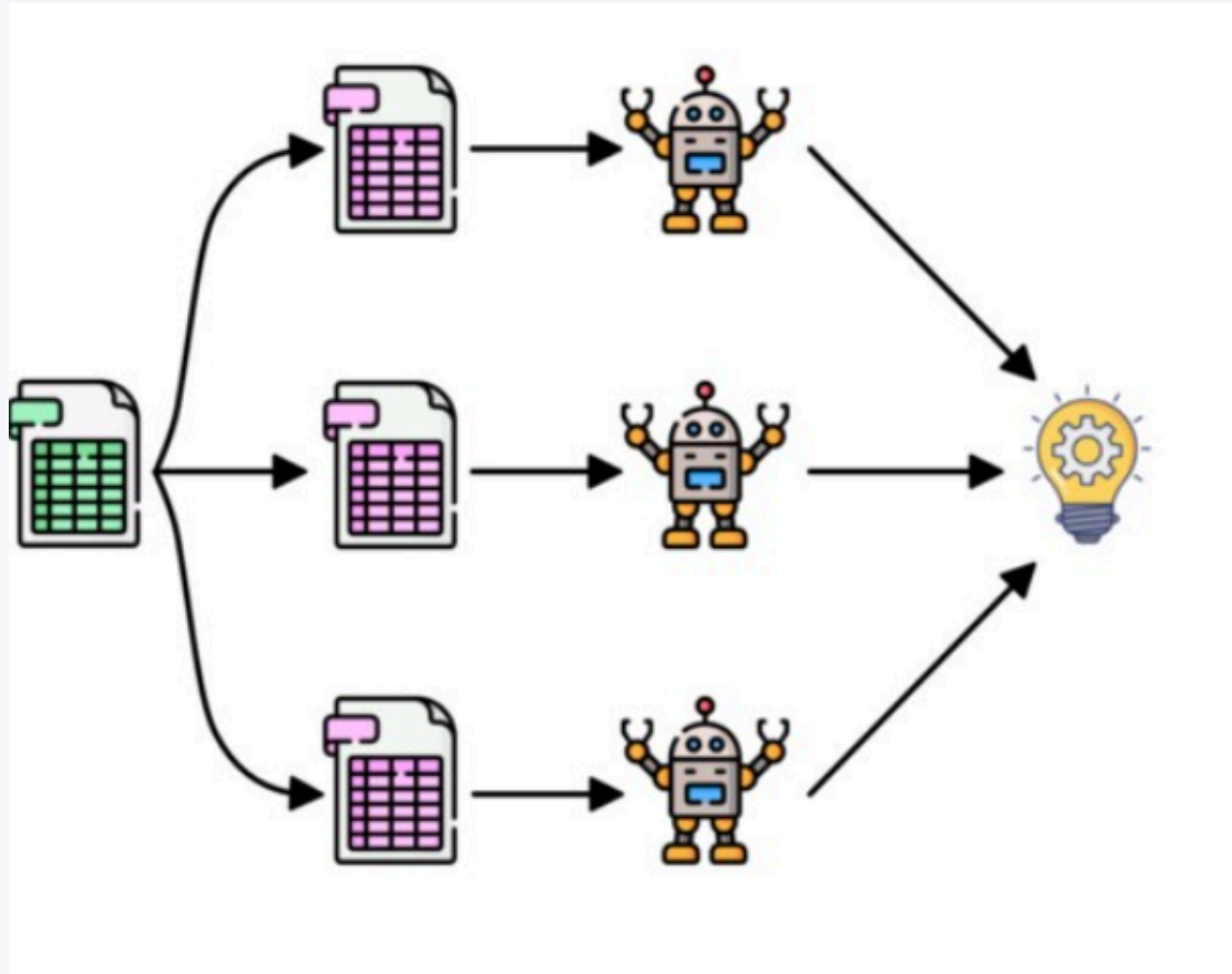
Stacking Regressor

Boosting:

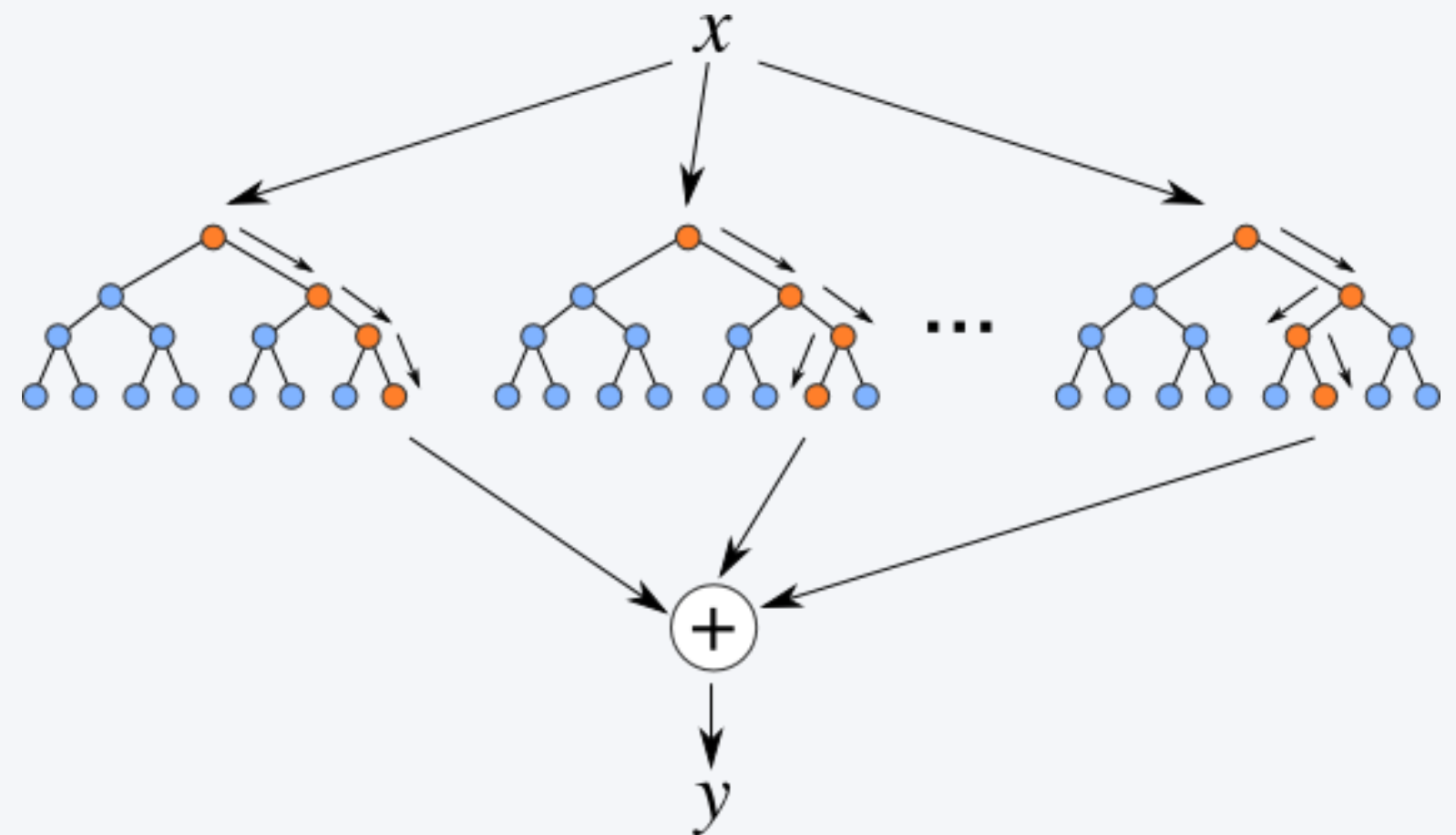
- XGBoost
- Gradient Boost
- AdaBoost



Bagging methode

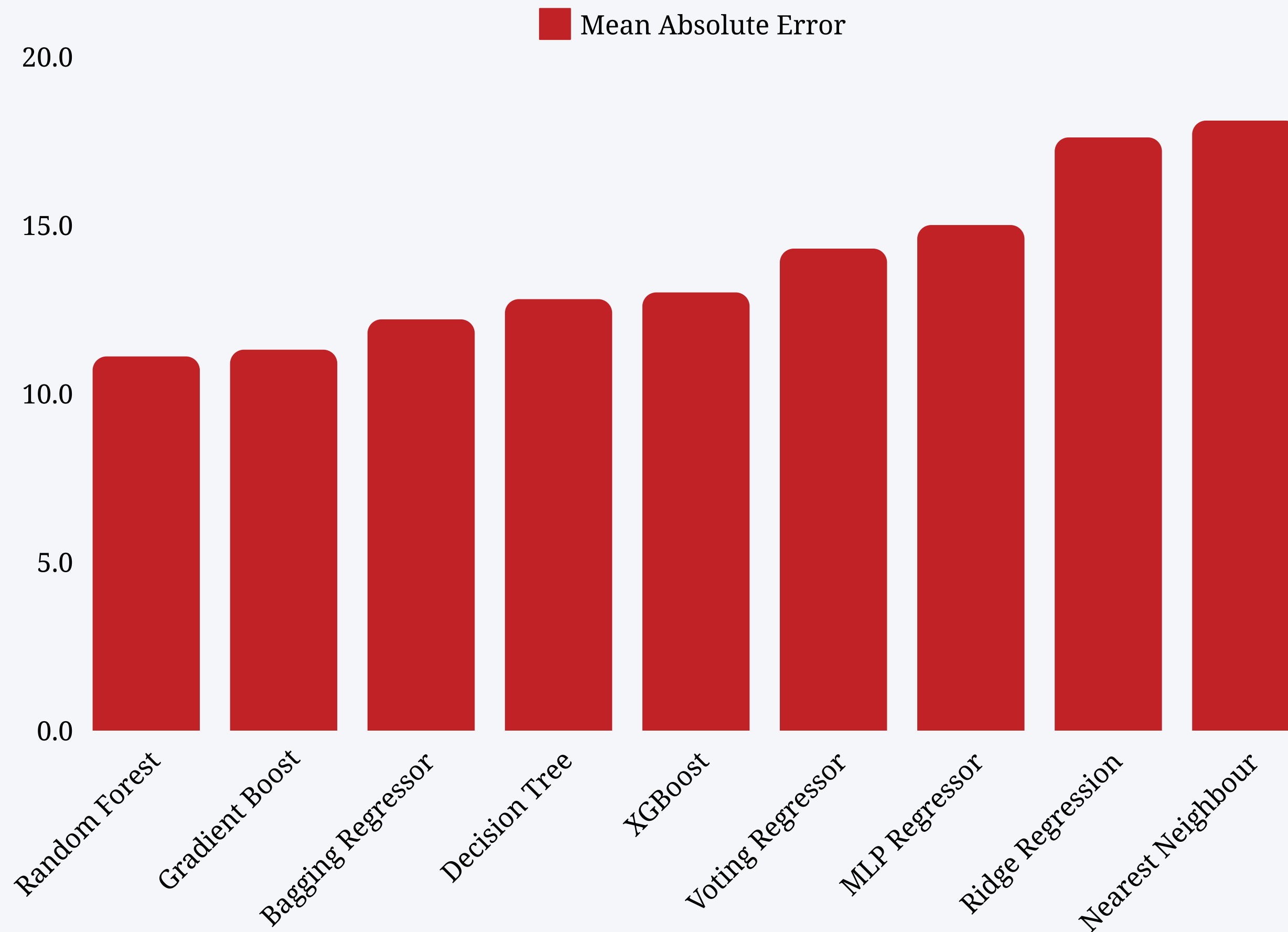


Proces



Voorbeeld:
Random Forest

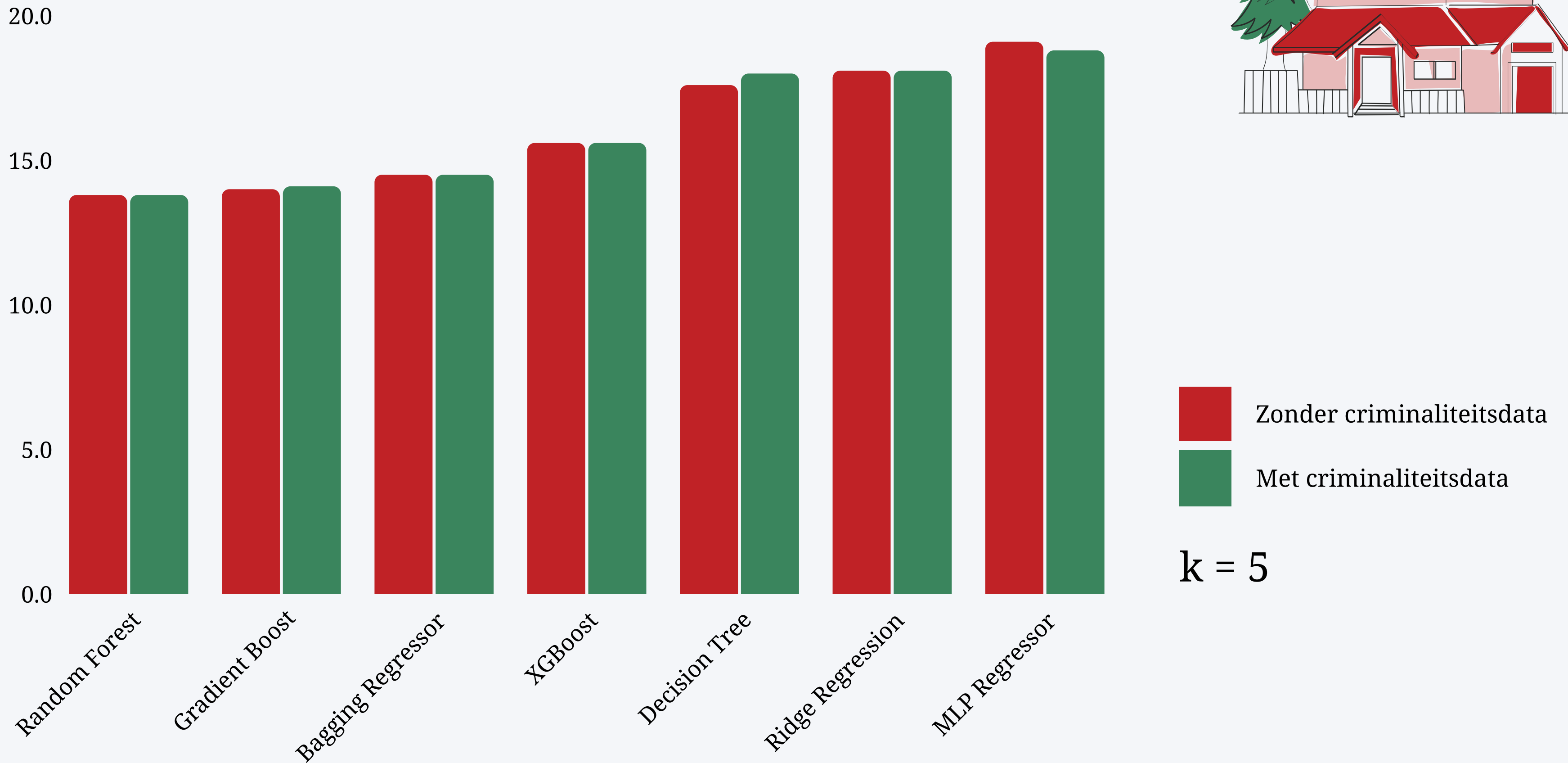
Resultaten Nederland



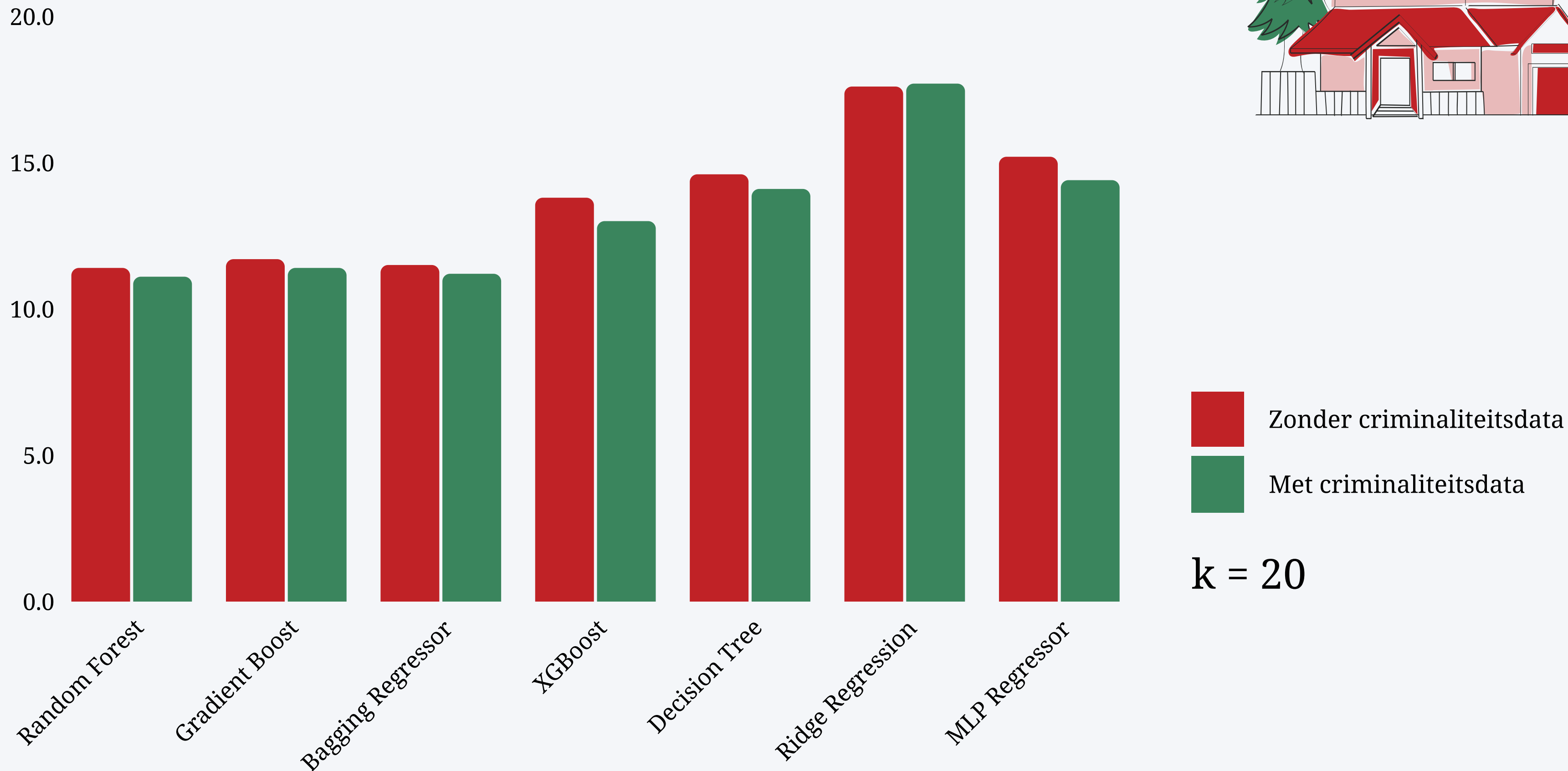
Zonder criminaliteitsdata

$k = 100$

Resultaten Nederland



Resultaten Rotterdam



Resultaten Random Forest model



	Zonder criminaliteitsdata	Met criminaliteitsdata
Nederland	13.8	13.8
Rotterdam	11.4	11.1

K = 20

Resultaten Random Forest model



	Zonder criminaliteitsdata	Met criminaliteitsdata
Nederland	13.8	13.8
Rotterdam	11.4	11.1

€ 450.000

K = 20

Resultaten Random Forest model



	Zonder criminaliteitsdata	Met criminaliteitsdata
Nederland	13.8	13.8
Rotterdam	11.4	11.1

€ 450.000

€ 12.000 dichterbij

K = 20

Conclusie & Discussie

Ervaren veiligheid of woninginbraak

Vraagprijs v.s. echte prijs

Random forest

Criminaliteit als indicator in één stad



Vragen?



