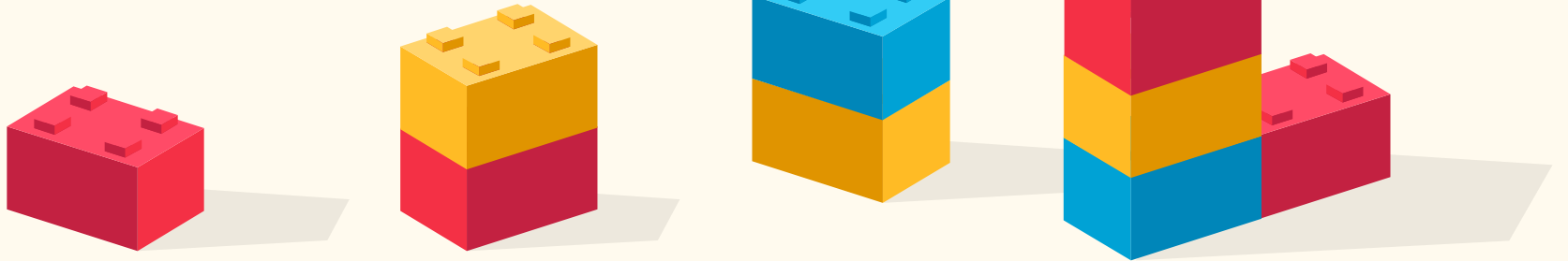


LEGO CITY PLANNER

Hannes, Jef & Jorre



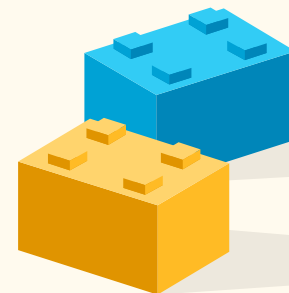
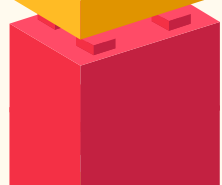
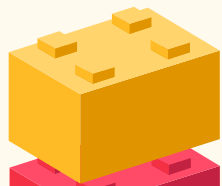
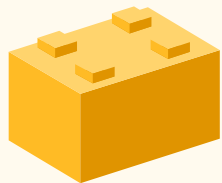
RUBBER DUCKS



HANNES

JEF

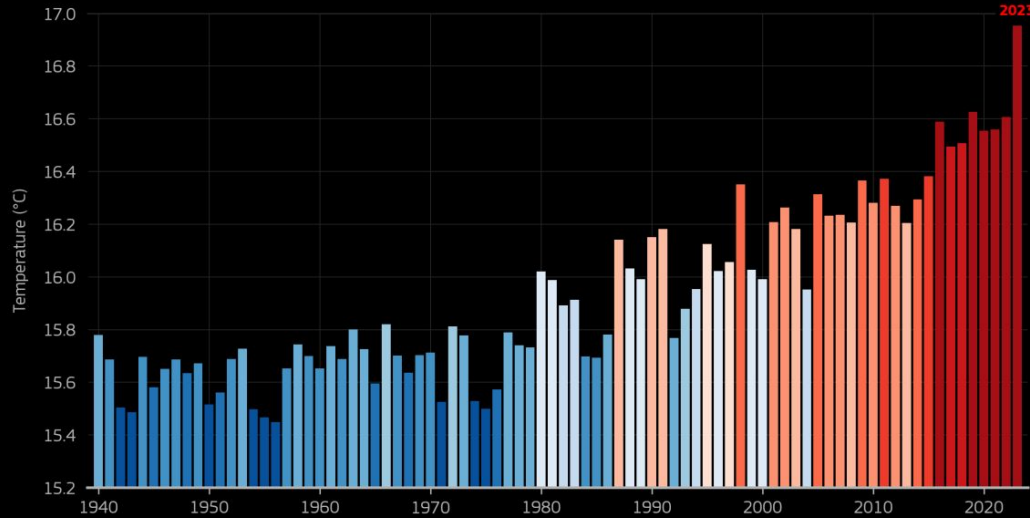
JORRE



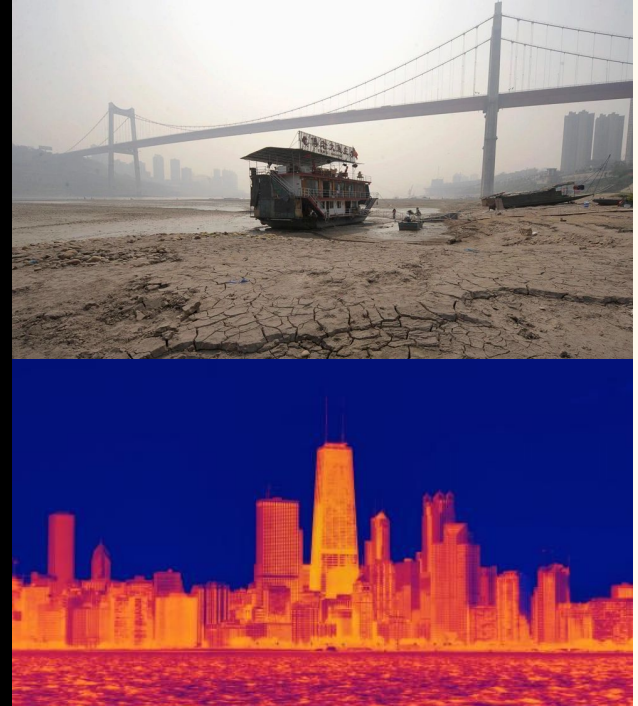
KLIMAAT

GLOBAL SURFACE AIR TEMPERATURE • JULY

Data: ERA5 1940–2023 • Credit: C3S/ECMWF



PROGRAMME OF
THE EUROPEAN UNION



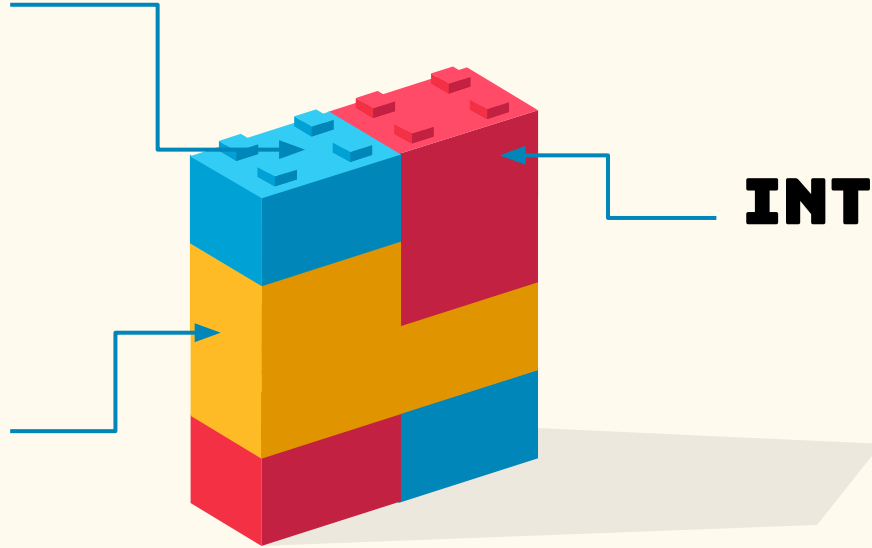
LEGO CITY PLANNER

AI

Model om temperaturen
te voorspellen

GUI

Gebruiksvriendelijk,
Kleurrijk en Intuïtief

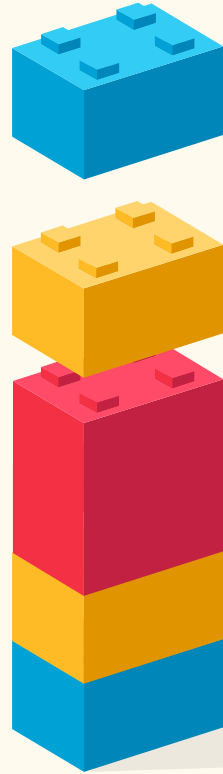
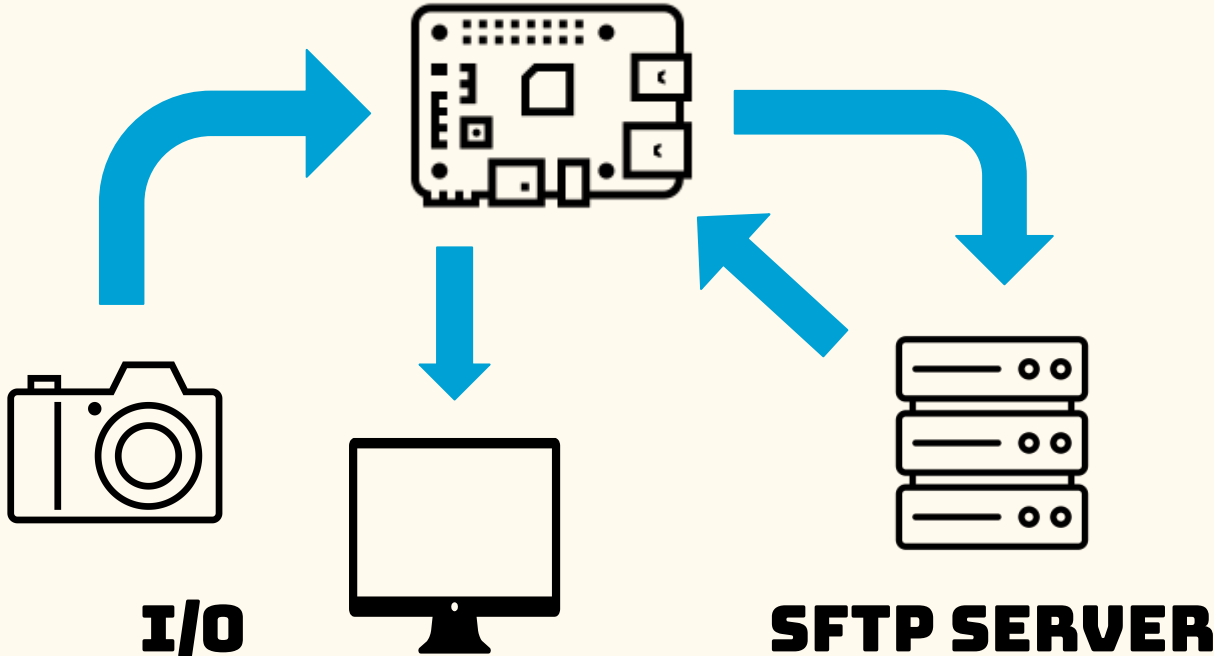


INTERACTIEF

LEGO en gamificatie

ARCHITECTUUR

RASPBERRY PI 4



FRAMEWORKS & LIBRARIES

OPENCV

Computer Vision

SKLEARN

Machine learning

NUMPY

Matrix operaties

TTKINTER

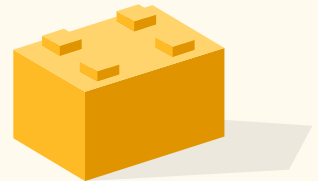
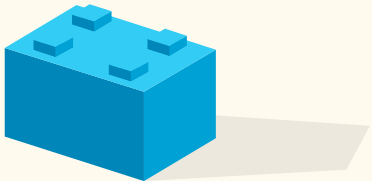
GUI

SEABORN

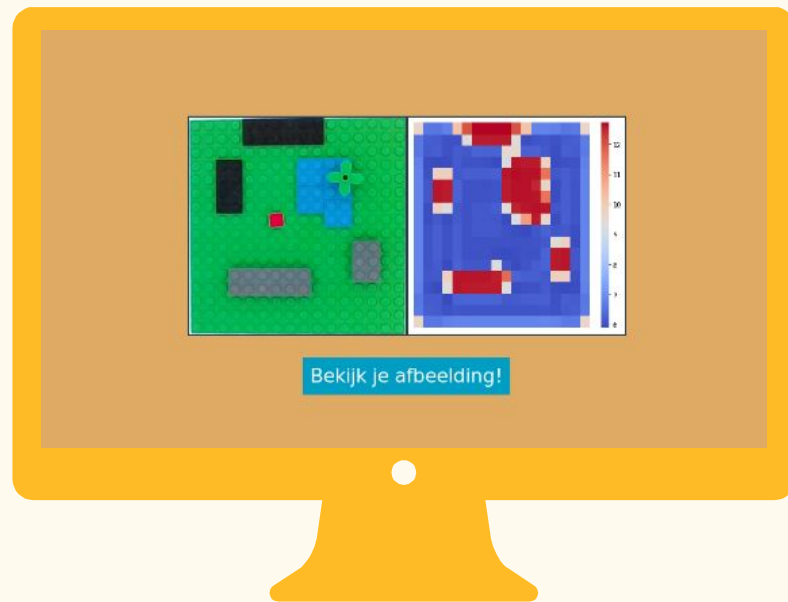
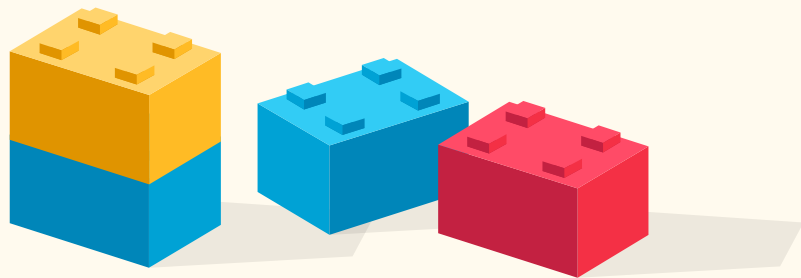
Heatmap

PARAMIKO

Connectie met server



DEMO



DATA PIPELINE

KLEUREN

Van afbeelding
Naar matrix

MODEL INPUT

6 matrices

01

02

03

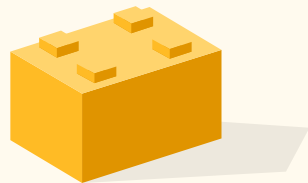
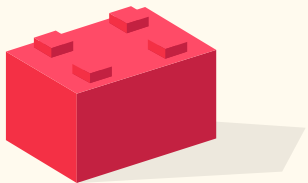
04

TRANSFORMATIE

Roteren, transleren
en bijsnijden

KERNEL

Percentages
water, groen, beton



DATA PIPELINE

KLEUREN

Van afbeelding
Naar matrix

MODEL INPUT

6 matrices

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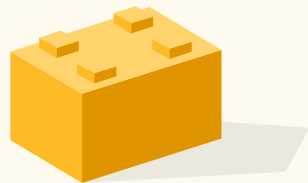
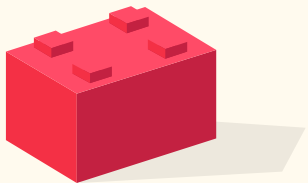
04

TRANSFORMATIE

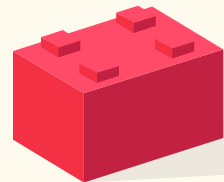
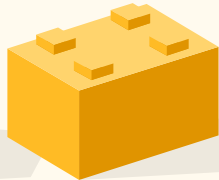
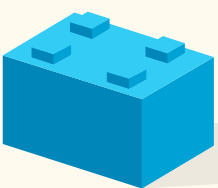
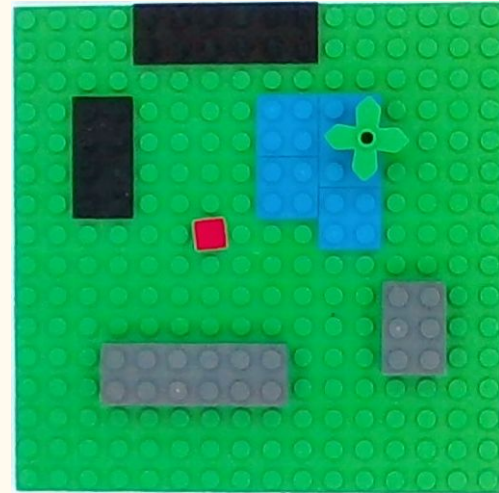
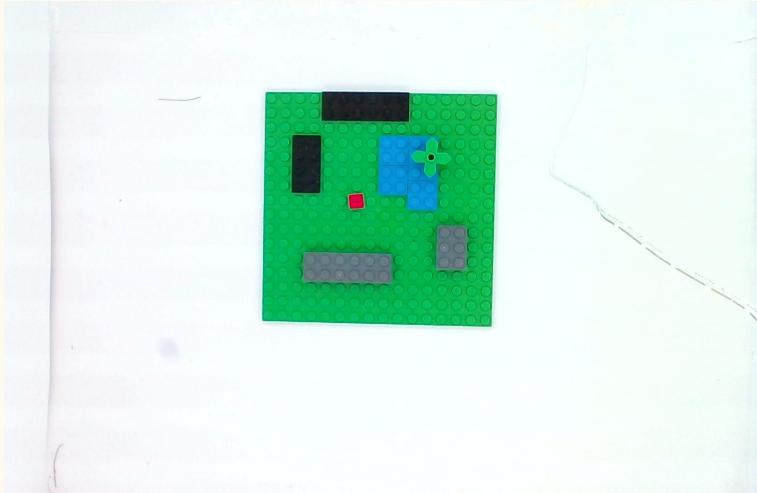
Roteren, transleren
en bijsnijden

KERNEL

Percentages
water, groen, beton



TRANSFORMATIE



DATA PIPELINE

KLEUREN

Van afbeelding
Naar matrix

MODEL INPUT

6 matrices

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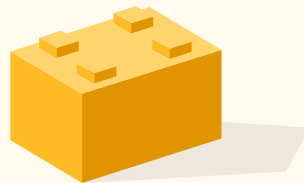
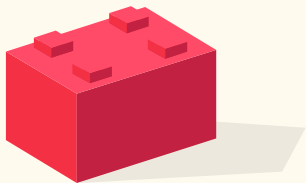
04

TRANSFORMATIE

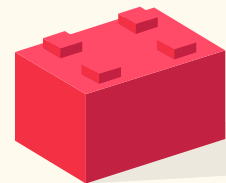
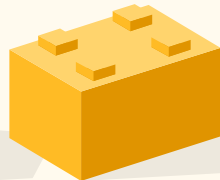
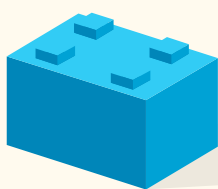
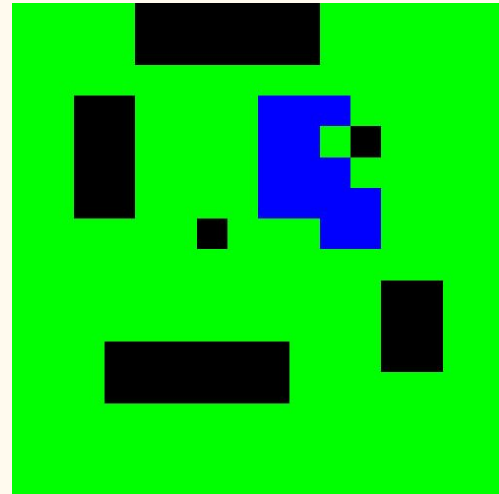
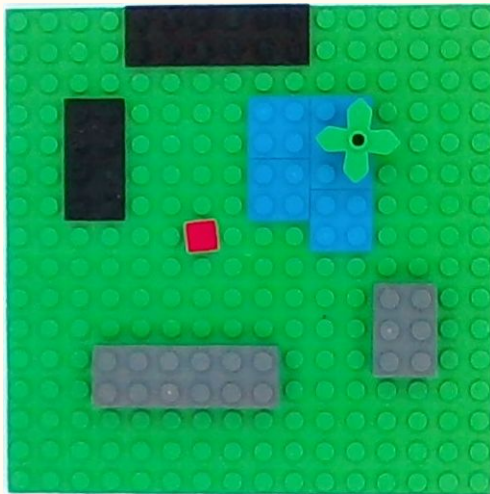
Roteren, transleren
en bijsnijden

KERNEL

Percentages
water, groen, beton



KLEUREN



DATA PIPELINE

KLEUREN

Van afbeelding
Naar matrix

MODEL INPUT

6 matrices

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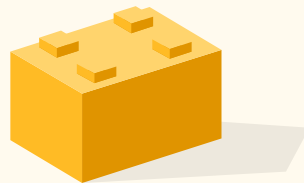
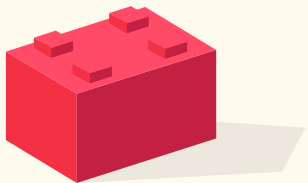
04

TRANSFORMATIE

Roteren, transleren
en bijsnijden

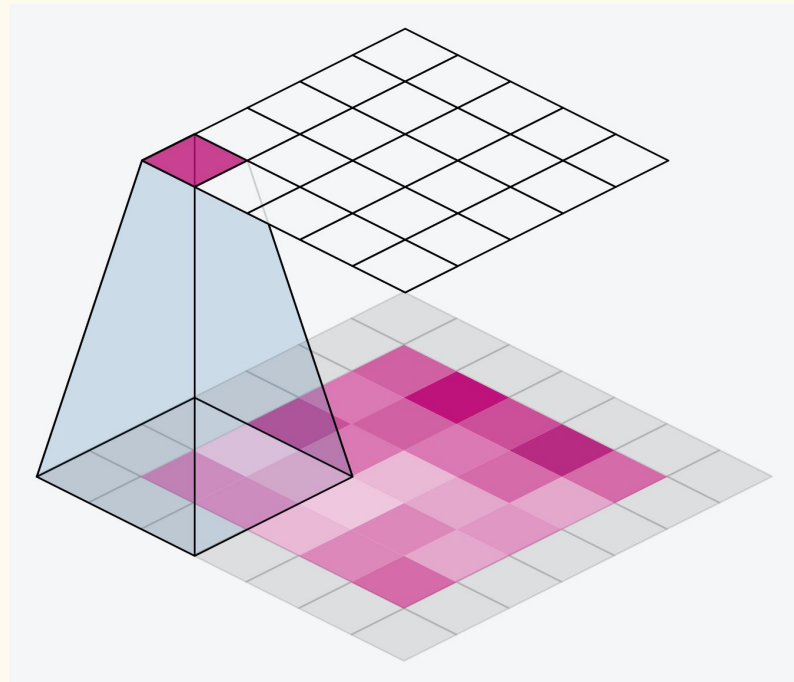
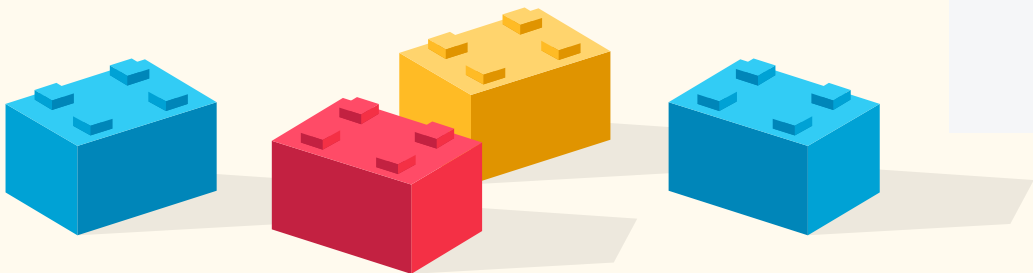
KERNEL

Percentages
water, groen, beton



KERNEL

Sum Pooling



DATA PIPELINE

KLEUREN

Van afbeelding
Naar matrix

MODEL INPUT

6 matrices

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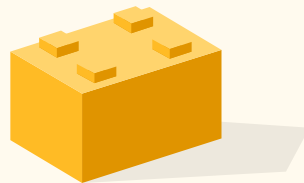
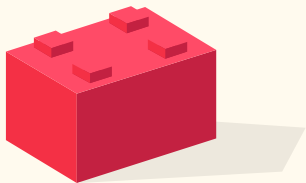
04

TRANSFORMATIE

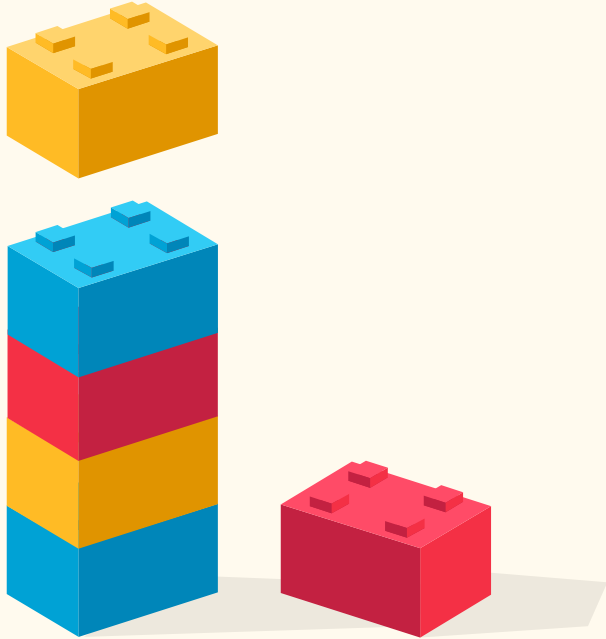
Roteren, transleren
en bijsnijden

KERNEL

Percentages
water, groen, beton



MODEL **INPUTS**



STADSINFORMATIE

Percentages water, vegetatie, beton

EXTRA WEERINFORMATIE

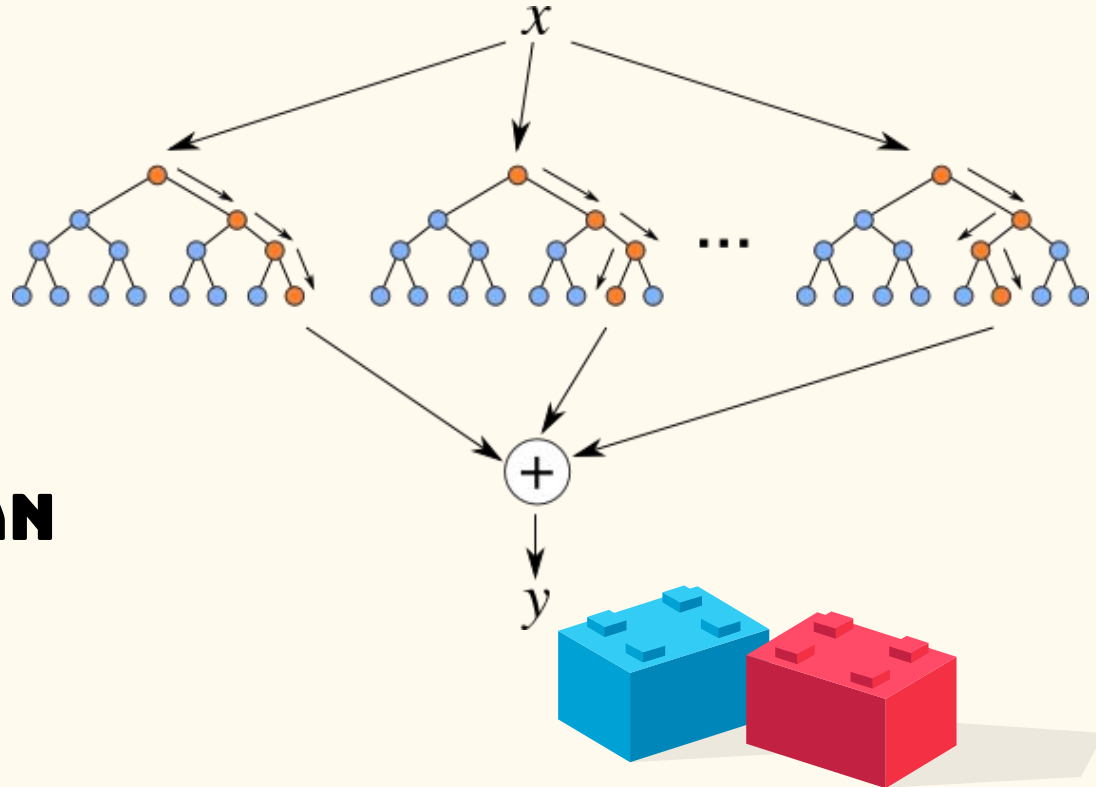
Temperatuur, windsnelheid, etc.

AI MODEL

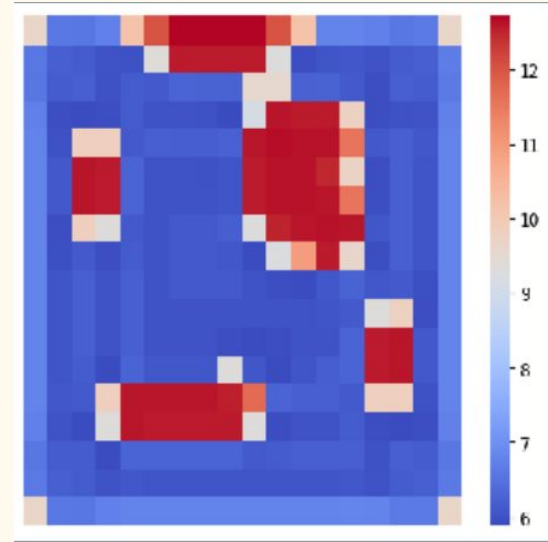
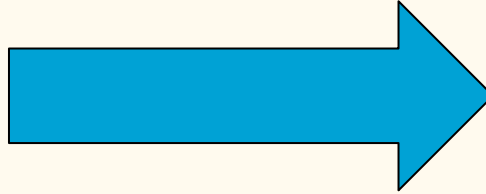
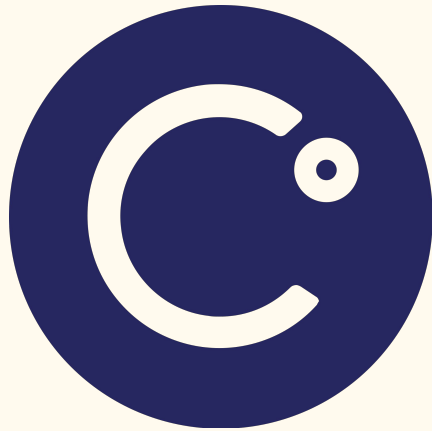
**RANDOM
FOREST
MODEL**

RMSE $\pm 1^{\circ}\text{C}$

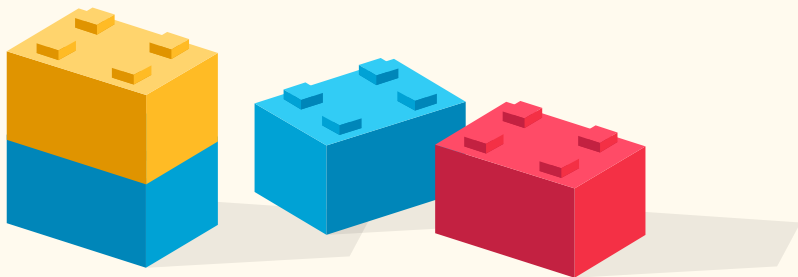
**MET DANK AAN
ANDREI**



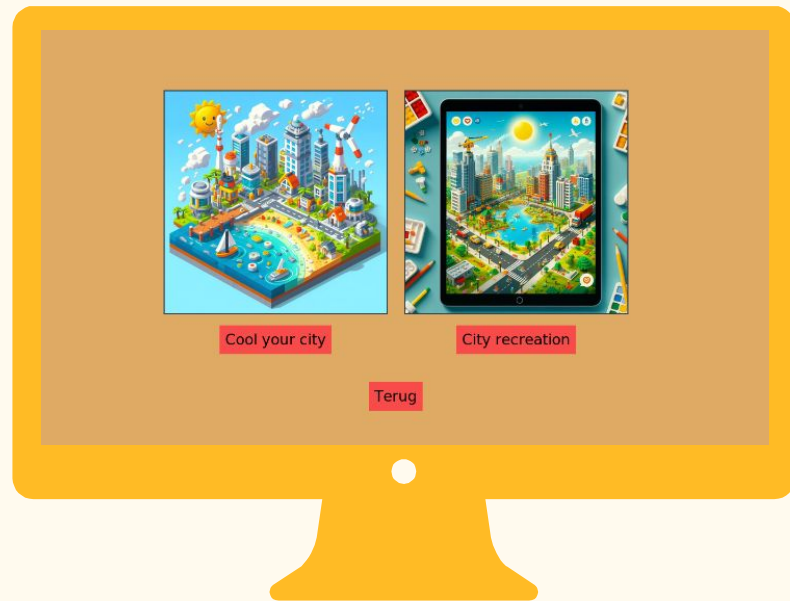
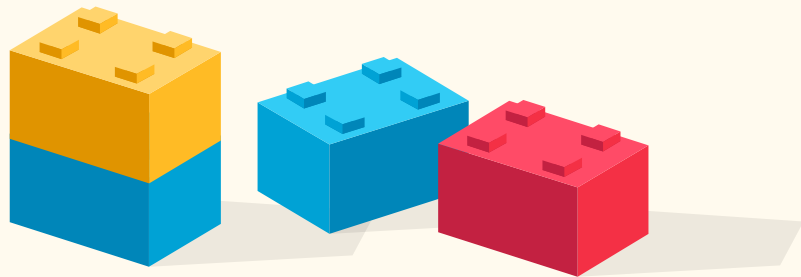
MODEL OUTPUT



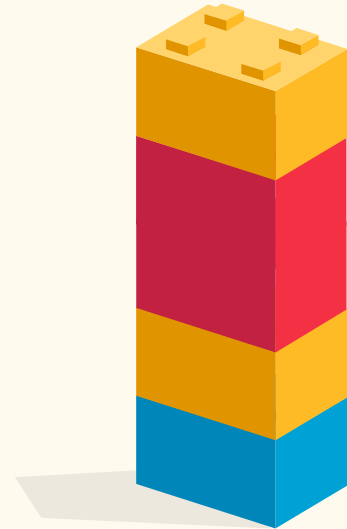
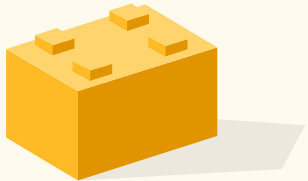
UPLOAD EN QR-CODE

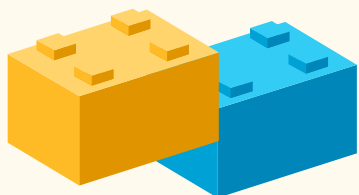


DEMO



TERUGBLIK



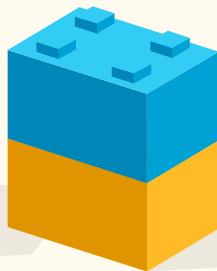
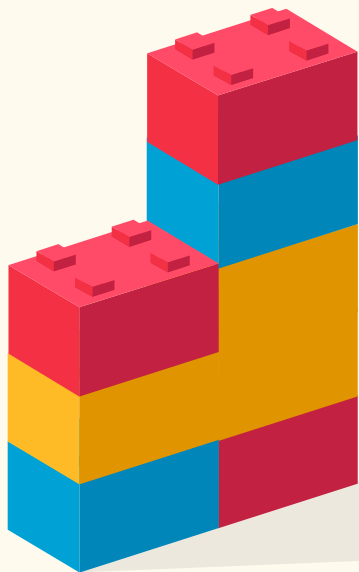
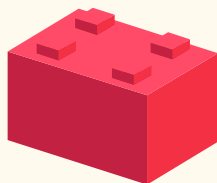


DANKU!

Zijn er nog vragen?
Met dank aan:



ETRO
ELECTRONICS &
INFORMATICS



KdG

Karel de Grote
Hogeschool