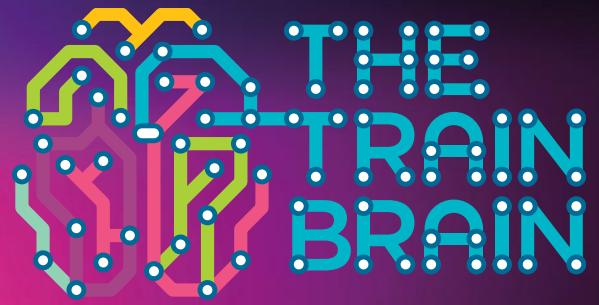
Identifying modes of transport

- when using mobile network data

TRAFIKVERKET

Göteborgs Stad



CONSAT

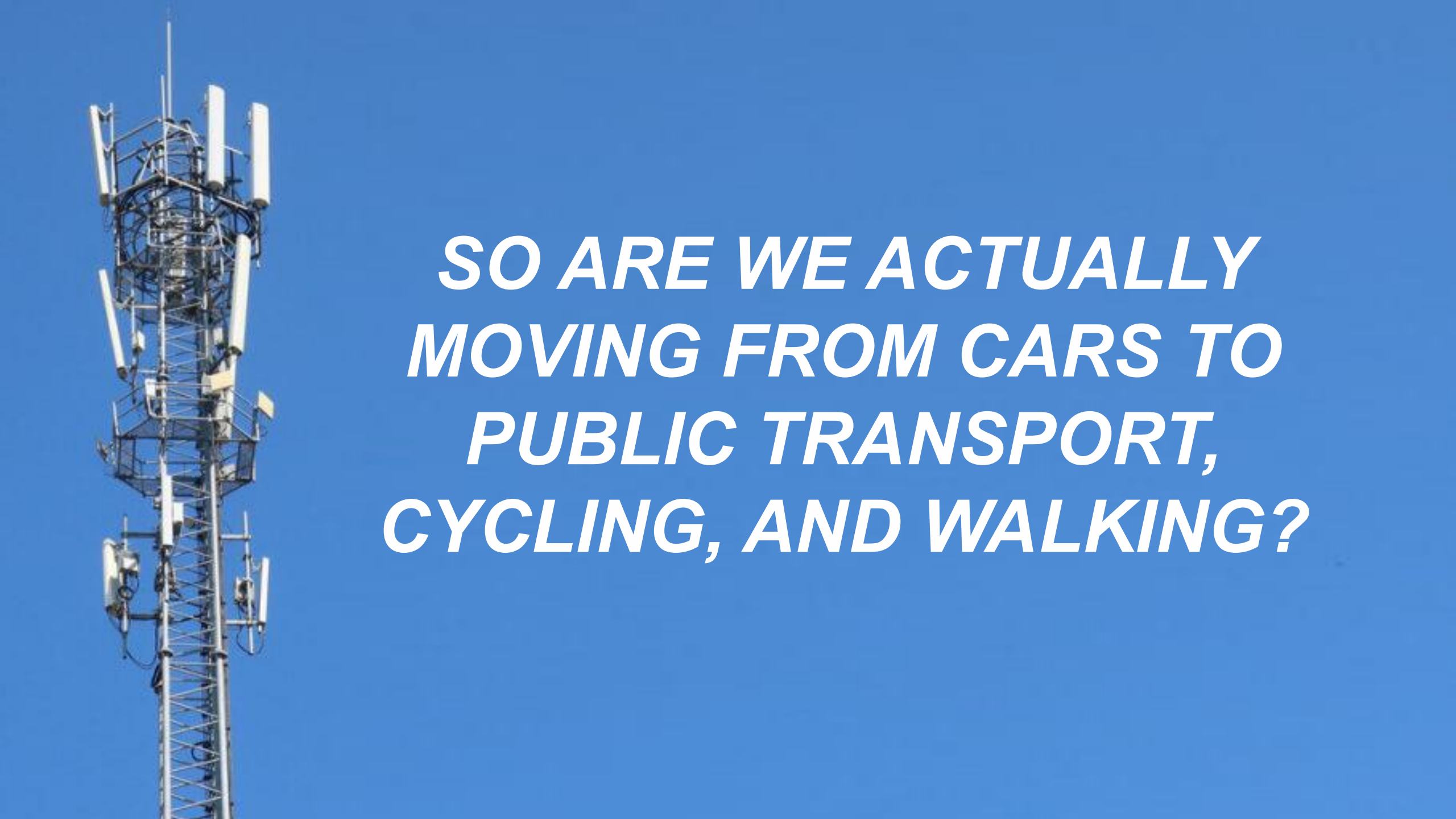
Because if we want to

ACCELERATE THE TRANSITION TO SUSTAINABLE MOBILITY

Then we need to

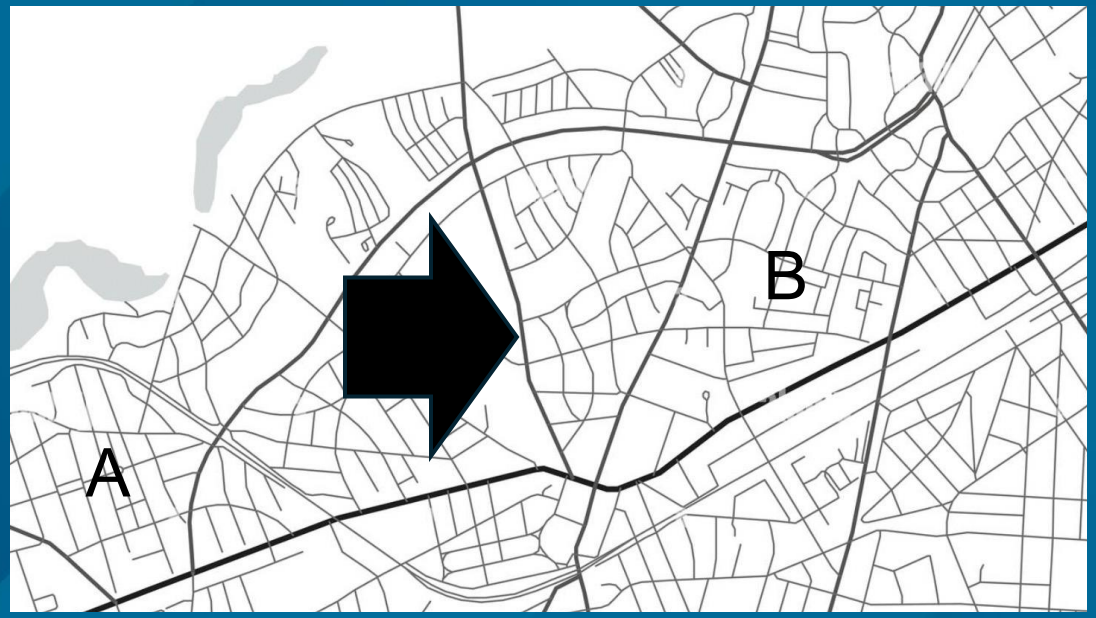
CHANGE HOW PEOPLE MOVE AROUND

DEADLINE
TIME LEFT TO LIMIT GLOBAL WARMING TO 1.5°C
3YRS 310DAYS 04:10:57

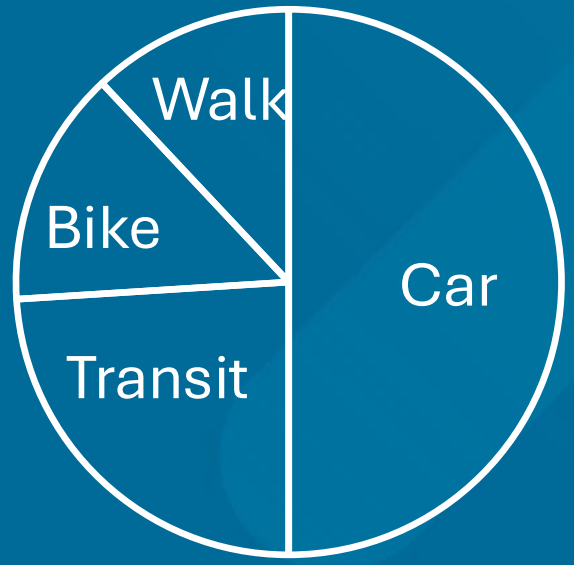

SO ARE WE ACTUALLY
MOVING FROM CARS TO
PUBLIC TRANSPORT,
CYCLING, AND WALKING?

In practice this means

For any origin-destination relation



automatically understanding the modal split



and being able to monitor changes in travel and changes of car usage over time

From millions of trips captured through Train Brain Movement Analytics, traffic analysts manually classify approx. 1000 random samples. The ML-model learns from this labeled data and automatically assigns travel modes to all trips.

Annotation

ML-model

Travel modes

In this project we have tried to automate the travel mode classification

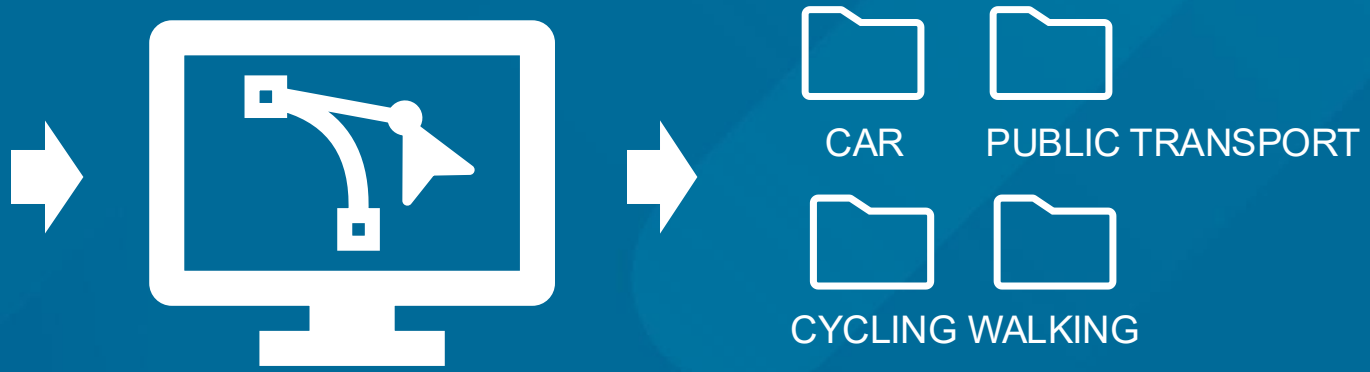
HIGHER QUALITY!

LOWER COST!

RESULTS

Plan B: Use a trip planner to assist manual trip annotation

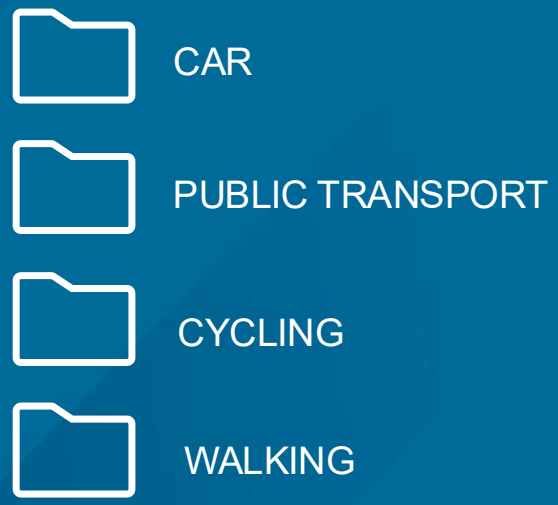
From millions of trips captured through movement analytics, traffic analysts manually classify approx. 1000 random samples. The model learns from this labeled data to automatically assign transportation modes to all trips.



The result:

HIGHER QUALITY!

2.5 million trips



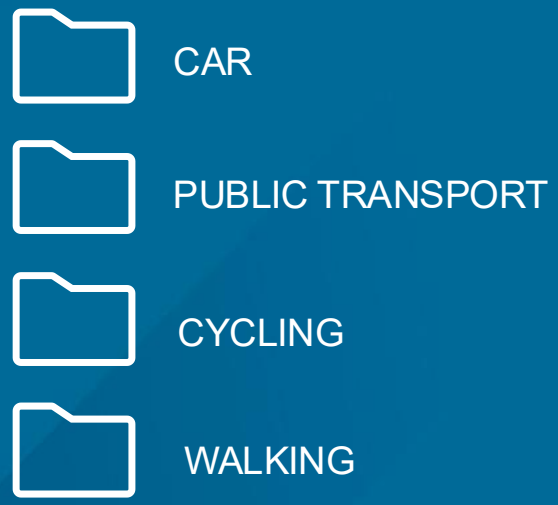
Margin of error:
±3 %-points

The result:

HIGHER QUALITY!

Initial findings!

2.5 million trips



Margin of error:
±3 %-points

NEXT STEP

A new Drive Sweden project initiated by Trafikverket: VELO

Building on our findings:

- Fully automated model
- Can be used anywhere without local training
- Even lower margin of error
- Prioritizes identifying bicycling

Trafikverket, VTI, Trafikverket, Stockholms stad, Örebro kommun, Västerås stad, Helsingborgs stad, Borås stad, Halmstad kommun, Falun kommun, Kristianstad kommun, Lindholmen Science Park and The Train Brain

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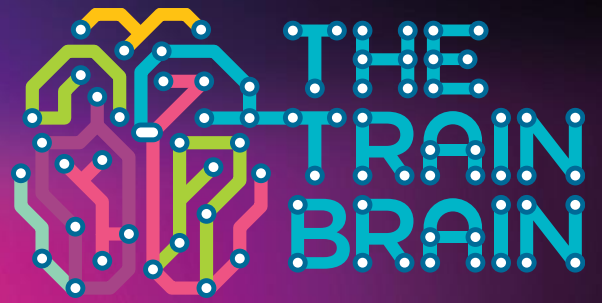
Thank you!

HELSINGBORG

TRAFIKVERKET

Urban Mobility

CONSAT

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