Using open source software and open data to evaluate the equity of transit services

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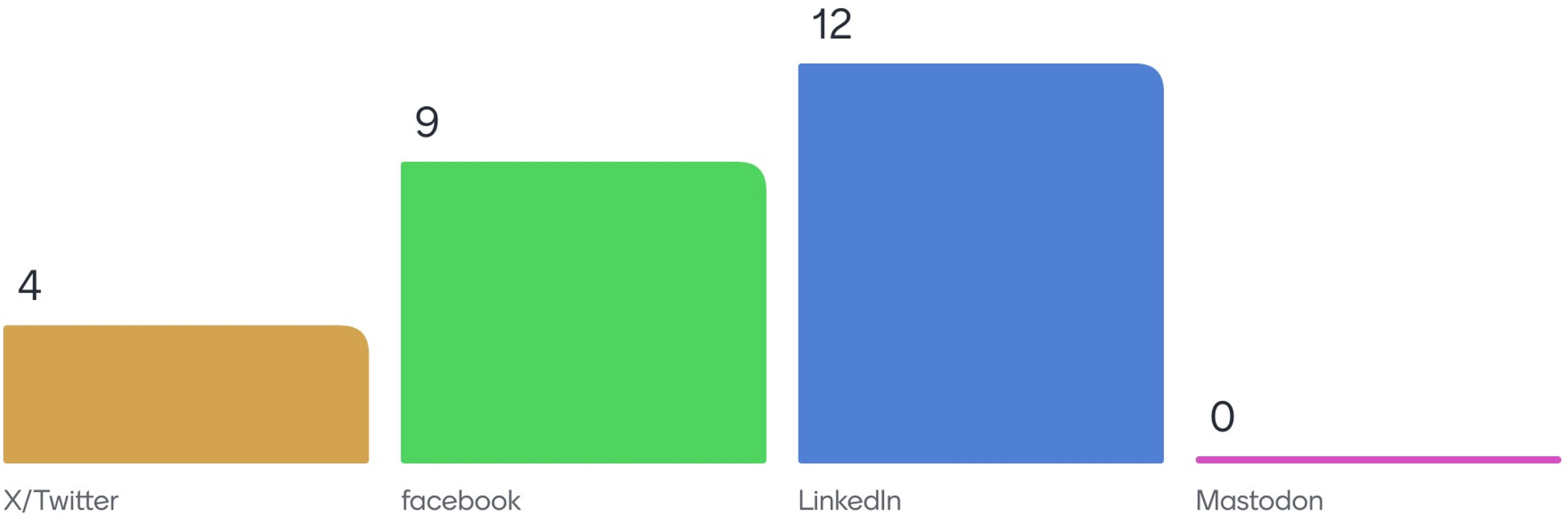
McMaster University

2025 Annual Colloque Chaire Mobilite

...but recent circumstances...

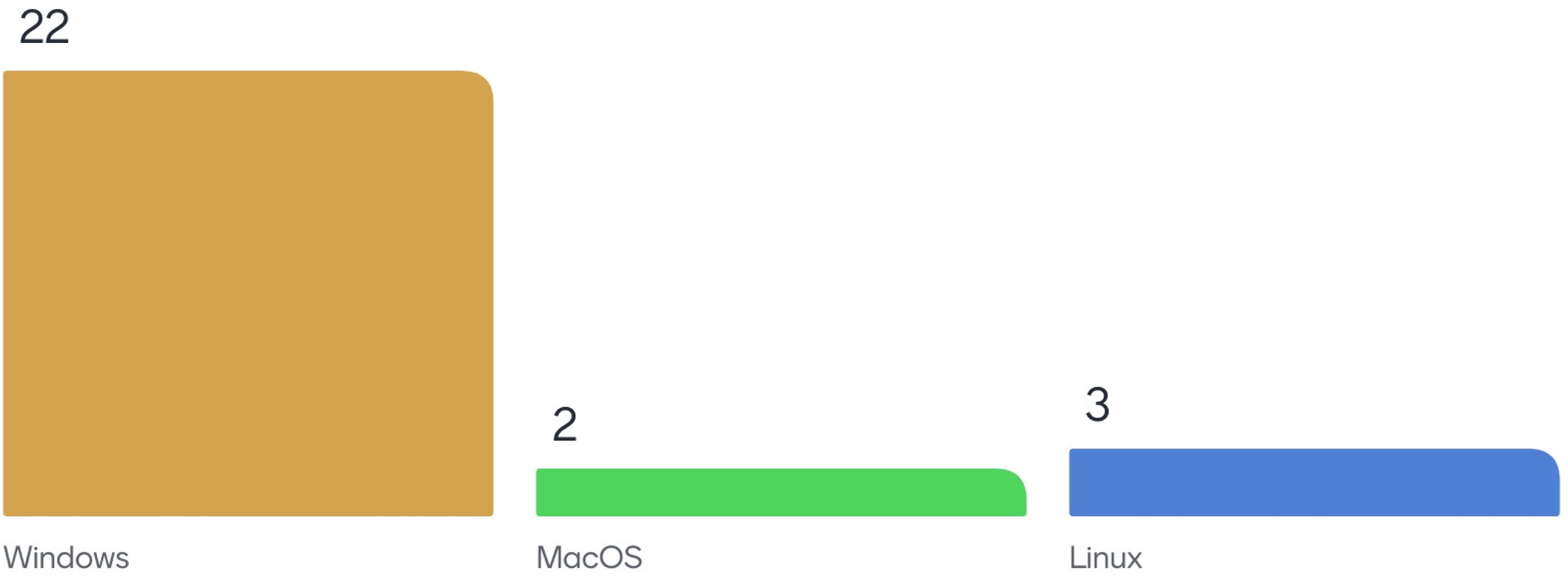
check all that apply

does your organization use any of this for communications?



check all that apply

does your organization use any of this for its systems?



check all that apply

or any of these for its operations?


Adobe
alexa
ebay
Square
yahoo!
Spotify
Evernote
Microsoft
salesforce
PayPal
amazon
Google
IBM
slack
grammarly

step by incremental step

we have relinquished our tech sovereignty

and have allowed ourselves to be corraled into walled gardens

and worse

even when we pay for the product, we are still the product

iCRAP! NOW WITH AI

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ORIGINAL ARTICLE

Open source tools for geographic analysis in transport planning

Robin Lovelace[1]

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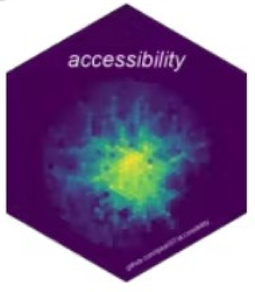
Abstract
Geographic analysis has long supported transport plans that are appropriate to local contexts. Many incumbent 'tools of the trade' are proprietary and were developed to support growth in motor traffic, limiting their utility for transport planners who have been tasked with twenty-first century objectives such as enabling citizen participation, reducing pollution, and increasing levels of physical activity by getting more people walking and cycling. Geographic techniques—such as route analysis, network editing, localised impact assessment and interactive map visualisation—have great potential to support modern transport planning priorities. The aim of this paper is to explore emerging open source tools for geographic analysis in transport planning, with reference to the literature and a review of open source tools that are already being used. A key finding is that a growing number of options exist, challenging the current landscape of proprietary tools. These can be classified as command-line interface, graphical user interface or web-based user interface tools and by the framework in which they were implemented, with numerous tools released as R, Python and JavaScript packages, and QGIS plugins. The review found a diverse

it does not have to be this way

least of all in transportation planning

a rich ecosystem has evolved to support numerous tasks in transport planning

QGIS



GeoPandas

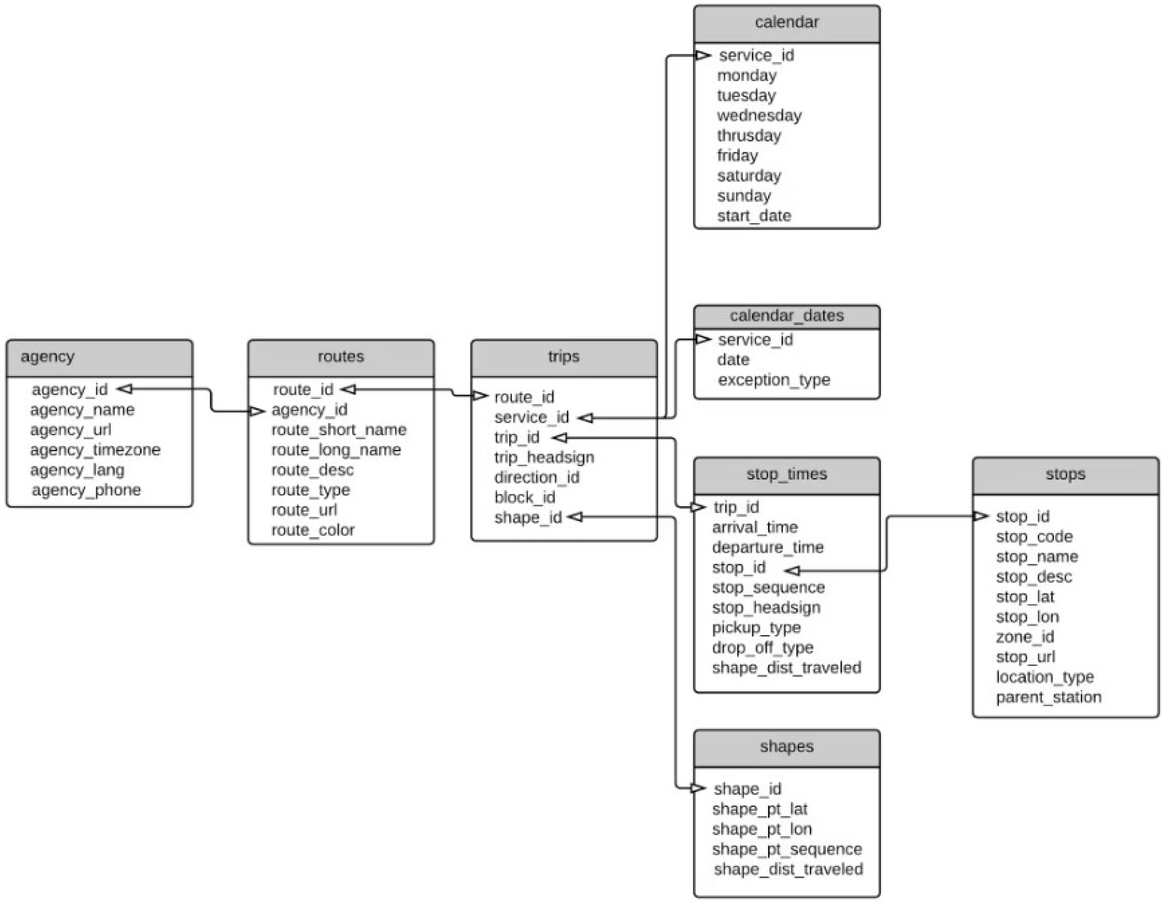
movingpandas

julian's independent study

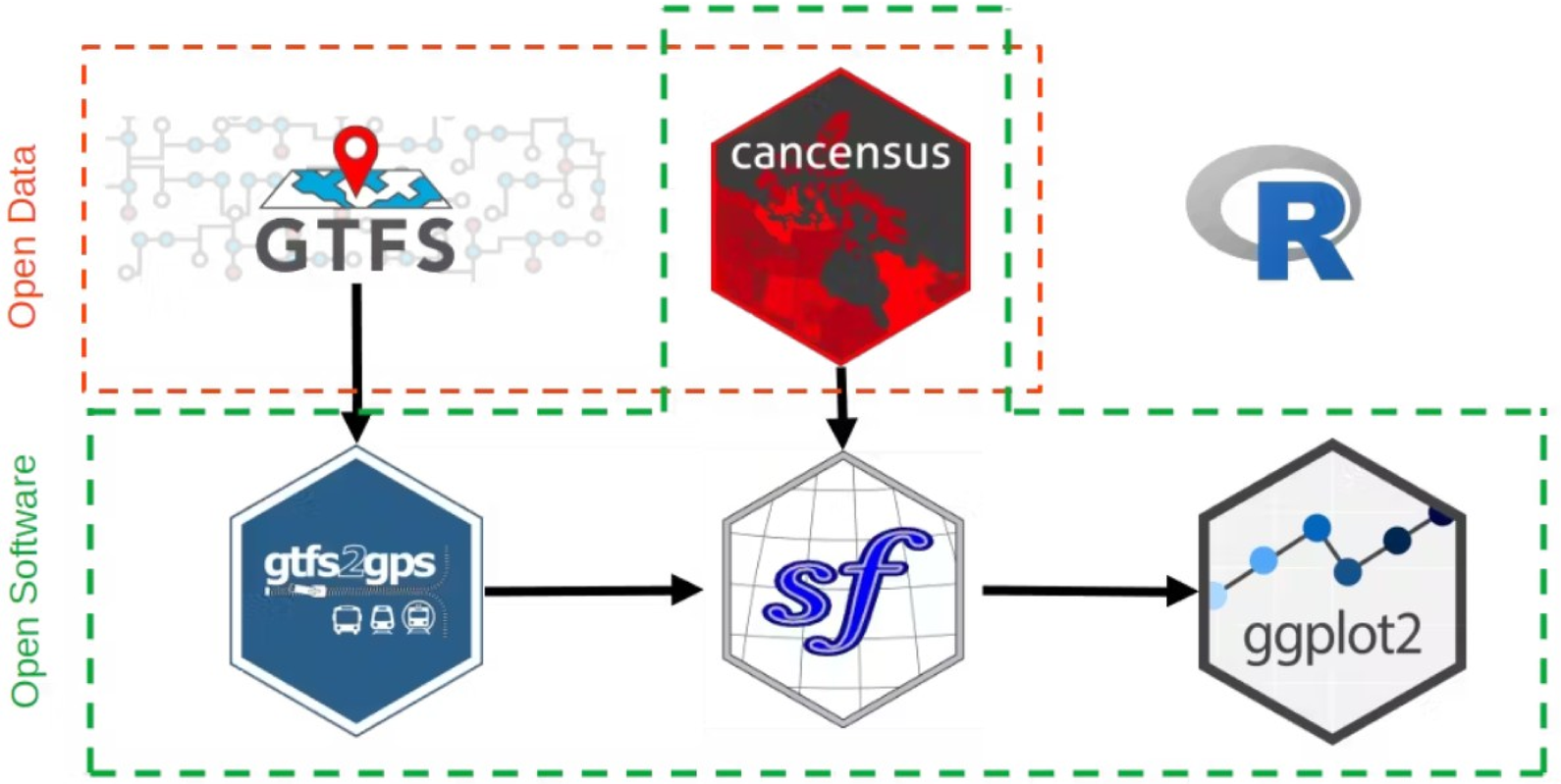
not even an undergraduate thesis!

equity in the provision of transit services

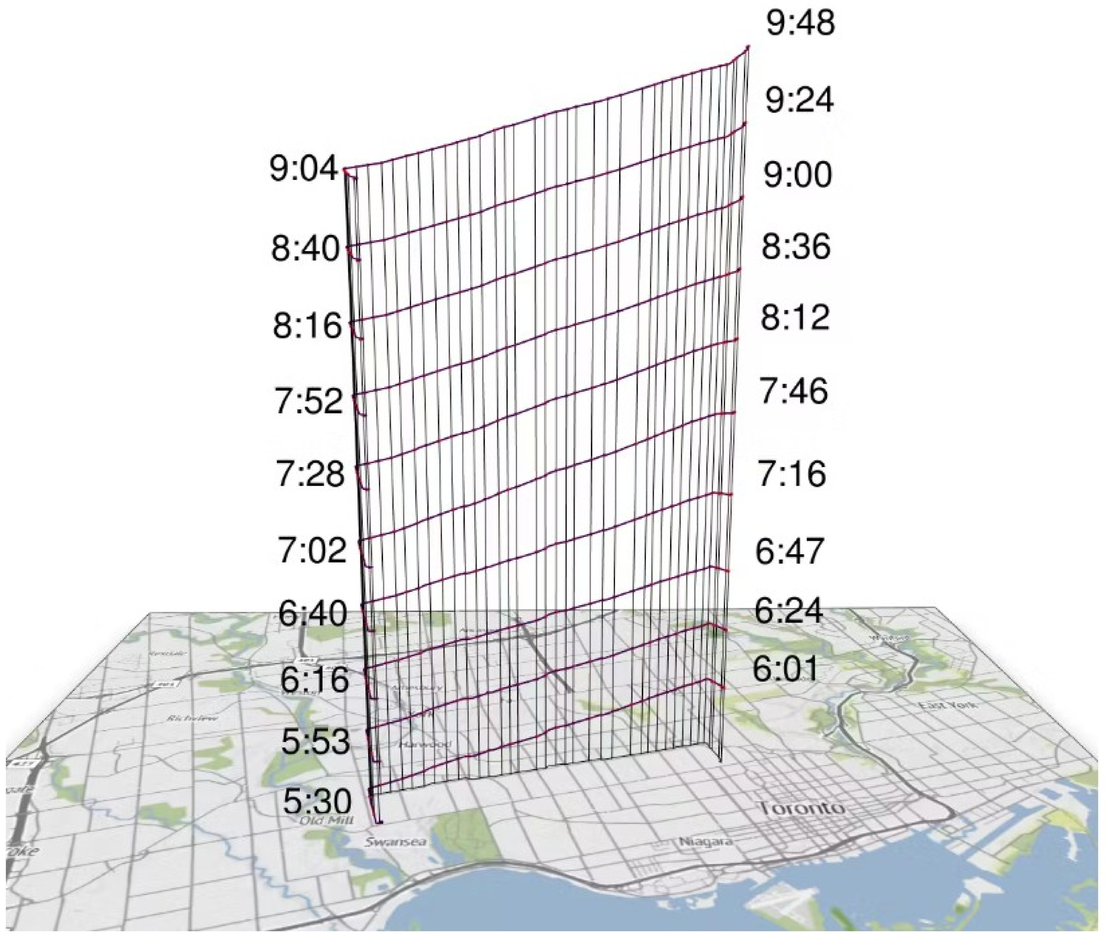
case of toronto



the open data: gtfs


Open Data
GTFS
cancensus
R
Open Software
gtfs2gps
sf
ggplot2

Workflow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6:47
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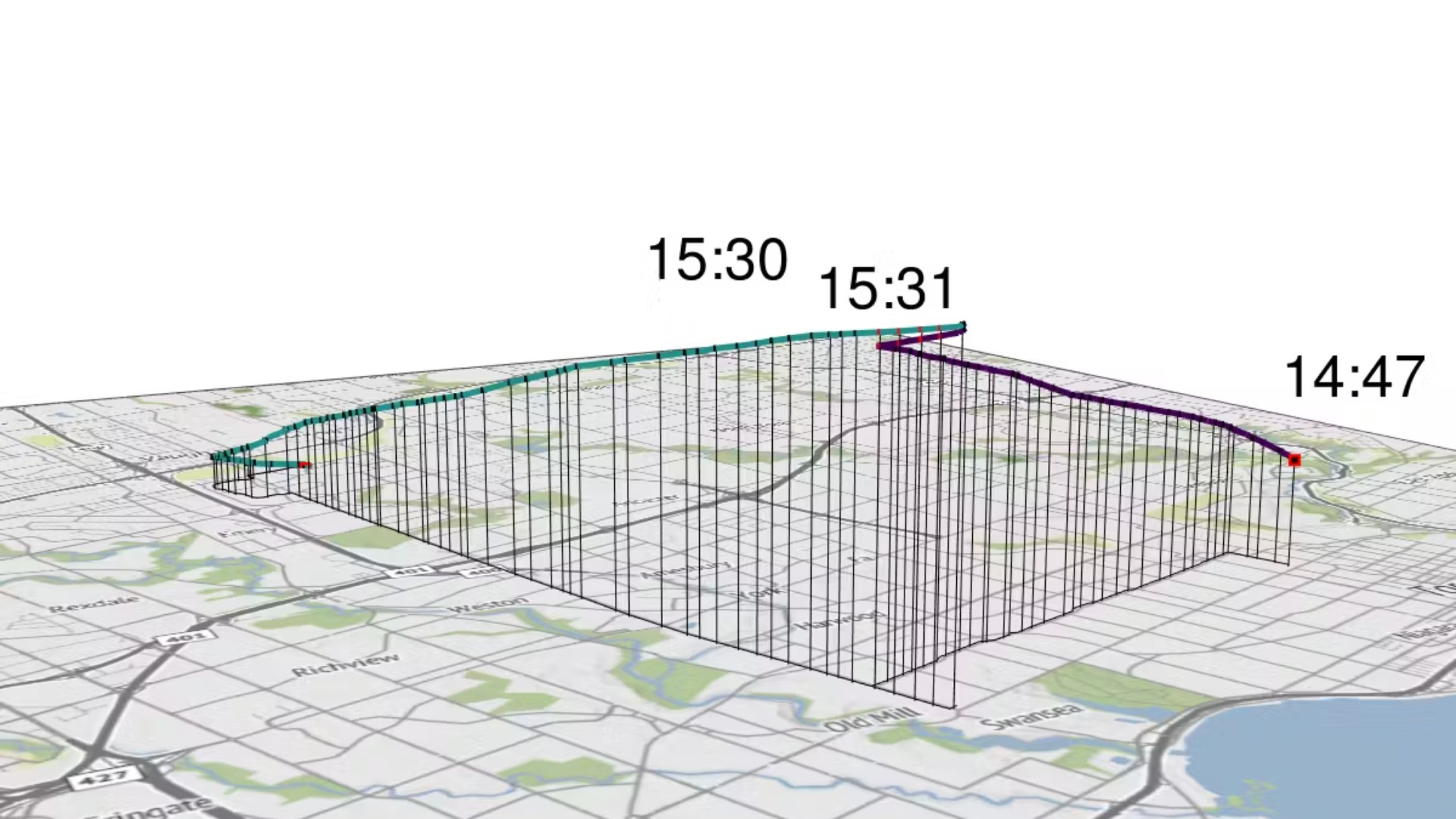
Toronto
Swansea
Niagara
East York

gtfs to gps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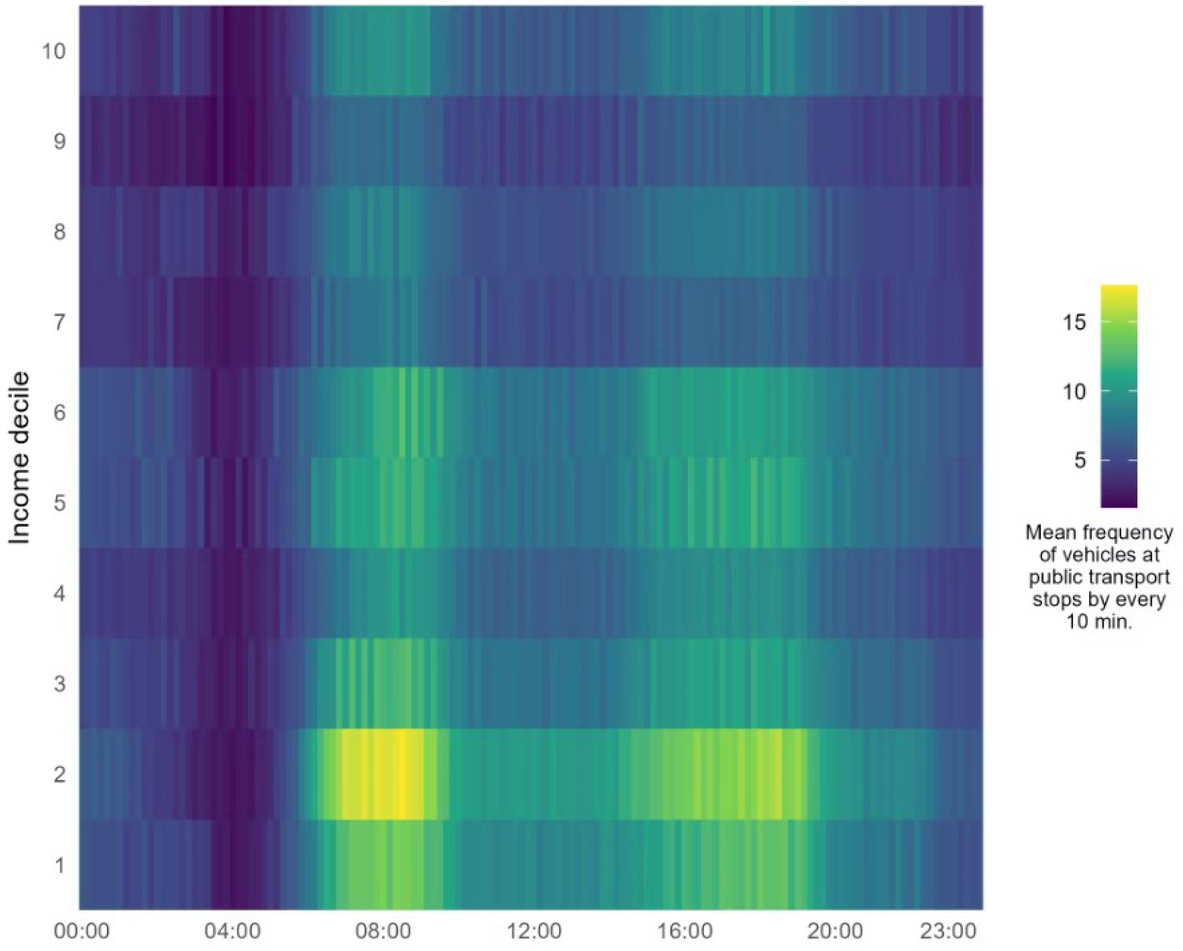
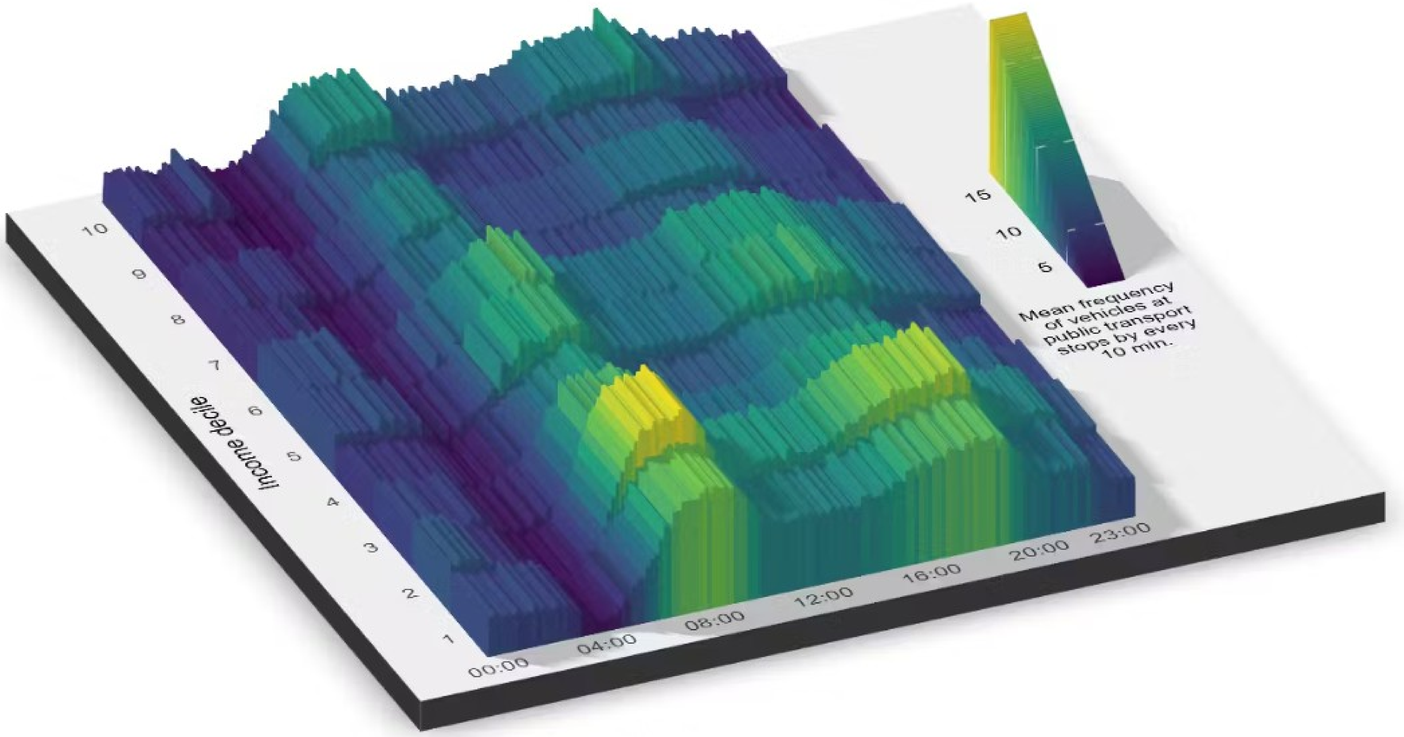
Swansea



the findings



the findings

big caveat

the importance of domain knowledge and experience

going OSS+D is an act of resistance

that can support science and the generation of knowledge at every level

from citizen science,

to graduate research,

to industrial, government & academic research

Use the QR code to access the repository

Thank you!