One of TIL6022's main goals is to prepare you to apply data pipelines to real-world TIL tasks, or to leave you well-qualified to start data modelling and quantitative research in TIL. The final project is intended to start you in these directions.

Project Types

- Application Project
    - Google Mobility Report
- Algorithmic Project
    - Optimization
- Theoretical Project
    - Car Following Model

Draft proposal submission

- RQ should include data processing, quantitative analysis and visualisation. If it's an application project type, it can be a societal problem or an exploratory analysis.

  Eg: Reveal the relationship between covid and mobility activity patterns in Netherlands is an exploratory RQ

- Provide the data source you need for answering the RQ, provide link to the data where applicable
- Provide information about the time scale and spatial scale you are looking at. Provide the geographical boundary of your study

Potential data sources

Here are sample data sets

- EUROPE data - https://ec.europa.eu/eurostat/web/transport/data/main-tables
- CBS data - https://opendata.cbs.nl/statline/portal.html?_la=en&_catalog=CBS
- Dutch open data - https://data.overheid.nl
- Google mobility report - https://www.google.com/covid19/mobility/
- COVID data - https://ourworldindata.org/coronavirus, https://data.rivm.nl/covid-19/
- Flight data - https://opensky-network.org
- Public transport data - https://travic.app/?z=12&x=260915.3&y=6251439.5&l=osm_standard&ol=
- Emission data - https://map.carbonspace.tech
- Freight data - 2021 Amazon Last Mile Routing Research Challenge Dataset - Registry of Open Data on AWS

Project Deliverables

This section contains the instructions for the different parts of your project.

Groups:

The project is done in groups of 3-5 people; teams are formed by students.

Submission:

We will be using Github for submission of all three parts of the final project. We'll announce when submissions are open for each part. You should submit on Github and Brightspace as a group: that is, for each part, please make one submission for your entire project group and mention your team members. Provide a link to the repository as the submission for the 3 deliverables in Brightspace. Look at Project_template.ipynb file for the template of the main notebook.

Evaluation:

- Research question – requires data modeling and quantitative research in TIL & data check (10%)
- Coding/Logic - [code blocks] written logic, code description (30%)
- Narrative - [whole project] - (30%)
- Code Readability (20%)
- Technical quality & Significance (10%)

An extended rubric for the project will be provided next week!

Deliverables:

Format – Jupyter notebook (.ipynb), Corresponding pdf or html exports, should include title with authors and author contribution statement, introduction, details on dataset, approach, remaining work

- Proposal including objectives, question that you are trying to answer, intended data pipeline, datasets. **Formative feedback** during project hours.
- Midterm notebook– updated proposal and any results (visuals, concept data story). **Formative feedback** during project hours.
- Final notebook including motivation, data story (provide good examples), proposal notebook, analysis of results, insights, and discussion. **Summative feedback**.

Example Projects

2022 – Open-ended group projects (Same as this year)

- Influence of COVID on mobility in countries of different wealth category
- Effect of government regulations on the air traffic at Dutch airports in the last ten years
- Modeling, calibrating, and validating a car following model using an intelligent driver model
- Emission behavior in passenger cars and road freight vehicles
- Effect of Brexit on road freight logistics

2021 – Closed individual projects

- Influence of COVID19 and mobility patterns from 2021 version of the course

- https://panchamy.github.io/TopStudentProjects/2021/Roman%20Schuring.html
- https://panchamy.github.io/TopStudentProjects/2021/Govert%20van%20Loon.html
- https://panchamy.github.io/TopStudentProjects/2021/Rohit%20Ramlakhan.html