Leibniz Universität Hannover

Fakultät für Elektrotechnik und Informatik
Institut für Verteilte Systeme
Arbeitsgruppe Intelligente Systeme - Data Mining Group

Data Mining Lab

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Visualization Tool for Taxi-Pessenger Demand Prediction

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Introduction

Goals:

- Predict number of passengers in different locations
- Visualization of different categories of neighborhood
- Visualize frequently used routes, places

Datasets

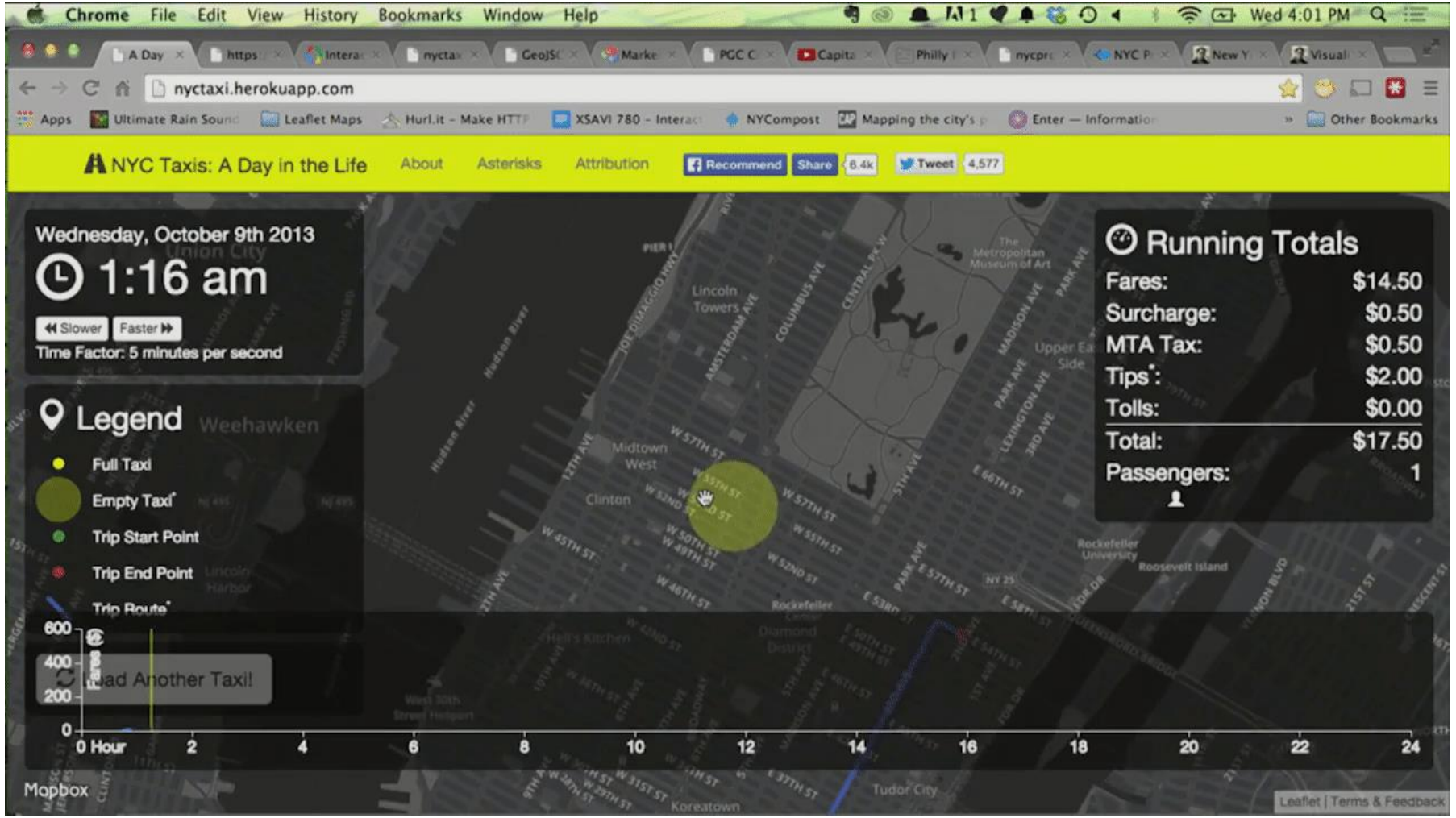
New York City: Dataset for each month a year of New York City-Taxi.

- **Attributes:** capturing pick-up and drop-off dates/times, pick-up and drop-off locations, trip distances, itemized fares, rate types, payment types, and driver-reported passenger counts.

Porto Portugal: Trajectories of all the 442 taxis running in the city of Porto, in Portugal.

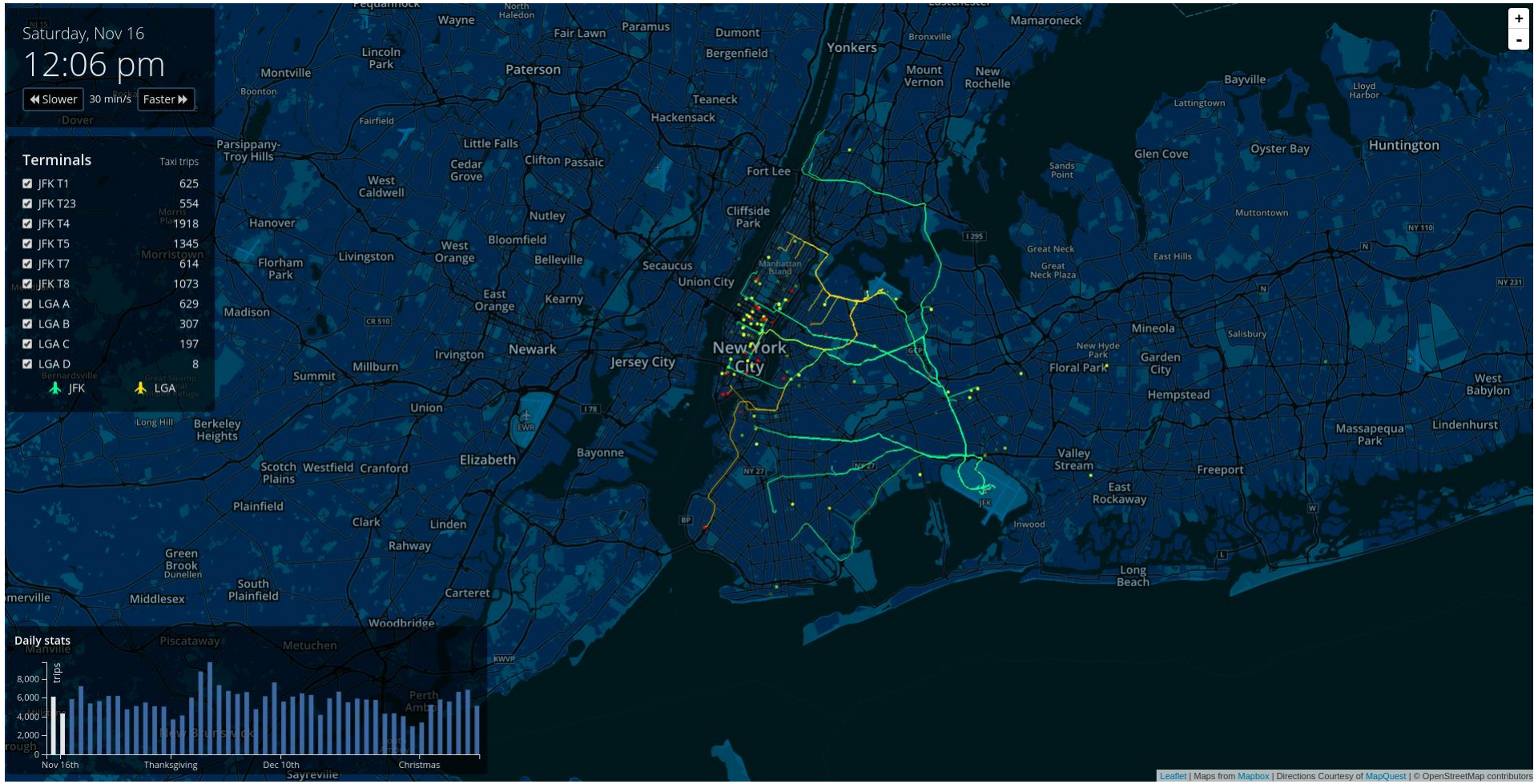
- **Attributes:** Trip_ID, Call_type, Origin_call, Origin_stand, Taxi_id, Timestamp, Daytype, Missing_data, Polyline

Examples



https://www.youtube.com/watch?v=Ann5A3L__v4

Examples



https://taxi.imagework.com/

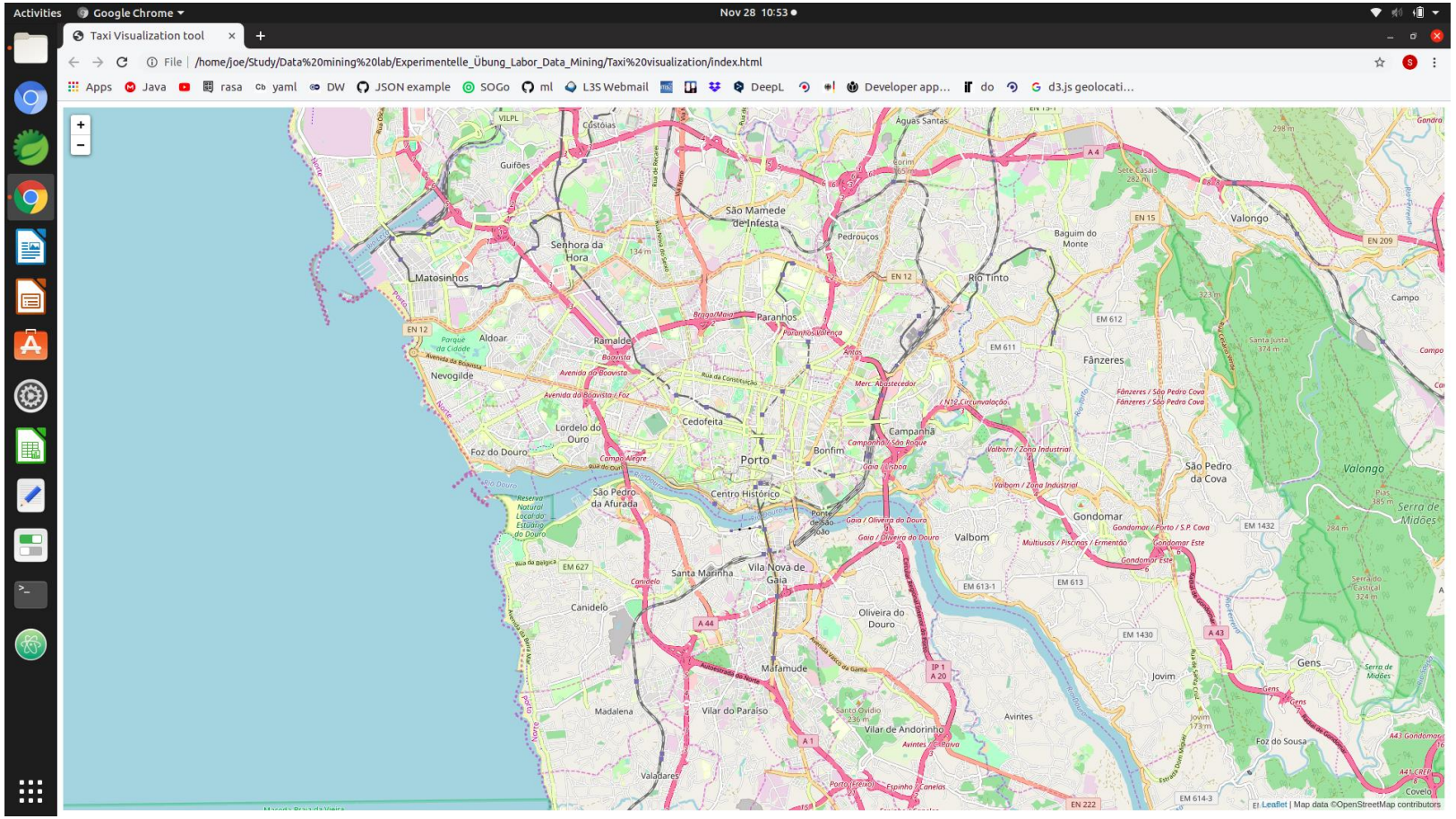
What we have done until today?

Back End

- Ran code & regenerated results of paper provided by Tai

Front End

- Developed Porto city map



Front End

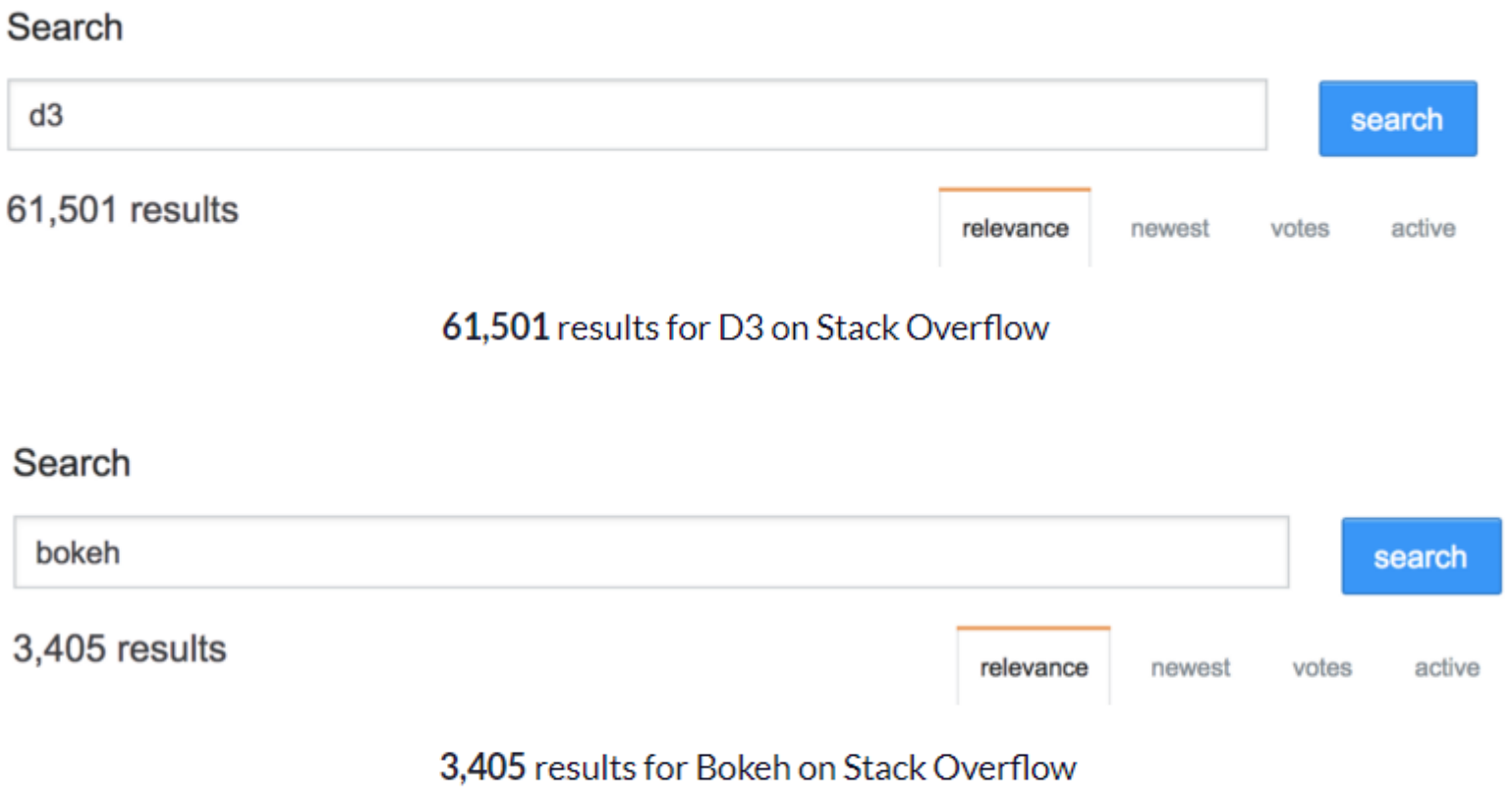
Tools

- D3.js
- Leaflet
- Mapbox

Other Libraries

- Bokeh (Python)

D3.js vs Bokeh



Back End

Tools

- Data analysis: Jupyter (Numpy, Pandas, etc)

Models

- Simple Moving Average
- Linear Regression
- Random Forest Regression
- XGBoost Regression
- LSTM
- Neighborhood-augmented LSTM

How we divided the task?

Back end

- Robin, Mehdi, Niko

Front end

- Shaheer

Meetings

- We frequently meet in library to present our work to each other
- Share ideas
- Show work progress
- Plan our next todos
- Meeting with Tai after every 2 weeks

That’s it

Thank you!

Questions?
Comments?