

Interactive visualization of trip decisions based on Floating Car Data

Floating Car Data (FCD) is an essential resource for traffic analysis and prediction. It is generated through GPS-equipped vehicles to track the position, the time, the speed, the angle and other status parameters. An amount of only 2% of tracked cars is already sufficient to produce a reliable image of a city's traffic situation.

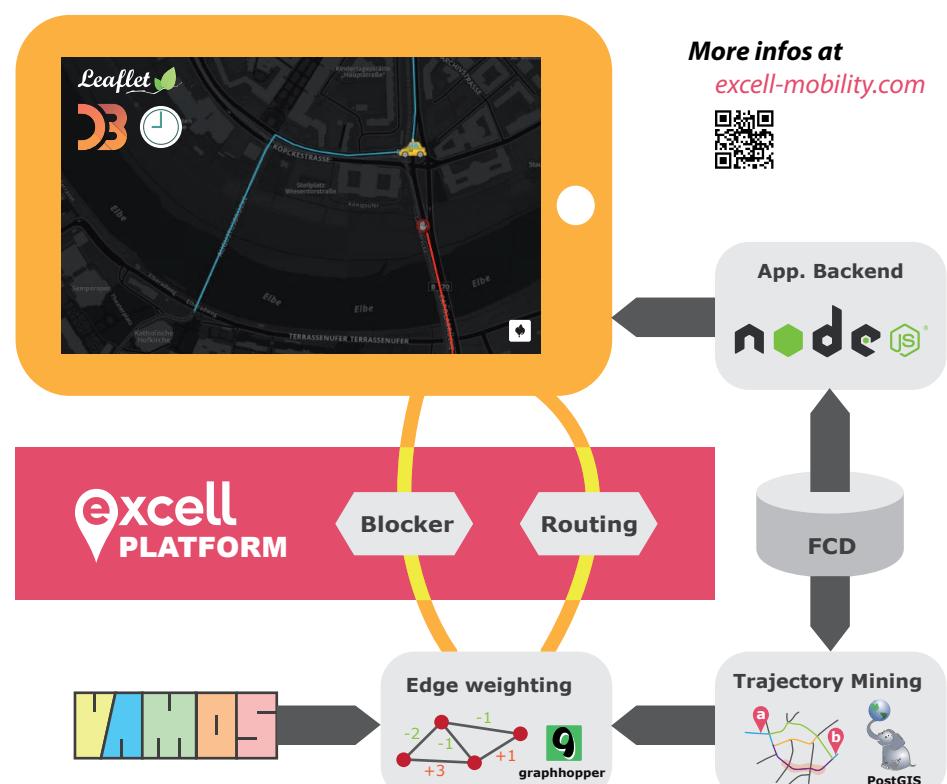
In the ExCELL research project FCD data sets of Dresden are used to analyse which roads are taken to get from one place to another. By comparing the travel duration, travel distance and the chosen roads with respect to different timestamps and traffic scenarios (rush hour, traffic jam, road blocking etc.) we are able to train a routing service to always predict the best route.

For this year's Long Night of Science we present an application which visualizes taxi trips in Dresden of 2014. The single trips are animated based on their start and end time. We aim to demonstrate which way a taxi would go if a road that lies on the route of the taxi gets blocked. Therefore, the user is able to block and unblock certain road elements by clicking on the map.

The app is calling web services provided by the ExCELL platform. The blocking event changes the edge weighting in the network of our routing service, which triggers the taxis to take an alternative route. In the future we plan to extend the app by displaying statistics as well as multiple trip recommendations.

HOW TO

- ⚙ Client is written in Java Script using libraries like Leaflet.js (map), D3.js (animation), Moment.js (time) and CartoDB (base map tiles)
- ⚙ Web server running on Node.js (loads small snippets of the FCD)
- ⚙ FCD data sets are in CSV format
- ⚙ RESTful routing & blocking service provided by the ExCELL platform
- ⚙ Routing based on Graphhopper
- ⚙ Traffic information provided by VAMOS, a system developed at the Technical University of Dresden
- ⚙ Trajectory Mining inside a PostGIS spatial database



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