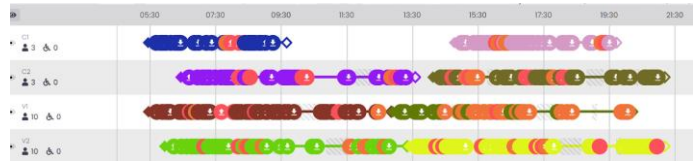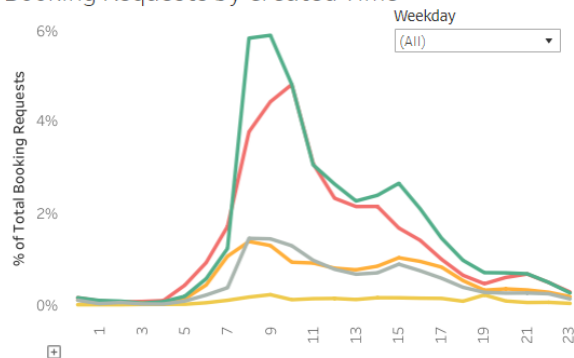# On-demand Driver Shift Allocation

Problem description

On-demand services are becoming increasingly prevalent and becoming part of business-as-usual for public transport agencies around the world. The design and planning of driver shift patterns is especially important to ensure riders are able to make the most of the on-demand service. On-demand technology providers are able to provide data around trip requests, allowing for greater insight into actual travel patterns to be generated. The purpose of this project is to design an automated methodology to generate driver shift patterns, guided by realised trip request patterns and driver requirements such as compliance break schedules and total working hours. Additional value can be gained by also incorporating electric vehicle battery capacity and recharge requirements.

Assignment

Trip request data, including time of day, for on-demand users across several active services around the world is available for this project. Accompanying driver regulations and fleets for those services will also be provided. This project will involve one or more of the following:

- Generating a script to allocate driver shifts across a service's operating hours
- Using rider request data to improve shift allocation to best serve riders
- Incorporating local legislation for driver safety into shift patterns
- Automatically optimise driver shifts if a vehicle is added or removed from the fleet
- Incorporate strategic break patterns to recharge electric vehicles

Candidate

You are interested in on-demand public transport, have good programming skills, in particular with Python, and have an affinity with managing large datasets.

Research group

Smart Public Transport Lab, in collaboration with Liftango, a global On-Demand Transit Technology Company ; Contact: Oded Cats o.cats@tudelft.nl