**We will evaluate:**

* The quality of your exploratory data analysis
* The coherence and structure of your ideas and code
* Your modeling approach, training, and validation methodology
* The applicability of your modeling technique to the real-life task you are trying to solve
* Your take on how the impact of the model should be evaluated in real-world interactions with our user base

Efficient supply allocation

The success of Bolt as a ride-hailing platform depends on a marketplace or efficient matching supply and demand in real-time. There are two sides in a ride-hailing marketplace: riders (demand) and drivers (supply). One of the challenges that we aim to solve is efficient supply allocation, so riders can always get a ride and drivers have stable earnings. Knowledge about how demand changes over time and space is crucial to comprehend supply dynamics.

**For this test task we expect you to:**

* Explore the data and suggest a solution to guide the drivers towards areas with higher expected demand at given time and location
* Build and document a baseline model for your solution
* Describe how you would design and deploy such a model
* Describe how to communicate model recommendations to drivers
* Think through and describe the design of the experiment that would validate your solution for live operations taking into account marketplace specifics

The goal of the task is to understand your strengths in the data science fundamentals and product thinking.

##### **Data for the task:**

The source data is approximately 630000 rows of synthetic ride demand data which resembles the real-life situation in the city of Tallinn:

* *start\_time* - time when the order was made
* *start\_lat* - latitude of the order's pick-up point
* *start\_lng* - longitude of the order's pick-up point
* *end\_lat* - latitude of the order's destination point
* *end\_lng* - longitude of the order's destination point
* *ride\_value* - how much monetary value is in this particular ride

**Please do not spend more than 8 hours on this task.**

Please describe what additional data would you consider useful and cite the main references used in your solution, if any.

Solve the task in **Python** and present it in a rendered **Jupyter notebook exported as html** (please upload it on the link as zip file).If you have problems downloading or open attached robotex file, you can download it also [here](https://drive.google.com/drive/folders/1amTcqts4Xv0hUdw0kwbQbS1FsW5xbaYm?usp=sharing)

Please let me know if you have any questions, but we are eager to see your solution here and your creativity to solve this real life problem with the shared data.

**We are expecting your solution within 1 week,** but if you can not make it within a week, please inform me, **we may be able to extend the deadline.**

Enjoy and good luck on the journey!

Please submit here:

<https://app2.greenhouse.io/tests/97390b797f6e099dbfd515caa2a66b00?utm_medium=email&utm_source=TakeHomeTest>

Attachments:

* [robotex5.csv](https://grnhse-use1-prod-s2-ghr.s3.amazonaws.com/generic_attachments/attachments/540/838/500/original/robotex5.csv?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAVQGOLGY36AIC4MO3%2F20250214%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250214T112647Z&X-Amz-Expires=604800&X-Amz-SignedHeaders=host&X-Amz-Signature=c4cb35c6622ef49837f67fc1ae832a5acbfc8f1da6fbd0bf711ee3e1e0915680)