

TaskRabbit Take Home Assignment (2-3 hours of work)

Welcome to the TaskRabbit Data Scientist Take Home Assignment. We appreciate all the time and effort you've invested thus far. The purpose of this assignment is to identify a core proficiency in the necessary technical and data skills to be successful in this role.

Question 1:

Some Context:

Clients arriving on the platform fill-out a task creation form describing tasks to be done. TaskRabbit's ranking algorithm generates an ordered list of available Taskers, represented by a `tasker_id`. (It may be helpful to create a task in the app for more context).

For this exercise, a sample data file is provided which contains information about a client's task search (represented by a `funnel_search_id`) . A "funnel_search_id" can be more clearly defined as an ID that represents a search instance that produced a group of Taskers from which the Client can choose to book given their search criteria.

The columns are defined as follows:

Column Name	Description
<code>funnel_search_id</code>	unique identifier for this recommendation/instance
<code>timestamp</code>	time of the search
<code>tasker_id</code>	unique identifier for the Tasker displayed as a result of the search
<code>position</code>	the position of the Tasker in the recommendation set, 1 - first, 2 - second, etc.
<code>hourly_rate</code>	the hourly rate for the Tasker when they were shown
<code>num_completed_tasks</code>	the number of Tasks the Tasker had completed in that category, when they were shown
<code>hired</code>	Was the Tasker hired or not? Only one tasker out of a set of recommendations can be hired
<code>category</code>	the category of work the Client needs help with

Task: Conduct a brief EDA on the data and build a predictive model.

Deliverable: Jupyter notebook, PDF or LaTeX of your EDA and Model

Notes and constraints

- Make sure the submission has your code, relevant plots, etc
- Make sure your model selection is supported, or suggested by your EDA
- Document any assumptions you've made
- Include a brief write-up/interpretation of your results
- Don't spend too much time on this task, we are looking for basic proficiency and familiarity, not for complex models.
- Include some metric for measuring performance for your predictive model
- Don't worry about hyper-parameter tuning, accuracy, etc

Question 2: Open Ended

Design of Experiment

Consider you want to design an experiment around a new feature in TaskRabbit in order to test the impact on job conversion. The nature of the feature is not important, just the measurement of the impact. In this question develop a brief testing plan that will be submitted to the Product Manager. Please review/consider the following as you design your experiment:

Constraints:

1. Randomization cannot be guaranteed in the deployment of this feature

Notes:

- The final deliverable should be understandable by a non-tech audience
- Document any assumptions you make about the data available (i.e. traffic size, etc), access to external testing tools, engineering resources, etc
- Feel free to make and document any assumptions regarding the definition of "job conversion" as it pertains to your testing plan
- Try to add detail around your testing plan that justifies the model/strategy you've chosen

Deliverable: A brief testing plan to be delivered to the Product Manager