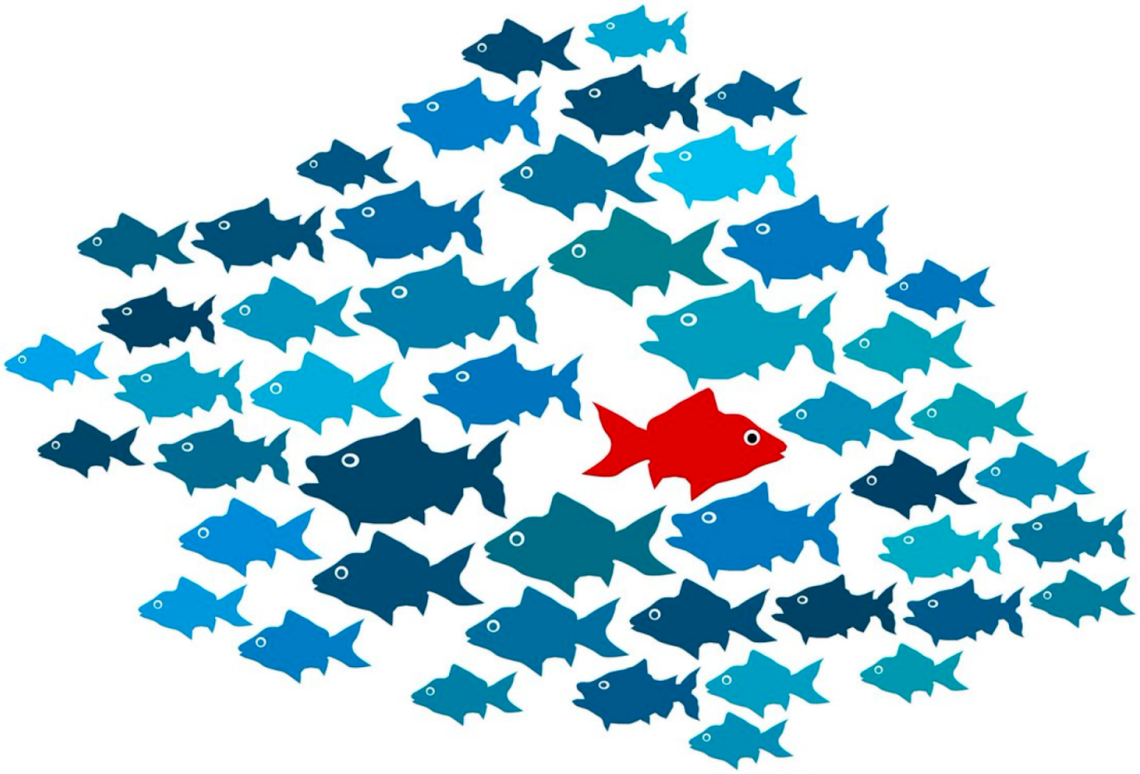
Moveworks Take Home Assignment For DS Roles

Instructions and Considerations

- Please spend no more than 4 hours running through the analytical questions printed below and submit your analysis using a Jupyter notebook.
- List your considerations and assumptions clearly in the notebook itself.
- Use matplotlib or any other Python library to draw supporting visuals in the notebook itself.
- The analysis should be able to run locally on your machine using Jupyter Notebook / Lab on your local machine (https://jupyter.org/) and please include a requirements.txt file on the python modules you use.
- We look forward to getting to know and learn about you, how you think, reason, approach, and explain, from your THA submission.

This data challenge is about anomaly detection. You are welcome to refresh your understanding of anomaly detection concepts and techniques from reading this blog post.

Download this data set (source), labeled as ambienttemperaturesystem_failure.csv, that has ambient temperature in an office setting.



- Question 1 - **Explore** - Explain the shape and characteristic of the data. Use any visuals you see fit to explain the shape of the data. Anything interesting you observe? Any other insights you discovered? What other types of exploratory analysis would you like to do?

- Question 2 - **Feature Engineering** - What features would you like to build to extend the data set? Extend your data set with these new features you identified in the previous step. Explore your newly transformed data now. Anything interesting you observe?

- Question 3 - **Anomaly Detection**. Please pick either a statistical, clustering, or classification approach to detect anomaly (for the sake of time, no need to do more than one approach), and briefly discuss the rationale and pros/cons of different approaches.

Hint: Two examples of unsupervised classification algorithms include Isolation Forest or One Class SVM.

- How will you present your findings?

Please do not share this with anyone else, we trust that you will make a sincere attempt to work on this assignment alone.