

Task:

Use the given dataset to train a Neural Network based Binary Classifier. The given dataset contains network data. Each row in the dataset represent one network connection/session, (between two computers, Lets say, the User and Server). There are feature columns that contain information about the session/connection and there is a label column as well.

What does label column contains:

Its value can be 0 or 1.

- 0 means the connection was normal (Connection request came from a legit/normal user)
- 1 means the connection was abnormal/cyber-attack (Connection request was suspicious and most likely, a cyber attack)

The classifier will predict whether the connection request was legit or attack. You can choose/create any Neural Network type (eg DNN, CNN, ... Any other) that you think will work well. The Binary classifier should have minimum 98% accuracy. Save the model file, once you are done with model.

This Assessment has four sections. Each section holds significance and is important in order to start the next section

1. Data Exploration and Feature Engineering
2. Train a Neural Network
3. Evaluate the Performance of Neural Network
4. Share your thoughts/insights

Training Model:

You can train the model anywhere you like. Kaggle, Colab or your local computer. You can use library of your choice, like tensorflow, pytorch etc.

TIP: Best way to do these type of tasks:

- Do a quick research about how others have done similar tasks
- Understand the available solutions, Which models have worked for them and Why ?
- Understand the nature of your dataset
- Experiment with more then one models and pick the best one. (Useful If enough time is available)

How to solve and submit:

- Solve this challenge in Jupyter notebook.
- After solving the challenge, zip the solution notebook and model file.
- Share the zip file (containing notebook and model file) through email at [careers@metrico.dev]. Do mention your full name and "Research Assistant" as position in the email.
- Do not send the dataset, along with the solution notebook.
- Make sure the notebook contains the results. (Like prints/plots/training log etc)

Deadline Saturday Afternoon, 9th November, 1:00 PM.

WHATEVER YOUR RESULT IS, PLEASE DO SUBMIT THE TEST. IT MATTERS!

In case of queries: Share your list of questions and a voice note on WhatsApp [0336 6336523].