2 0
2 3

Route.AI

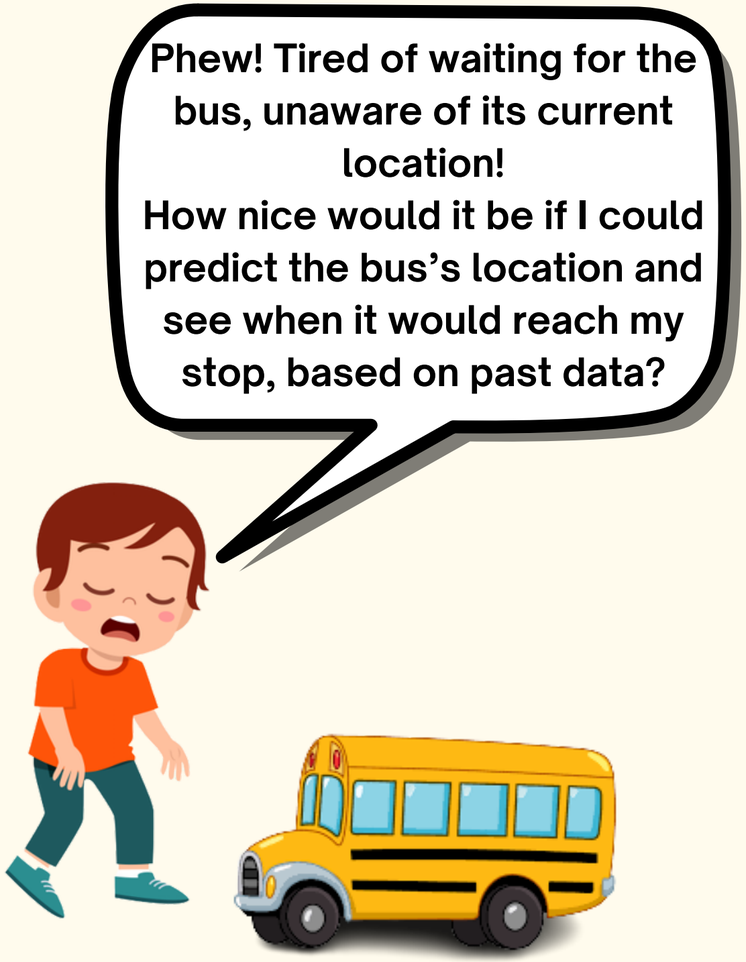
TEAM SIZE: 2 TO 4 MEMBERS
CODE: PYTHON

Hosted By:

Hardly Humans,
AI Club, IIT Dharwad

STAATEMENT

PROBLEM



- You will be given a training dataset which consists of bus data for 4 types of existing bus trips, namely square, circle, star, real_world.
  Click here to download dataset (Refer to dataset_README.md)

- Dataset for each of the above types of trips, is present in a csv file consisting of several attributes. Naming format is
  <type>_<train/test>.csv,
  which is self explanatory.

- Your task is to train a model for all 5 route types (You may choose to re-initialize weights before training another type of route but you must use the same architecture).

- What you need to submit is mentioned in the next slide.

PS: Real World 1, 2 may not follow a specific pattern like square, circle, etc.

FORMAT

SUBMISSION

- For each of the 5 test csv files namely, square_test, circle_test, star_test, real_1_test, real_2_test, follow steps 2-6. Steps 2-6 are illustrated for the square type in particular.
- For the provided square_test.csv containing 50 data points, your task is to predict the next 25 bus locations, based on the 50 data points. Put these 25 predictions in a csv file named <team_name>_square.csv.
- Now use the combined data (50 provided by us initially + 25 data points generated in step 1). Take the last 50 rows of this new dataset and predict the next 25 locations based on these. Append these 25 predictions to <team_name>_square.csv.
- Now you will have totally (50 [initial] + 25 [from step 2] + 25 [from step 3] = 100) data points.
- Now again use this data consisting of 100 data points, take the last 50 rows from this and predict the next 25 locations. Append these 25 predictions to <team_name>_square.csv.
- Repeat steps 2-5 in a cyclic manner until you generate 250 data points (excluding the initial 50 we provided you). (There must be 250 rows in <team_name>_square.csv.)

WHAT TO SUBMIT?

- Above generated **predictions** in 5 csv files.
  (Naming format given in the white box)
  We will be providing example submission files.
  The submission files must contain only **2 columns**.

<team_name>_square.csv
<team_name>_circle.csv
<team_name>_star.csv
<team_name>_real_1.csv
<team_name>_real_2.csv

- **Ipynb file** downloaded from colab which on running all cells, would generate the 5 csv files submitted above.

<team_name>_code.ipynb

- **Documentation** consisting of:
  a. Model Architecture
  b. Why this model?
  c. Working of code

<team_name>_report.pdf

CRITERIA

EVALUATION

- We have set different weightage for different types of trips. The details are mentioned below.

Square	Circle	Star	Real 1	Real 2
8.3333	8.3333	8.3333	37.5	37.5

- **Mean Square Error (MSE)** will be calculated for each csv file based on the predictions you submit and the true data available with us.

- Finally, we will use **Weighted Harmonic Mean of MSE's (WHM)** as the evaluation metric. Formula is given below.

$$WHM = \frac{100}{\frac{1}{MSE_{square}}(8.333) + \frac{1}{MSE_{circle}}(8.333) + \frac{1}{MSE_{star}}(8.333) + \frac{1}{MSE_{real1}}(37.5) + \frac{1}{MSE_{real2}}(37.5)}$$

- If your colab training file (which will be run by us) takes more than 30 mins, a penalty will be imposed.

- **The lower the WHM**, the better chance you have of winning!

Contact Us

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Thank you!
for participating!