TEKLRN

TENSORFLOW LEVEL 22

1. Classify structured data with feature columns

2. The Dataset
   - Import TensorFlow and other libraries
   - Use Pandas to create a dataframe
   - Create target variable
   - Split the dataframe into train, validation, and test

3. Create an input pipeline using tf.data
   - Understand the input pipeline
   - Demonstrate several types of feature columns
   - Numeric columns
   - Bucketized columns
   - Categorical columns
   - Embedding columns
   - Hashed feature columns
   - Crossed feature columns
   - Choose which columns to use

4. Create a feature layer

5. Create, compile, and train the model

6. Classification on imbalanced data
   - Setup

7. Data processing and exploration
   - Download the Kaggle Credit Card Fraud data set
   - Examine the class label imbalance
   - Clean, split and normalize the data
   - Look at the data distribution
   - Define the model and metrics
   - Understanding useful metrics

8. Baseline model

9. Build the model

10. Optional: Set the correct initial bias.

11. Checkpoint the initial weights

12. Confirm that the bias fix helps

13. Train the model

14. Check training history
    - Evaluate metrics
    - Evaluate metrics

15. Class weights

16. Check training history

17. Evaluate metrics

18. Plot the ROC

19. Oversampling
    - Oversample the minority class
    - Using NumPy
    - Using tf.data
    - Train on the oversampled data
    - Check training history
    - Re-train
    - Re-check training history

20. Evaluate metrics

21. Plot the ROC

22. Applying this tutorial to your problem