3.Data Preparation For Classifying Authentic and Synthetic Voices

As an ML Engineer ,I would instruct my team to follow the given steps:

Step 1:Data Cleansing

Address the imbalance between authentic and synthetic voice data by undersampling or oversampling the data.

Take equal number of samples from each class

Make sure the samples are clear and does not have any noise in them

Use filtering techniques such as low-pass filtering and high-pass filtering to reduce the noise in samples

Step 2:Feature Extraction

Extract relevant features from all the audio samples in the dataset

Normalize features across all the speakers to account for variations in voice characteristics

Step 3:Model Building

Divide the dataset into train,test and validation sets with the ratio of 70-20-10 or any other suitable ratio

Design a suitable CNN architecture for the above task

Define appropriate input,convolution,pooling and fully connected layers

Use dropout and batch normalization to prevent overfitting

Train the model on training dataset and validate its performance on validation set

Evaluate the model using metrics like accuracy and precision

By following these steps the data team can prepare the database for model training.