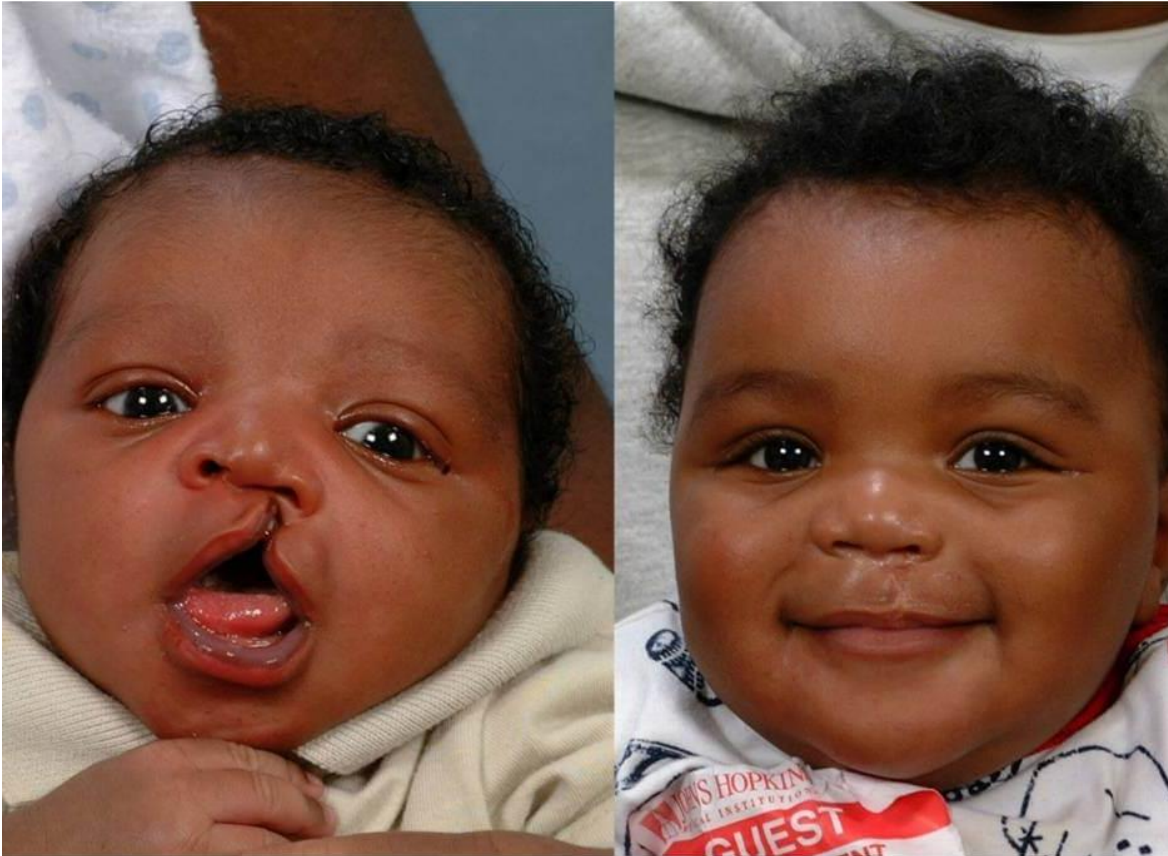


Automatic Assessment of Speech Disorders in Individuals with Cleft Lip and/or Palate to determine speech outcomes.

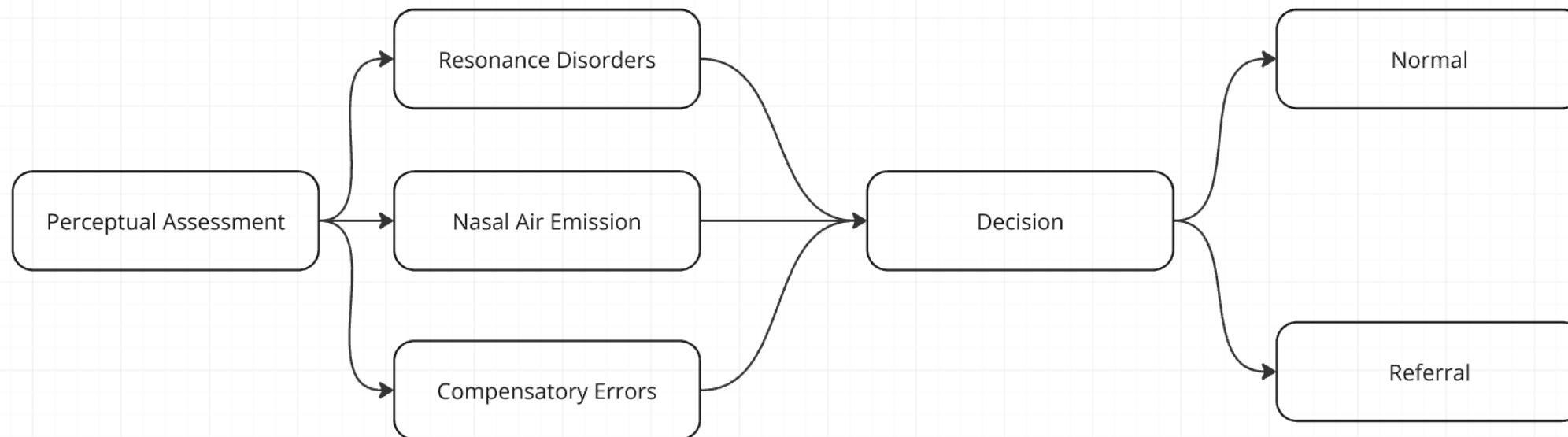
Joy Zialesi Atokple
PhD Candidate
Biomedical Data Science



Background of Study



Current Clinical Practice



Problem

- scarcity of qualified professionals
- subjectivity
- time-consuming
- scarcity and insufficient nature of cleft speech data



Goal

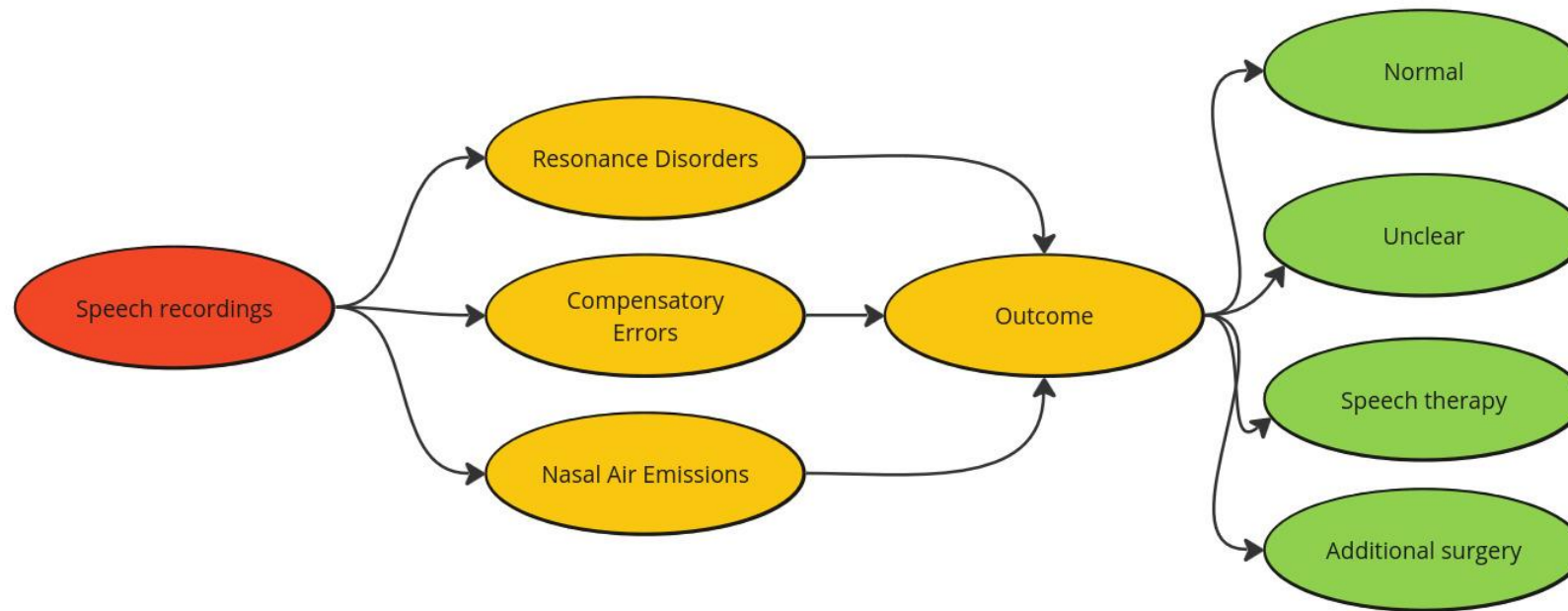


Automatic assessment tool for
detecting cleft speech disorders.

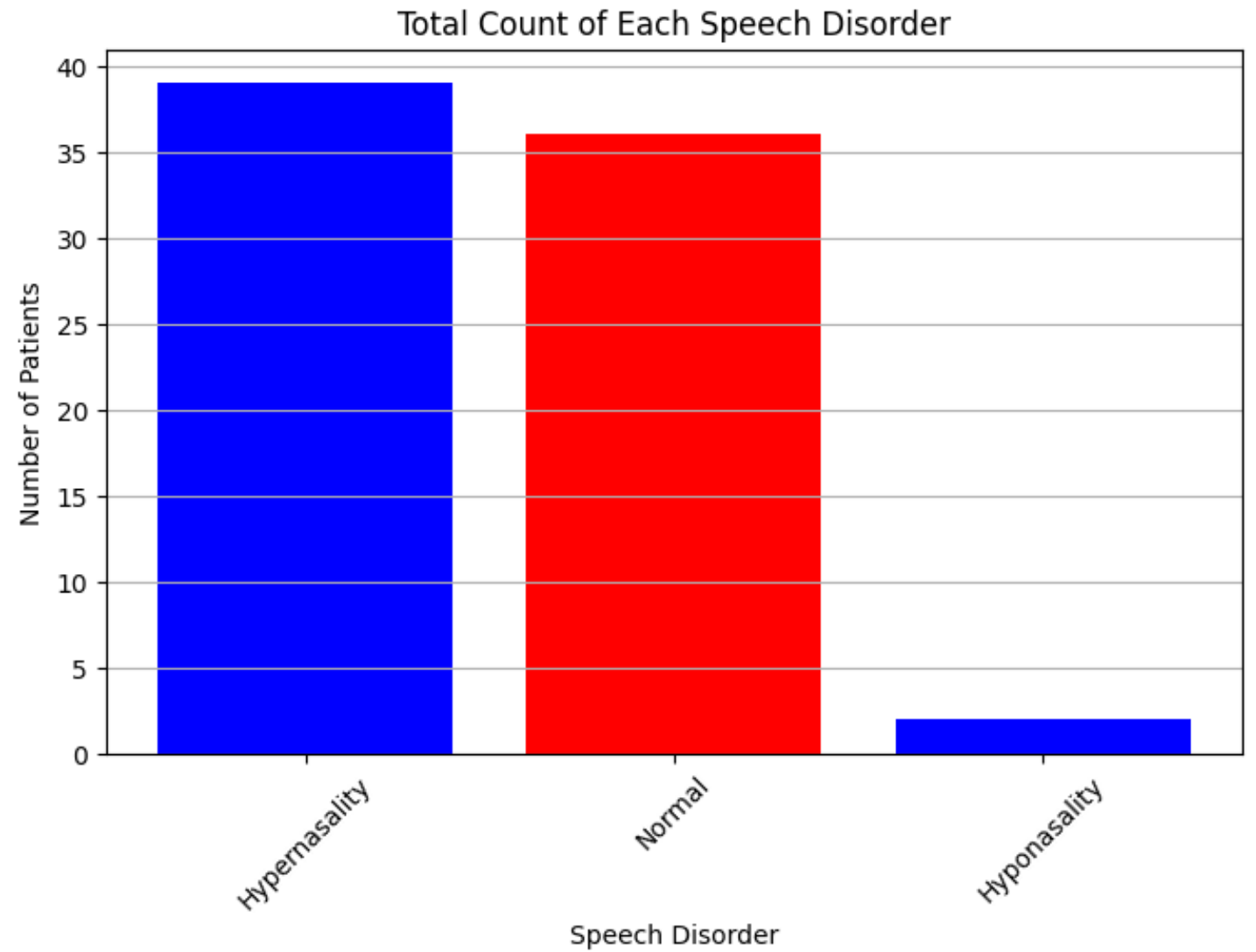


Synthetic data

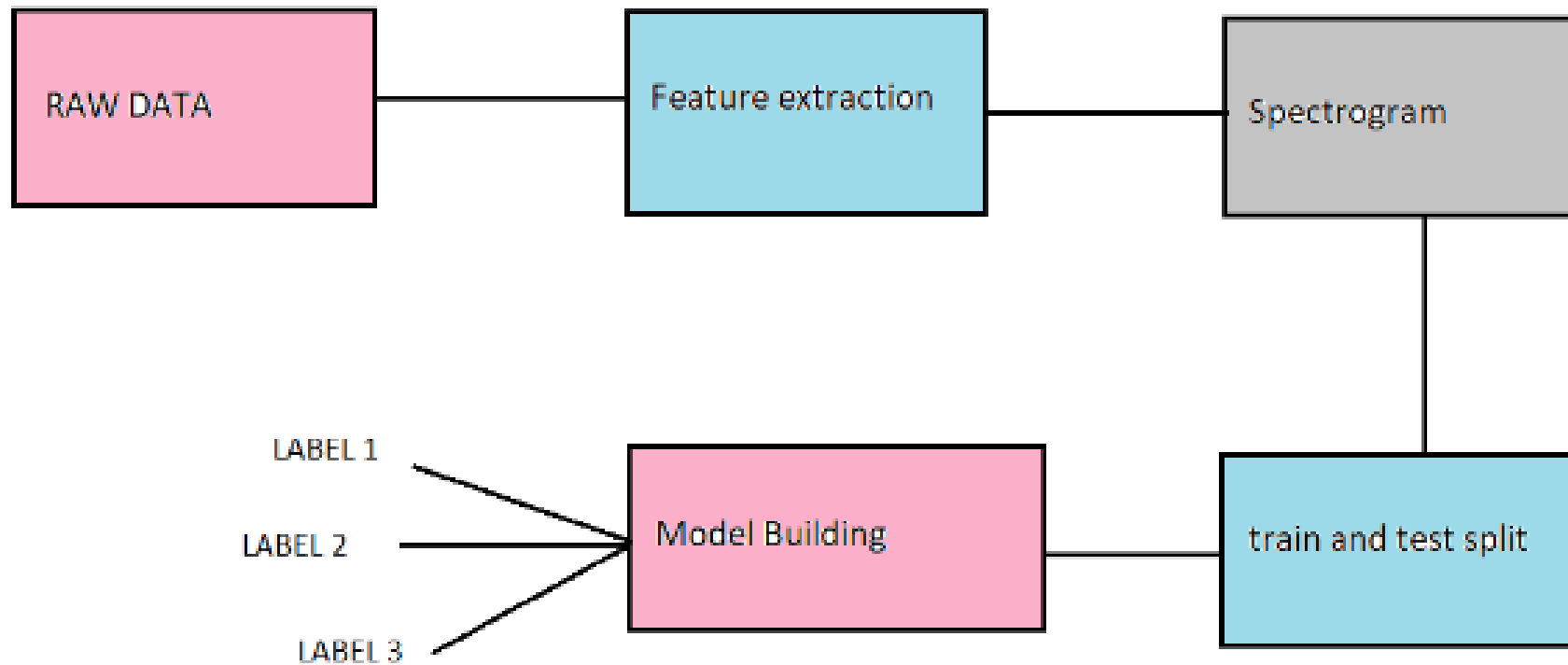
Framework



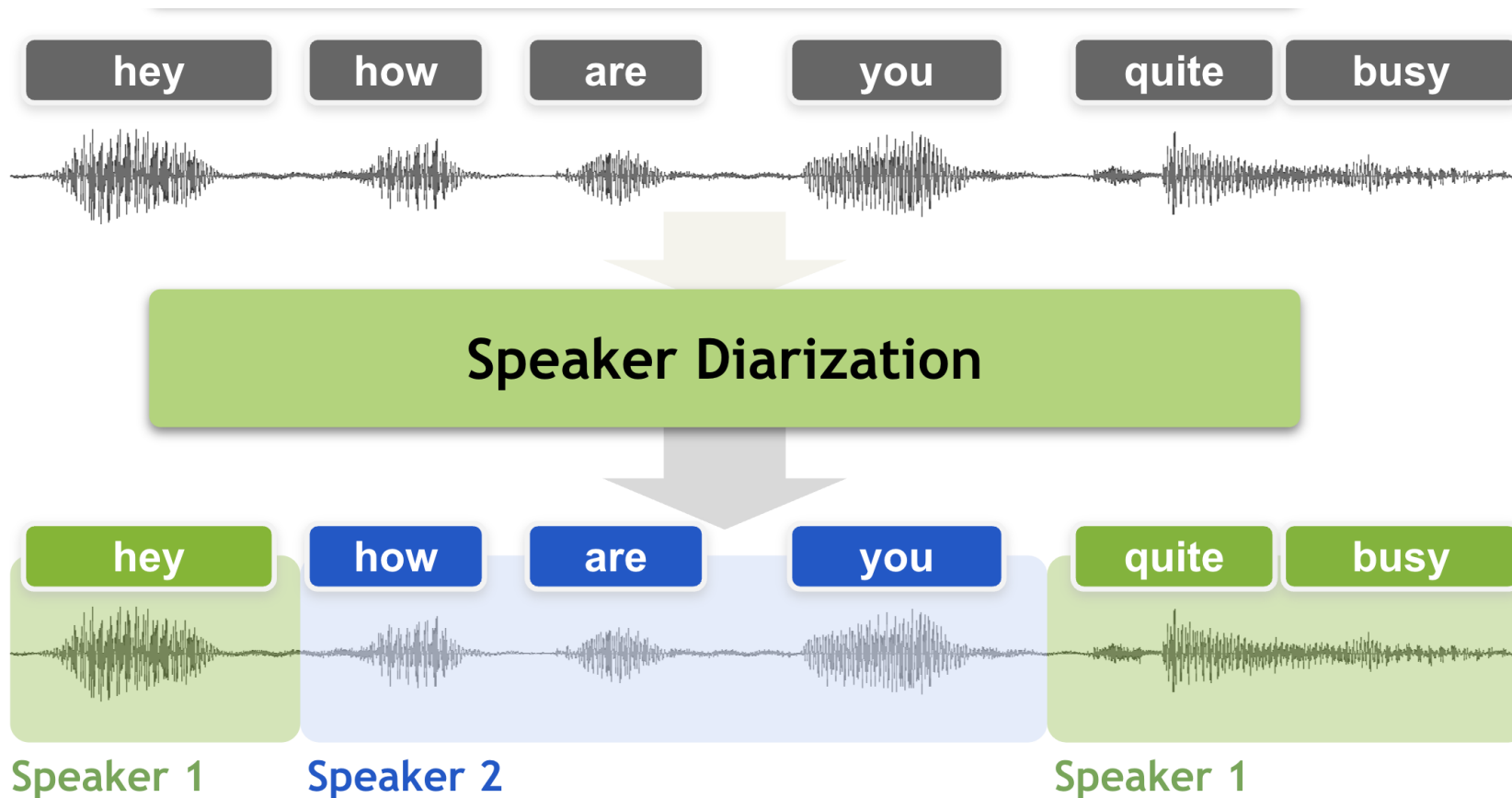
Data-SMILE TRAIN



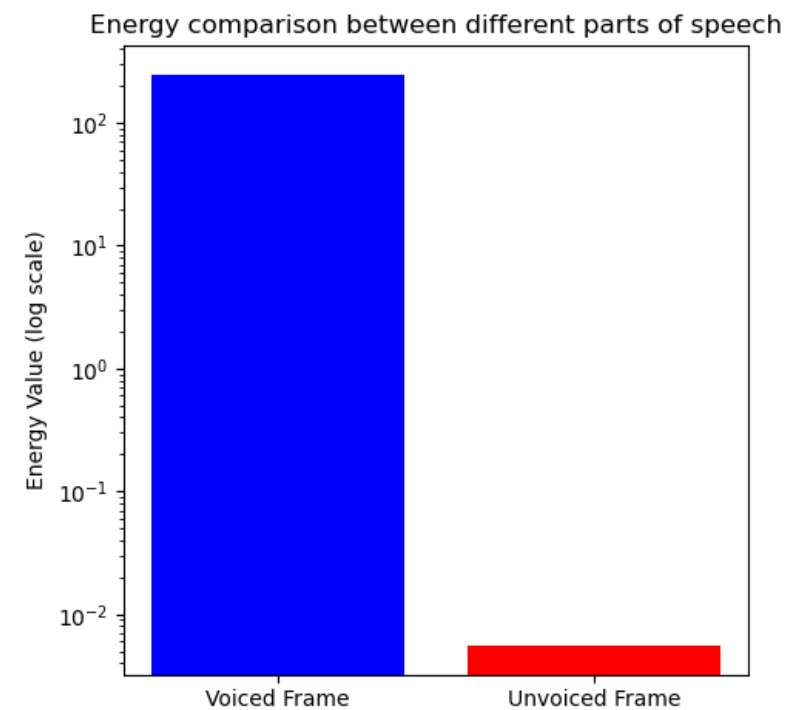
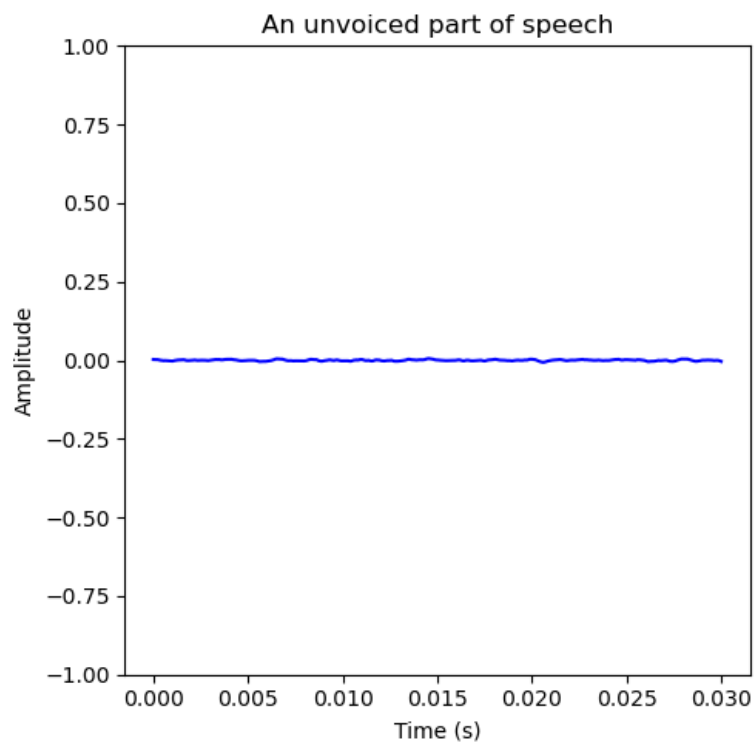
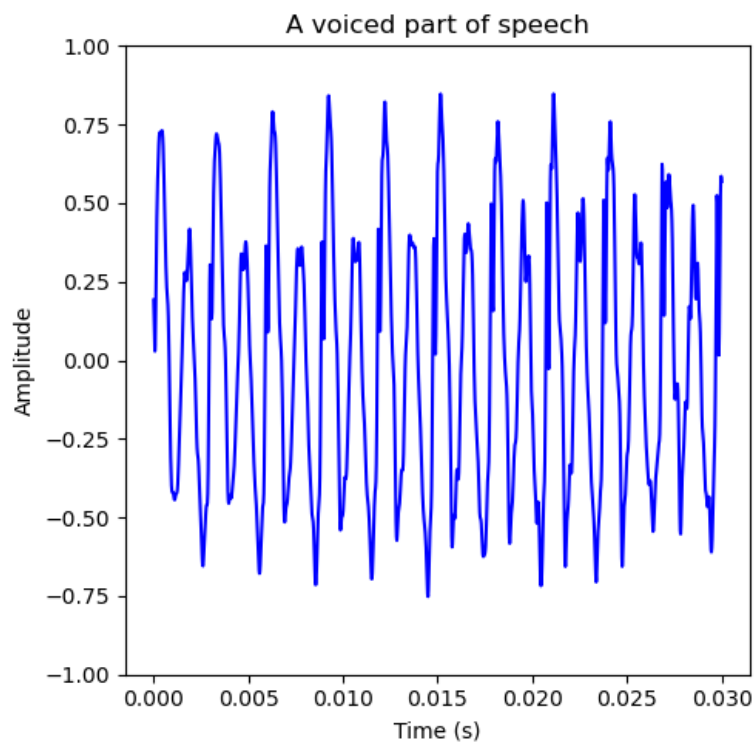
Methodology



Speaker Diarization



Voice Activity Detection





Synthetic Data Generation

- It is designed to mimic the statistical properties of real data, allowing for the creation of large datasets without the need for actual data collection

Our Idea



apple → orange



Normal Speech Features

Trained Model

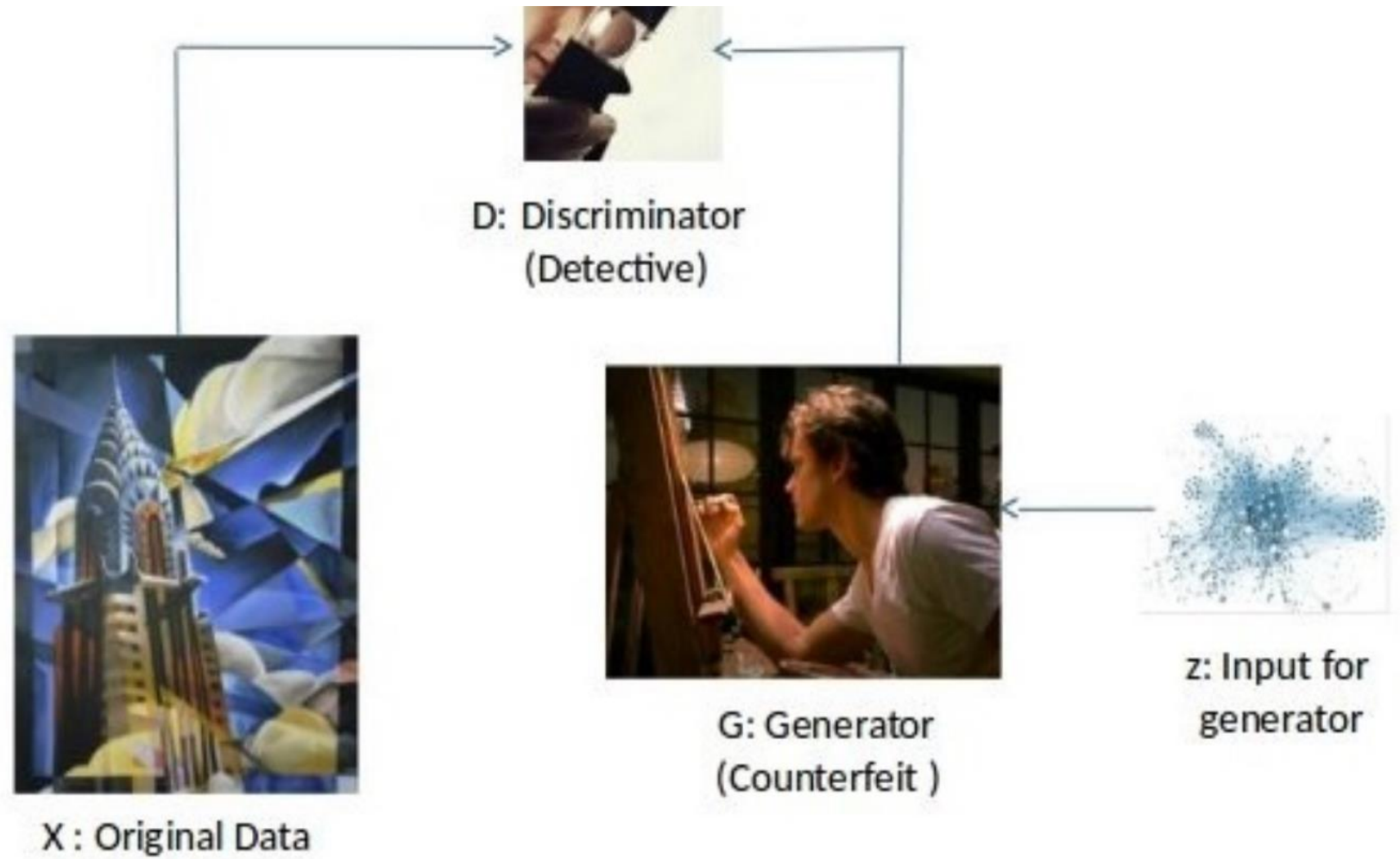
CLP Speech Features

CLP Speech Features

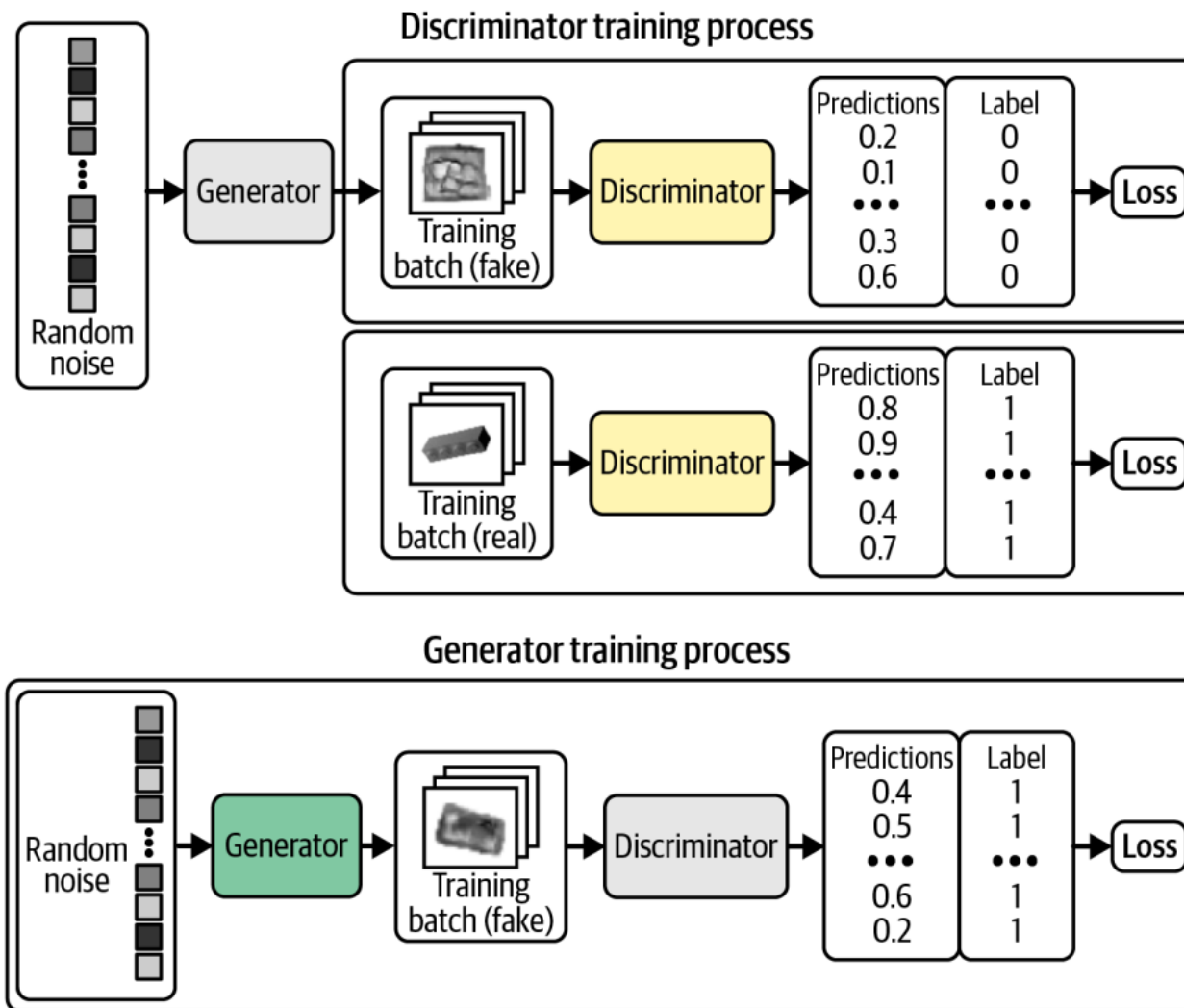
Trained Model

Normal Speech Features

The GAN Method



GAN Training Process



WAVEGAN

- 180 epochs
- Total run-time is 10160.29mins \approx 169hrs

[Generated Audio](#)



**Thank
You**

