## NSF REU SenSIP

## REU Project: Machine Learning for Breathing Pathology Detection with Emphasis on Bronchiectasis

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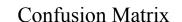


Kaggle Respiratory Audio Databases with 920 samples

Using spectral estimation and convolutional neural 0

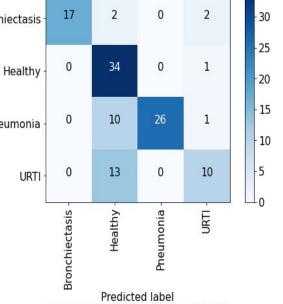
networks

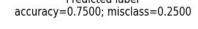
- .Bronchiectasis Implementing VGG-13 deep learning model for detection
- Challenge: data is heavily biased with COPD data
- Focus on detecting Bronchiectasis from Healthy patients Pneumonia
- Current accuracy = 75.0%.

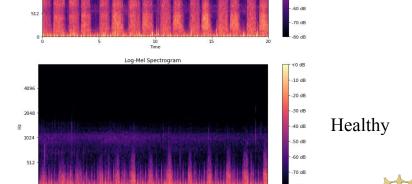


Activity

Remova







REU Site sponsored in part b

NSF Award 1659871

Confusion

Matrix

Respiratory Condition

COPD

Healthy

Spectrograms

Generate 8

Resize

**ML Training** 

and

Classification

Sensor Signal and Information Processing Center http://sensip.asu.edu



**Bronchiectasis**