MICROPHONE FINGERPRINTING

PIPELINE

1 VISION

What if it was possible to tell how a sound was recorded? Perhaps the news you saw in the morning was not really live during a riot like they said... but in a studio. In comes the magic of Machine Learning to help us find the answer!

2 CONCEPT

A powerful computer can potentially create a model of the sound profiles of various microphones. We can then use these profiles to determine if a piece of audio came from a specific microphone we tested.

Recording days, with 5 microphones
Day 1 - *training* sounds 6h (75%)
Day 2 - *testing* sounds 1h 30m (25%)

sound profile (noun)
how a specific headphone sounds based on which frequencies are more/less emphasized

3 SOLUTION

Let's employ popular and widely available tech that can deliver some results, and make sure that the experiment is accessible and beginner-friendly.

4 PROOF

With the help of the Python programming language and its vast array of machine learning libraries (scikit-learn, pytorch, and tensorflow, to name a few), a proof of concept can be made on a small scale to test our hypothesis.

5 TEST

We retrain our model on all of the collected data and perform some tests. Does it work, or is this a lost cause? Tune in to find out!
https://github.com/victorazzam/mic

Infographic by Victor Azzam

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