Shazam

# Introduction

# Methods and Design Specification

## Data Collection and Preprocessing

## Fingerprinting

## Database

## Matching

# Experiment Setup

## 1. Recognition Accuracy as a Function of Recording Duration

## 2. Noise Resistance

## 3. Impact of Number of Fingerprints on Performance

# Results and Analysis

## 1. Recognition Accuracy as a Function of Recording Duration

Measure accuracy of recognition when the recording is 1s,2s,…,15s.

## 2. Noise Resistance

Choose recording duration based off results from experiment 1. Then measure recognition accuracy when more and more noise is added to the original samples.

## 3. Impact of Number of Fingerprints on Performance

For this experiment we choose a recording duration length where the recognition accuracy is not very high. This way, we can measure the change in accuracy when all we change is a set of parameters which increase the number of fingerprints. And we measure how much longer this takes to fingerprint/recognize.

# Discussion

Lots of parameters we chose by inspection.

# Future Work

Use a real database, like mySQL faster query time, and don’t have to fingerprint everytime you want to recognize could just have a session running

Machine learning model to tune parametes. Bandpass high,low parameter tunig, etc. fingerprinting parameters, window\_size, fan\_value, min amplitude, etc which all play a role in determining the number of fingerprints generated per song, to maximize accuracy o;ver a large eough dataset with songs from many genres. We just hard coded some values, but this could easily be tuned to maximize performance.

More time analyzing the trade-off of having more vs less fingerprints, and which hyperparameters can help improve certain weaknesses in our algorithm.