## Harvard Extension School E-63 Big Data Analytics

## 05/10/27

## Final Project Summary

## TensorFlow for Music Generation

## Gerardo Castaneda, Stephen Ford

## Problem Statement

## Build an easy to use web app that uses TensorFlow and neural networks to generate music.

## Data Set

## To generate music, we feed TensorFlow a large number of songs encoded using the MIDI format

## Technologies

## Web layer: HTML5, CSS3, Skeleton

## Web server: Apache 2.4.18

## Server: Ubuntu 16.04.2 LTS

## TensorFlow 1.1

## Python 2.7

## Sound synthesizer: Timidity++

## Cloud Hosting AWS

## Benefits

## Creates unlimited songs in very short time . Better than other solutions on the web since use is very simple and songs are generated for different instruments

## Drawbacks

## Subject to the limitations of MIDI. Does not handle human voice, and sounds depend on what is available in the sound synthesizer. Current solution only handles one instrument at a time

## Results

## Live site: http://ec2-34-207-111-44.compute-1.amazonaws.com/tensorweb/index.html

## Double click on the icon below to listen to a sample song

## 

## Challenges

## Music manipulation libraries and tools for python have not kept up with the times

## Video URLs

## Short: <https://youtu.be/-3Ay7-5WHa0>

Long: <https://youtu.be/QSp_lL30NIg>