Music Generation w/ Artificial Intelligence

Kanye West

Vivek Sharath

Overview

- Music Generation w/ RNN
- The Louis Vuitton Don
- My Data
- Notebook
- Results
- Future Endeavours

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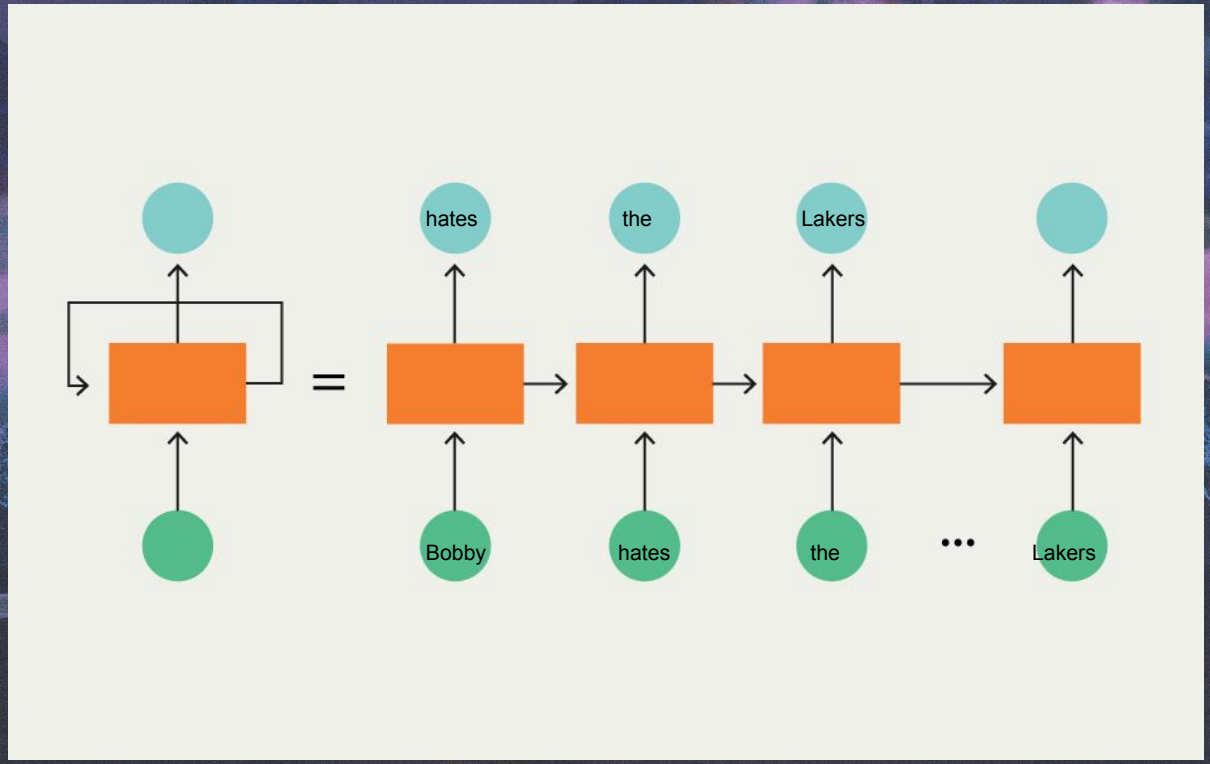
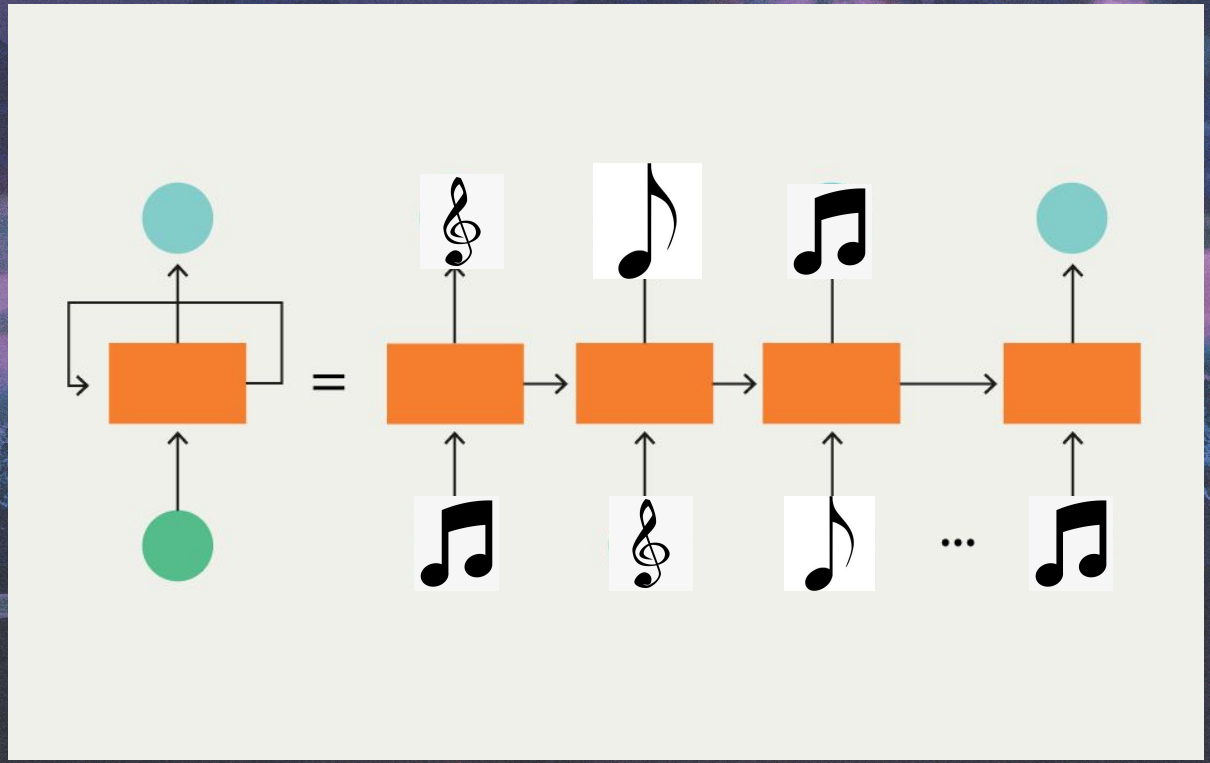
Music Generation with RNN



I HATE BEING BIPOLAR
ITS AWESOME
I HATE BEING BIPOLAR

Music Generation with RNN



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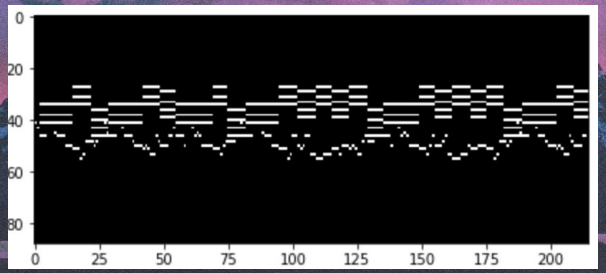
Music Generation with RNN

Music Generation with RNN

- **Midi Files**
  - Musical Instrument Digital Interface
  - Sequential Data

Artist Playing Piano



Raw Midi File

	t0	t1	...	t91	..	tn
0	1	1	1	1	1	1
1	0	0	0	0	0	0
2	0	0	0	0	0	0
..	0	0	0	0	0	0
69	1	1	1	1	1	1
..	0	0	0	0	0	0
88	0	1	0	0	1	0

88 x t_n Matrix
t_n = song length

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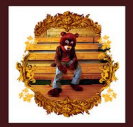
Kanye West Discography

2004



2005

2007

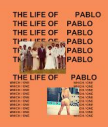
2008

2010

2011

2013

2016

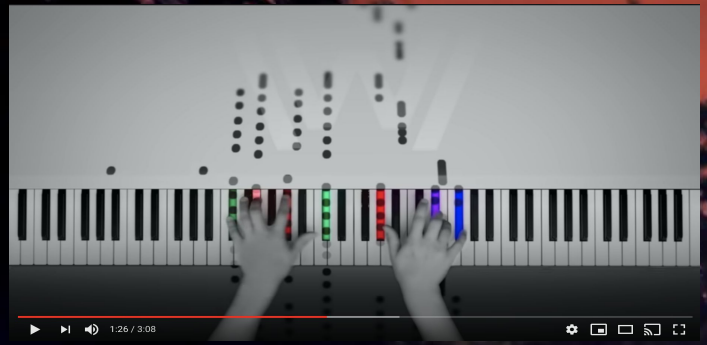


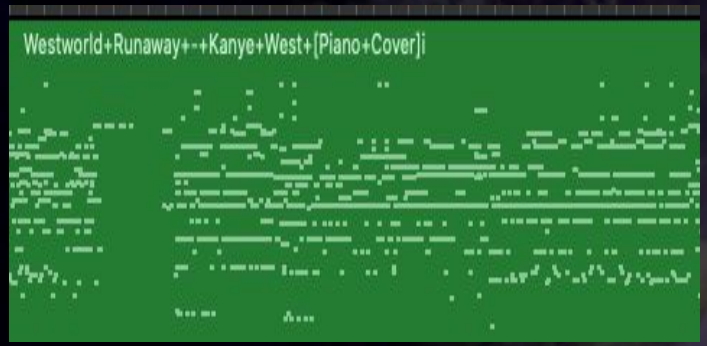
2018

2018

2019

Data





Online Audio to MIDI Converter

Like 23 Tweet Share 17

Use this tool to convert audio files such as **mp3, wav, ogg, m4a, and many other formats** to **MIDI**. Note: The quality of the resulting MIDI file depends largly on the input music. The MIDI file quality can range from good quality to unusable. But it is great fun to listen to the result in either way. If you are logged in you can opt-in to get notified by email once the conversion is finished.

The conversion is complete. You can now download the converted file:

- Download 1
- Download 2
- Convert another file

YTMP3

Westworld: Runaway - Kanye West [Piano Cover]

Download | Dropbox | Convert next

mp3 | mp4

CONVERT NOW | PLAY NOW

Advertising

YouTube to Mp3

Data

- Kanye+West+-+Power+4K+Piano+Cover+60fps.midi
- Kanye+West+-+Saint+Pablo+4K+Piano+Cover.midi
- Father Stretch My Hands - Kanye West - Piano.mp3.mid
- Kids+See+Ghosts+-+Reborn+4K+Piano+Cover+60fps.midi
- Kanye+West+-+Ghost+Town+ft.+Kid+Cudi+&+070+Shake+The+Theorist+Piano+Cover.midi
- Kanye - Alien Piano Cover - Kid Cudi Migos Young Thug (Yandhi).mp3.mid
- Kanye+West+ft.+Rihanna+-+All+Of+The+Lights+-+pi...o+tutorial+piano+lesson+[Synthesia+100+speed].midi
- Kanye+West+-+No+Mistakes+4K+Piano+Cover.midi
- Blame Game - Kanye West (Piano Solo).mp3.mid
- Kanye+West+-+Closed+On+Sunday+(HQ+piano+cover).midi
- The College Dropout - Old School Kanye West Piano Medley.mp3.mid
- Heartless - Kanye West (Piano Solo).mp3.mid
- Westworld+Runaway+-+Kanye+West+[Piano+Cover].midi
- highlights.midi
- Kanye+West+-+Flashing+Lights+(Piano+Cover).midi
- Kanye+West+-+Ultralight+Beam+The+Theorist+Piano+Cover.midi
- Kanye+West+-+Heard+'Em+Say+Piano+Cover.midi
- STRONGER+Kanye+West+on+piano.midi
- lostintheworld.midi

+

- reels_simple_chords_234.mid
- hpps_simple_chords_6.mid
- ashover_simple_chords_24.mid
- hpps_simple_chords_31.mid
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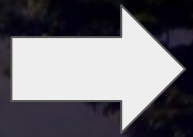
- jigs_simple_chords_122.mid
- ashover_simple_chords_1.mid



- Kanye
  - test 50%
  - train 25%
  - valid 25%

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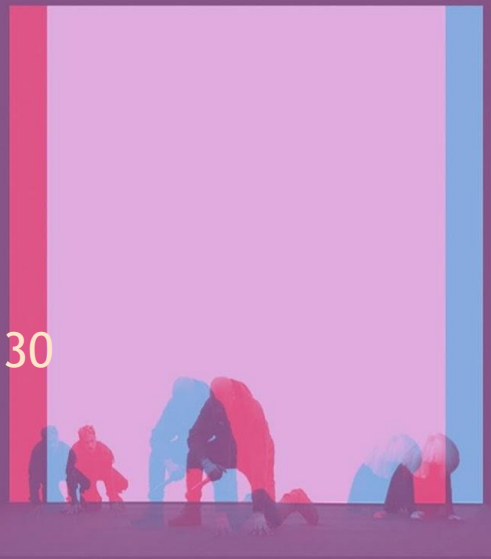
Results

Parameters

- **Transfer Learning**
  - Help | No Help
- **Epochs**
  - 1 | 7 | 15 | 20 | 25 | 30
- **RNN**
  - LSTM | GRU
- **Hidden Size**
  - 206 | 512 | 1024 | 2048
- **Clip**
  - 1 | 2 | 3 | 4
- **Dropout**
  - Alpha | Regular

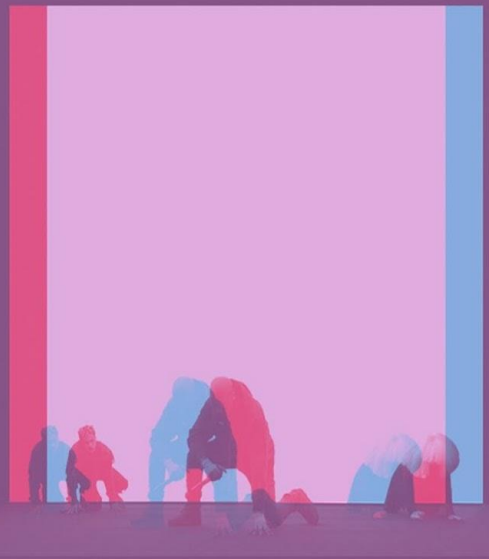


Insights

- **Transfer Learning**
  - Noticeable Improvement
- **Epochs**
  - Varying Results
- **RNN**
  - LSTM didn’t do well
- **Hidden Size**
  - 512 was Sweet Spot
- **Clip**
  - Had impact
- **Dropout**
  - Varying Results

Future Endeavours

- BEATSSSSSSS (demo)
- Improving Data Quality
- Transfer Learning
- Parameters



- Reducing Variability
- One Model per Album
- Improve understanding