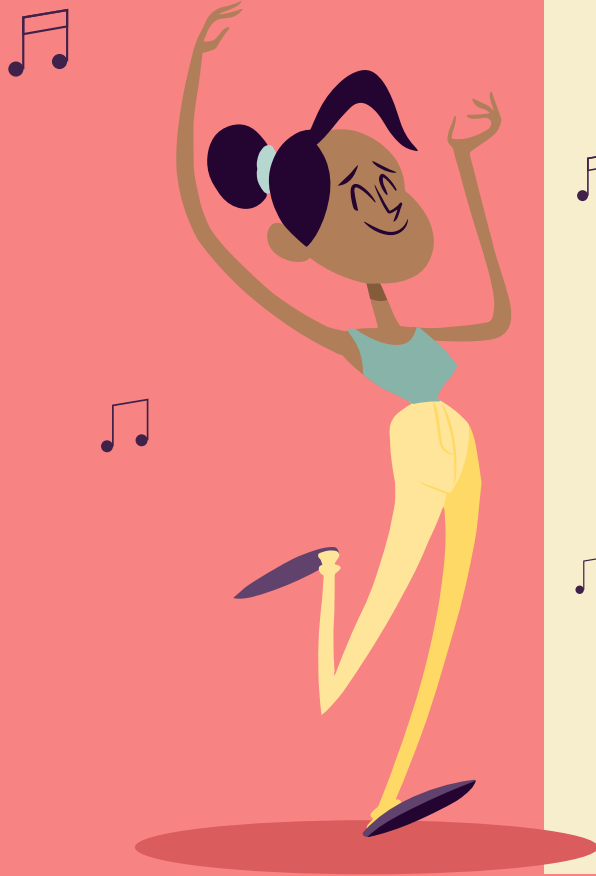


Deep jazz?

# MUSIC GENERATION





INTRODUCTION

01

TRAINING

02

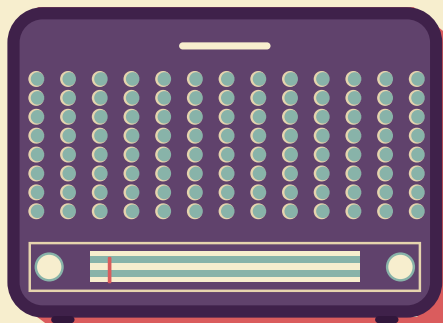
MODELING & METHOD

03

CONCLUSION & FUTURE IMPROVEMENTS

04

01



# INTRODUCTION

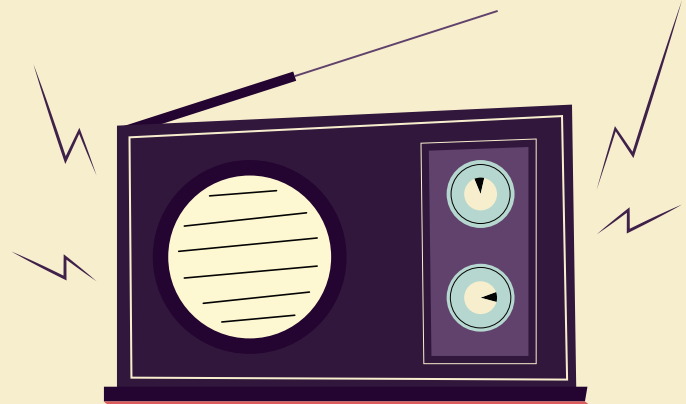
# INTRODUCTION

- Human creativity VS AI creativity
- Scraped over 100 MIDI files  
From [partnersinrhyme.com](https://partnersinrhyme.com)
- MIDI - sequence of notes, instruments, track structure, tempo, time signature
- Take 5 by Dave Brubeck Quartet
- Using LSTM RNN to generate new music



02

# MODELING & METHOD



## MODELING & METHOD

music21

- Python toolkit designed for music analysis, teaching, and generation
- Used to extract data from MIDI files



 TensorFlow

- Neural network API that runs on top of TensorFlow
- Allows for quick experimentation with deep neural networks

# MODELING & METHOD

Notes →

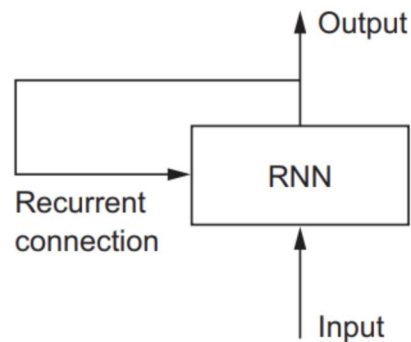
Piano

Chords →



The image shows a musical score for piano in 4/4 time, with a tempo of 120. The score is divided into two staves: the treble staff for notes and the bass staff for chords. Vertical red lines are drawn through the staves at regular intervals, representing time steps. The notes in the treble staff are mostly quarter notes, while the chords in the bass staff are mostly triads. The score is labeled 'Piano' and 'Notes' and 'Chords' with arrows pointing to the respective staves.

- Recurrent Neural Network (RNN)
  - Processes sequences
  - Output at each step is dependent on the previous step
- Long Short-Term Memory (LSTM)
  - Recognizes and encodes long-term patterns

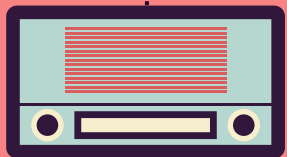


# MODELING & METHOD

TRAIN

Sequence length = 100

Offset = 0.5



GENERATE

Random starting point

Generated music contains  
500 notes



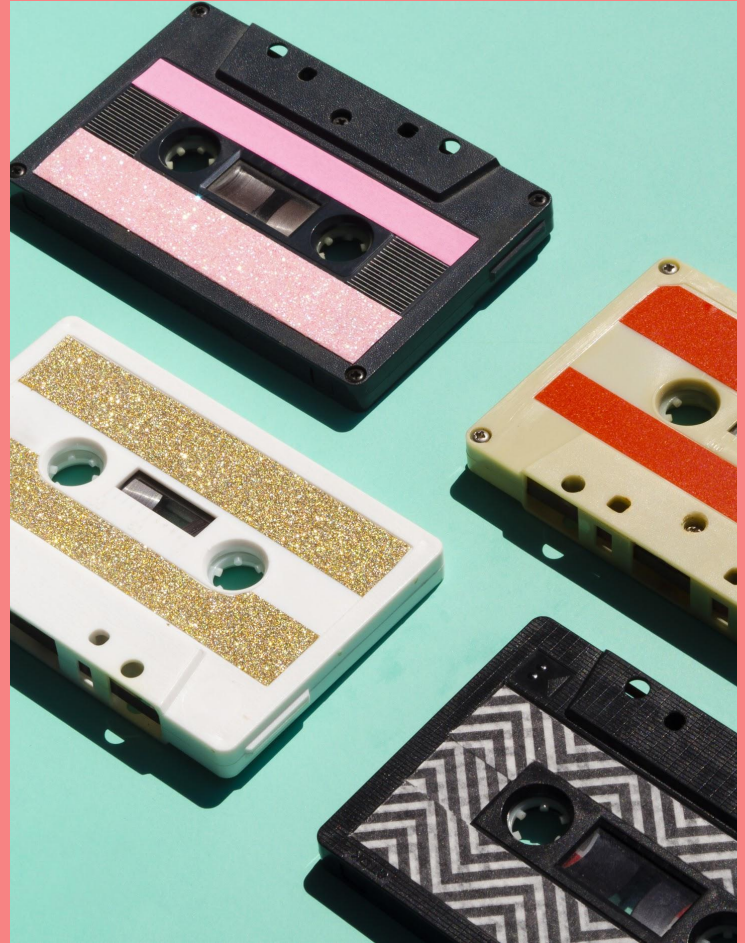
04



# RESULTS & CONCLUSION

# IMPLICATIONS OF AI IN MUSIC

- Better music recommendations
- Google's Magenta project, Flow Machines
- Collaborative future between artists and AI



# IMPLICATIONS OF AI IN MUSIC

Google's Magenta and Sony's Flow  
Machines

More compelling  
content and  
collaborative future



Better music  
recommendations;  
replaces manual  
input

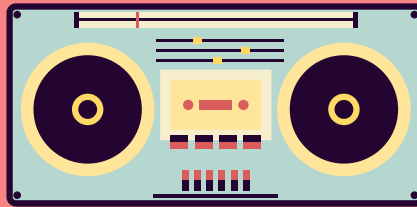


“When words fail. Music speaks.”

HANS CHRISTIAN ANDERSEN



THANK YOU!





# ANY QUESTIONS?

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