Music generation

T. Ardoin – M. Dufraiss – N. Lichtle – A. Riou – R. San Roman

25 Janvier 2019

Objectifs

Générer de la musique.

Dataset: Un ensemble de partition sous forme de fichiers MIDI.

Sortie Un fichier MIDI.

Midinet

- *MidiNet: A Convolutional Generative Adversarial Network for Symbolic-domain Music Generation*
  by Li-Chia Yang, Szu-Yu Chou, Yi-Hsuan Yang in 2017.
- Uses CNN for the generator instead of RNN;
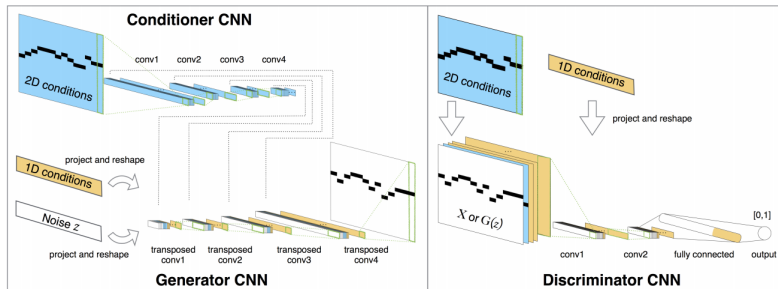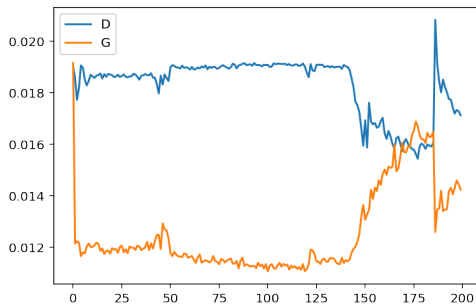- Can be used to follow a melody or produce multitrack melody.

Architecture

Figure: The architecture of the MidiNet Network

Results

▶ The conditioner helps prevent mode collapse.

MusicVAE

A Hierarchical Latent Vector Model for Learning Long-Term Structure in Music by Adam Roberts, Jesse Engel, Colin Raffel, Curtis Hawthorne, Douglas Eck

- ► Based on a variational autoencoder.
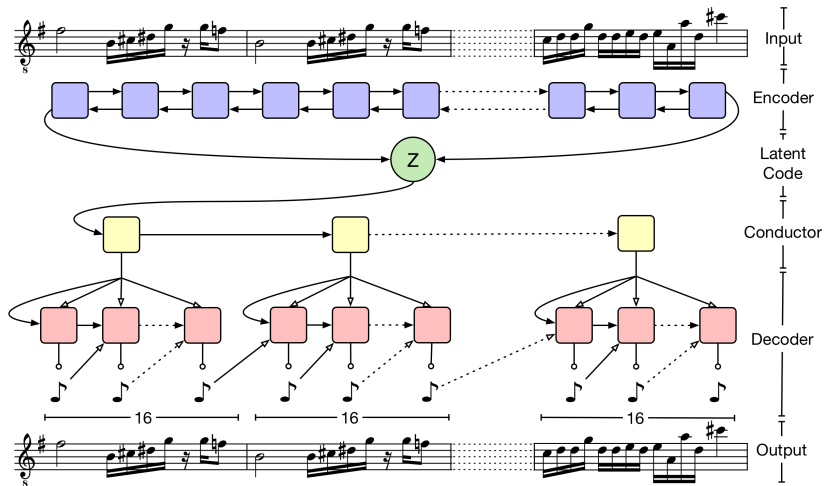- ► Uses a hierarchical structure to have some long-term consistency.

Architecture

Figure: The architecture of the MusicVAE model

Résultats

- The hierarchical structure promotes the use of the latent code.
- Can't generate music out of nothing...
- ...but can be used to interpolate between two melody.