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1. Jazz Chords

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2. Embedding

To represent chord symbol in a numerical form I've used word embeddings widely known from NLP. I've tested Word2Vec, FastText and Multi-Hot representations. In a visualisation of chords embedding, which dimensions were reduced by PCA, a musical Circle of Fifths appeared. I've chosen Word2Vec Skip-Gram model.

3. Neural Network

To generate chords I've tested several Recurrent Neural Networks, which predicts next chord based on previous chords. Before training the model I've encoded chords progressions using selected embedding. Finally I've choosen 4-layer GRU-based Deep Neural Network.

4. Generating Jazz Song

I've created an application that helps composers to choose a chord based on history. This is an example* of a jazz song generated with my application. Scan the QR code to listen to the song.

*I have used jazz song Girl From Ipanema to initiate the model.