

## Generating Music with More Refined Emotions

**Authors :** Shao-Di Feng, Von-Wun Soo

**Abstract :** To generate symbolic music with specific emotions is a challenging task due to symbolic music datasets that have emotion labels are scarce and incomplete. This research aims to generate more refined emotions based on the training datasets that are only labeled with four quadrants in Russel's 2D emotion model. We focus on the theory of Music Fadernet and map arousal and valence to the low-level attributes, and build a symbolic music generation model by combining transformer and GM-VAE. We adopt an in-attention mechanism for the model and improve it by allowing modulation by conditional information. And we show the music generation model could control the generation of music according to the emotions specified by users in terms of high-level linguistic expression and by manipulating their corresponding low-level musical attributes. Finally, we evaluate the model performance using a pre-trained emotion classifier against a pop piano midi dataset called EMOPIA, and by subjective listening evaluation, we demonstrate that the model could generate music with more refined emotions correctly.

**Keywords :** music generation, music emotion controlling, deep learning, semi-supervised learning

**Conference Title :** ICCEM 2022 : International Conference on Computer and Electronic Music

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** December 02-03, 2022