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Using character valence in computer generated music to produce variation aligned to a storyline

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Abstract

This paper is to describe a method for interposing computer generated melody with tone linked to unique entities within the text of a novel. Background: A recent study describing a piece of software called “TransProse” has already shown that sentiment in the text of a novel can be used to automatically generate simple piano music that reflects the same sentiment as the novel. This study wished to establish a method whereby, if after aligning the text with the melody, the sentiment in the words surrounding particular characters as they occurred within the novel could produce another melody line, for each character, that could reflect the individual characters’ tone and distinguish the melodies ascribed to each character from each other. Method: The sentiment in the text of the novel is extracted by looking up the words in a database that groups the words into emotional groups called “Ekman categories”. Simplistic relations between aspects of music such as pitch and tempo are chosen based on the two categories that contained the most words. These chosen attributes are then used to generate the first two melody lines. The paragraphs within which the named entities referring to characters are found are manually determined and the top “Ekman category” of the named entities is obtained through simplistic methods of extraction. Each bar of the melody is aligned with individual paragraphs of text and an additional melody line is generated for each character. Results: Adjusting the fitness function of the Genetic algorithm (GA) that was used was not sufficient to link the tone of the characters to the melody. Assigning each character their own short melodic phrase and varying the phrase appropriately achieved the desired outcome but requires additional work to harmonise better with the first two melody lines.