Abstract

In recent years, large volumes of music have been digitized and at the same time a number of digital audio content analysis (ACA) methods have been developed that, using algorithms, can calculate so-called features that estimate aspects of digital music. It gives many new possibilities to musicology. However, music science hardly uses these methods today. How to Think Music with Data explores how music science can use ACA methods to analyse larger amounts of music than one would do manually.

In the dissertation, I study the practical and computational value of ACA methods based on three cases: In case number 1, I explore machine-learned features designed to estimate music intuitive qualities. In case number 2, I investigate and discuss an already existing musical big data analysis; and in case number 3, I use ACA methods to assist in analysing 89 DJ sets.

ACA methods can in particular be a means for music researchers to spot things that would otherwise be difficult to spot. For example, they can use the techniques to ask new questions that can be investigated with the help of data, and the answers to these questions can be part of the answer to qualitative questions. The quantitative does not exclude the qualitative. ACA methods can both estimate old music analytical goals, such as pace and tone, but at the same time allow new musical goals. However, there is a ceiling of about 70-85% correctness in terms of traditional methods. In addition, ACA methods consist of extremely complicated and opaque algorithms, and it complicates the translation from goals to music analysis. Therefore, the analysis on the qualitative level becomes inaccurate and uncertain - despite otherwise precise methods. If music researchers want to exploit the benefits of ACA methods - and there are many good reasons for it -, they also have to adjust to never fully understanding the connection between music and ACA goals.