In the Digital Music Lab project we work on the automatic analysis of large audio databases that results in rich annotations for large corpora of music. The musicological interpretation of this detailed data from thousands of pieces is a challenging task that can benefit greatly from specifically designed interactive visualisation. Most existing big music data visualisation focuses on cultural attributes, mood, or listener behaviour.

In our ongoing work we explore chord sequence patterns generated by sequential pattern mining of more than one million tracks from the "I Like Music" commercial music collection. We design new visual methods that summarise chord patterns including chord types, chroma and circle-of-fifths facets, enabling musicologists to answer and develop questions relating to the structure of chord patterns and their frequency.

Our visualisation mostly represents root movement and chord qualities geometrically and pattern support with colour and we use two individually configurable views in parallel. This encourages the comparison between different representations of a corpus highlighting complimentary musical aspects, and emphasizes differences between datasets, here representing different genres.
We apply and adapt existing techniques including origin-destination matrices, parallel coordinate plots and Tonnetz-based diagrams and provide musicologists with interactions supporting their exploration and interpretation of the corpora.

We discuss the benefits and limitations of our approaches based on preliminary user testing. We find that differences between chord patterns of different genres, e.g. rock vs. jazz, are clearly identifiable and can be used to generate hypotheses for the study of individual pieces, further statistical investigations or new data processing and visualisation. Our designs will adapt as user needs are established through ongoing visual exploration. Means of aggregating, focusing and filtering by selected characteristics (such as key, melodic patterns etc.) will be added as we develop our design for the visualisation of chord patterns in close collaboration with musicologists.

The visualisation is available as a web application at http://dml.city.ac.uk/csvd/