Music Vis

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Paper 1 : Mapping in the Palm of your hand, explore and discover your collection

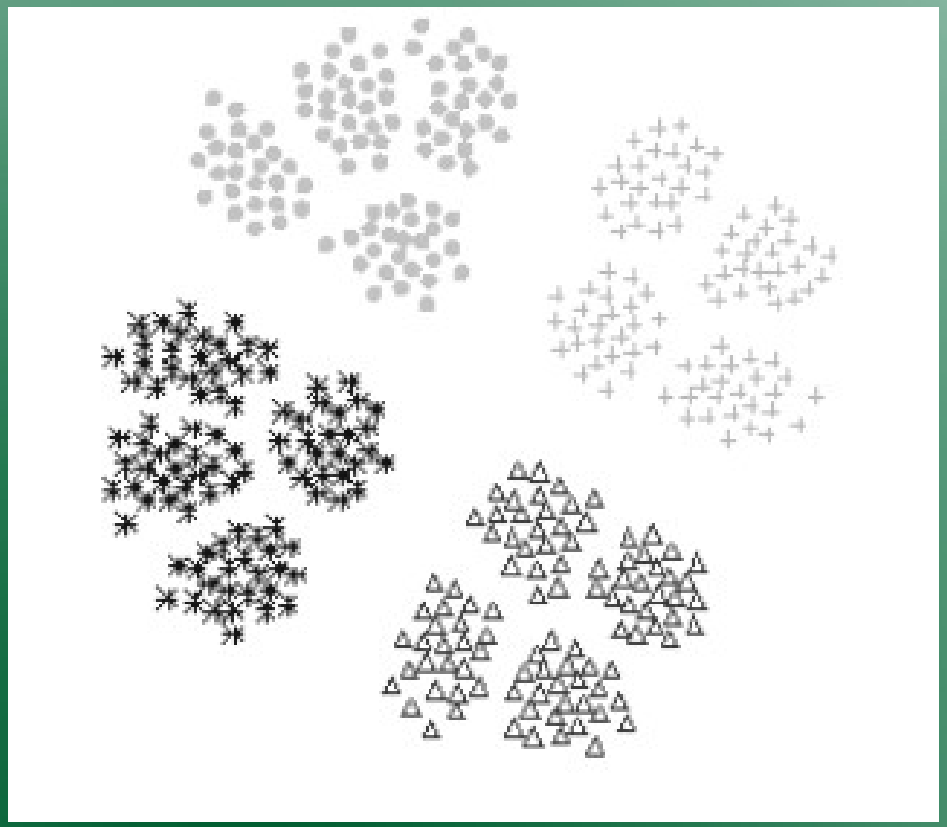
Problem : Folder based/hierarchical structures limit the user to find specific items.

Solution : A novel user interface „The artist map“

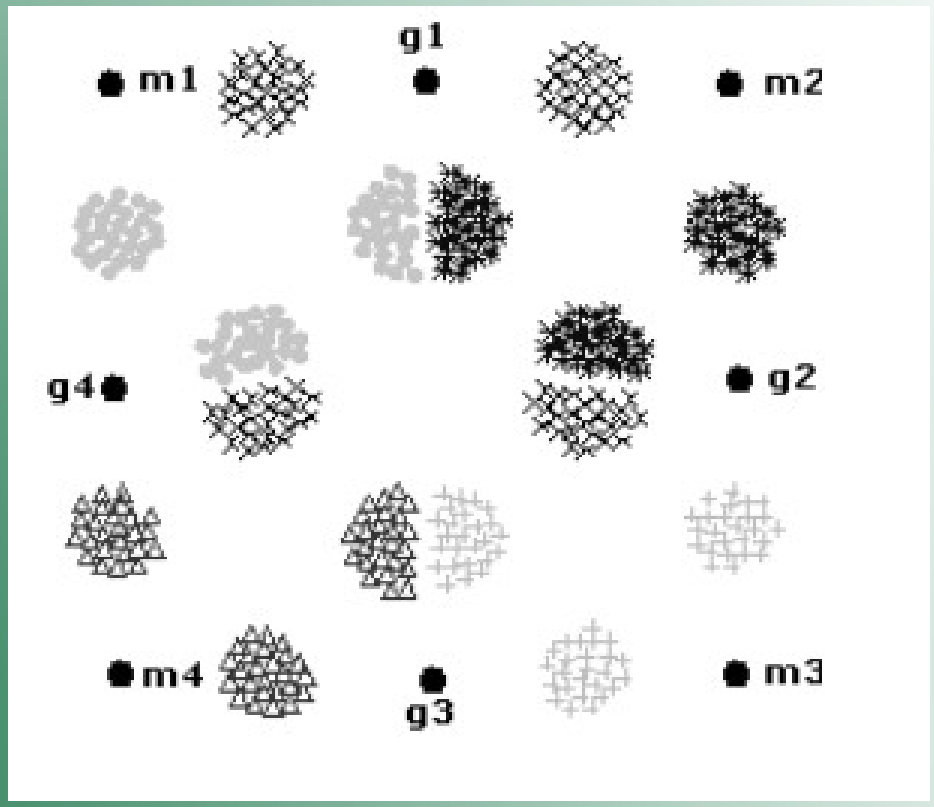
Artist Map

- Support non-specific searches
- Based on the similarity between artists
- Clustering by attribute magnets
- Coloring
- Interactive

How?

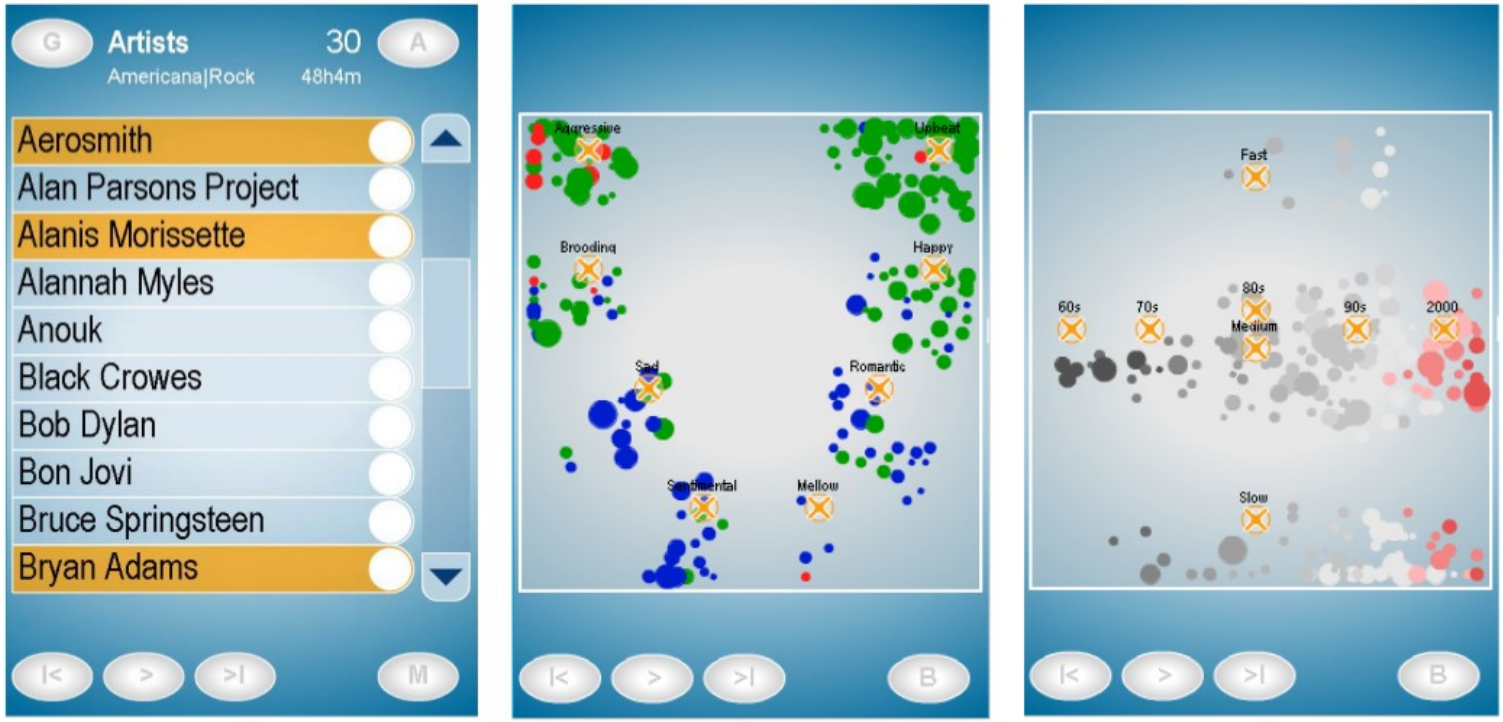


LinLog Model



With attribute magnets

Artist Map



a) b) c)

Figure 5: Screenshots of the interface, applied to a music collection of 200 artists and 2000 songs: a) *standard* navigation based on hierarchy, b*)* a *mood-map* where clustering is based on *mood* (spreading the magnets to make efficient use of space) and coloring is done on *tempo* c) a *year-tempo* map where clustering is based on *year of release* along the horizontal direction and *tempo* along the vertical direction, and coloring is done on *year*.

Paper 2 : Visualizing Musical Structure and Rhythm via Self-Similarity

- Visualizing the time structure of musical waveforms
- The acoustic similarity between any two instans
- 2D representation, which makes structural and rhytmic characteristics visible
- Characterizing self-similarity rather than specific audio attributes

Similarity Analysis

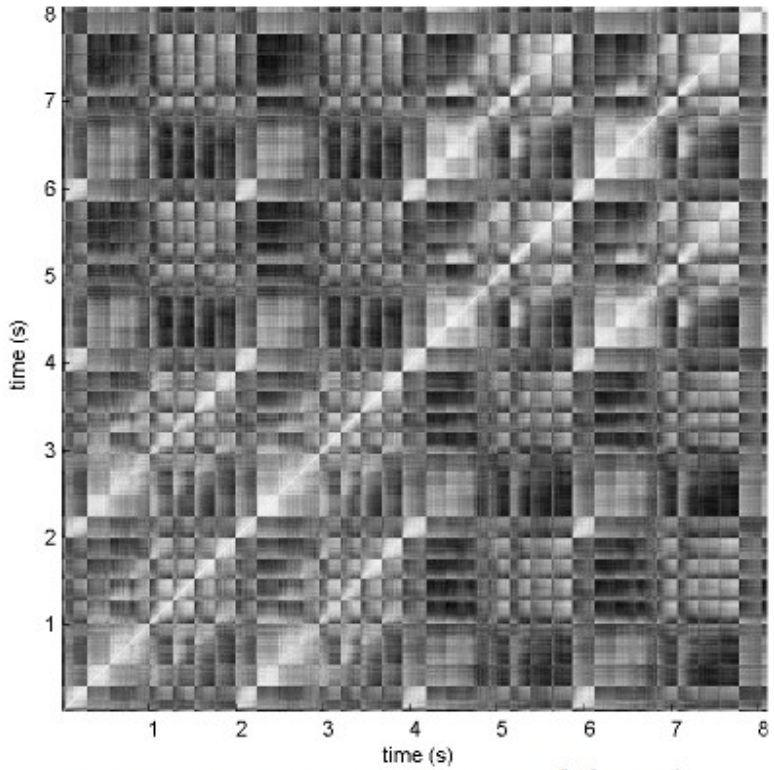


Figure 1. Self-similarity of Bach's *Prelude No. 1*

- An audio file is a square
- Time runs from left to right
- Time runs from bottom to top
- Similar regions are bright
- Dissimilar regions are dark

Visualizing Musical Rhythm

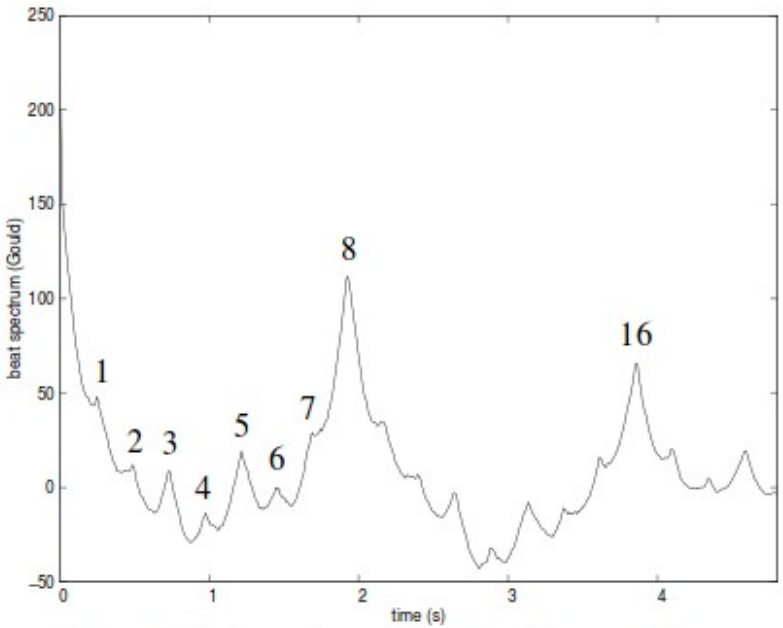


Figure 6. Beat spectrum of Gould performance from diagonal sum

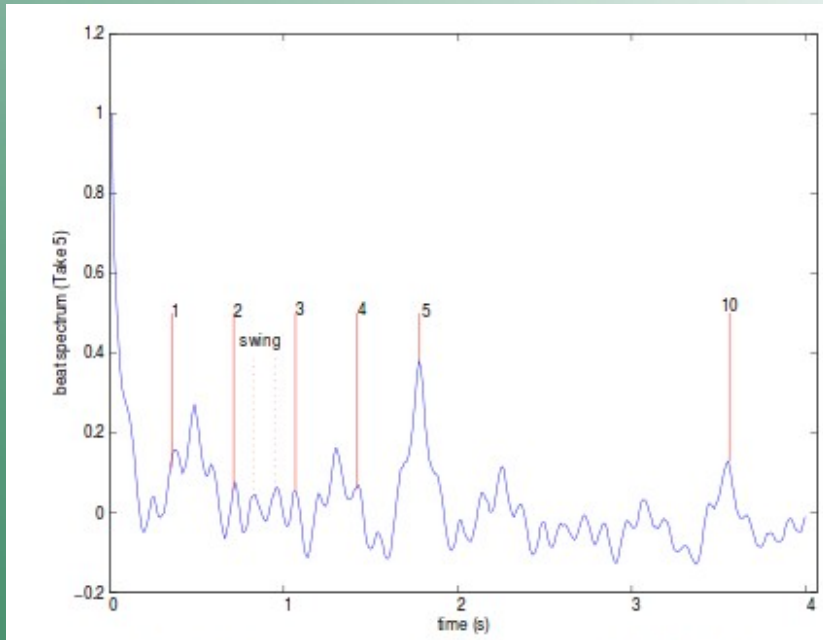


Figure 7. Beat spectrum of jazz composition *Take 5*

Paper1 vs Paper2

- An interface
- Similarity between artists
- Specific attributes
- Very interesting

- An approach
- Self-similarity
- Non-specific attributes
- Not so interesting

References

- Mapping Music In The Palm Of Your Hand, Rob van Gulik, Fabio Vignoli, Huub van de Wetering, In Proceedings of ISMIR 2004
- Visualizing Musical Structure and Rhythm via Self-Similarity, Jonathan Foote and Matthew Cooper International Computer Music Conference Proceedings 2001.

Thank you for your attention!