LFE Medieninformatik • Franz Berwein

Party JukeBox

Support Group Playlist Generation
In a Public Environment

Final Presentation of Project Thesis
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Outline

1. Motivation

2. Initial Design

3. Final Version

4. Evaluation

5. Conclusion and Future Work

Motivation

Playlist generation for parties without DJ is tedious

Problems:
• Most applications aimed at single users
• Unfair in a group setting
• Few automation and interaction
• Shuffle functions do not consider similarities

Our goals:
• Playlist generation by groups (fairness)
• Mimic DJ expertise (smoothness)

Party JukeBox

LUDWIG-
MAXIMILIANS-
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MÜNCHEN

LMU

Initial Design – Client Interface

Initial Design – Problems

- Each client holding a duplicate copy of TagClusters [Chen et al.] → waste of space
- Users are unlikely to conduct genre-based search
- High workload due to database queries and calculation of force algorithm

Solution: Simpler redesign for mobile phones

(Chen et al.: "TagClusters: Semantic Aggregation of Collaborative Tags beyond TagClouds". *Proc. of the 9th International Symposium on Smart Graphics*, SG '09, 2009.)

Final Version – Client   (Proposed)

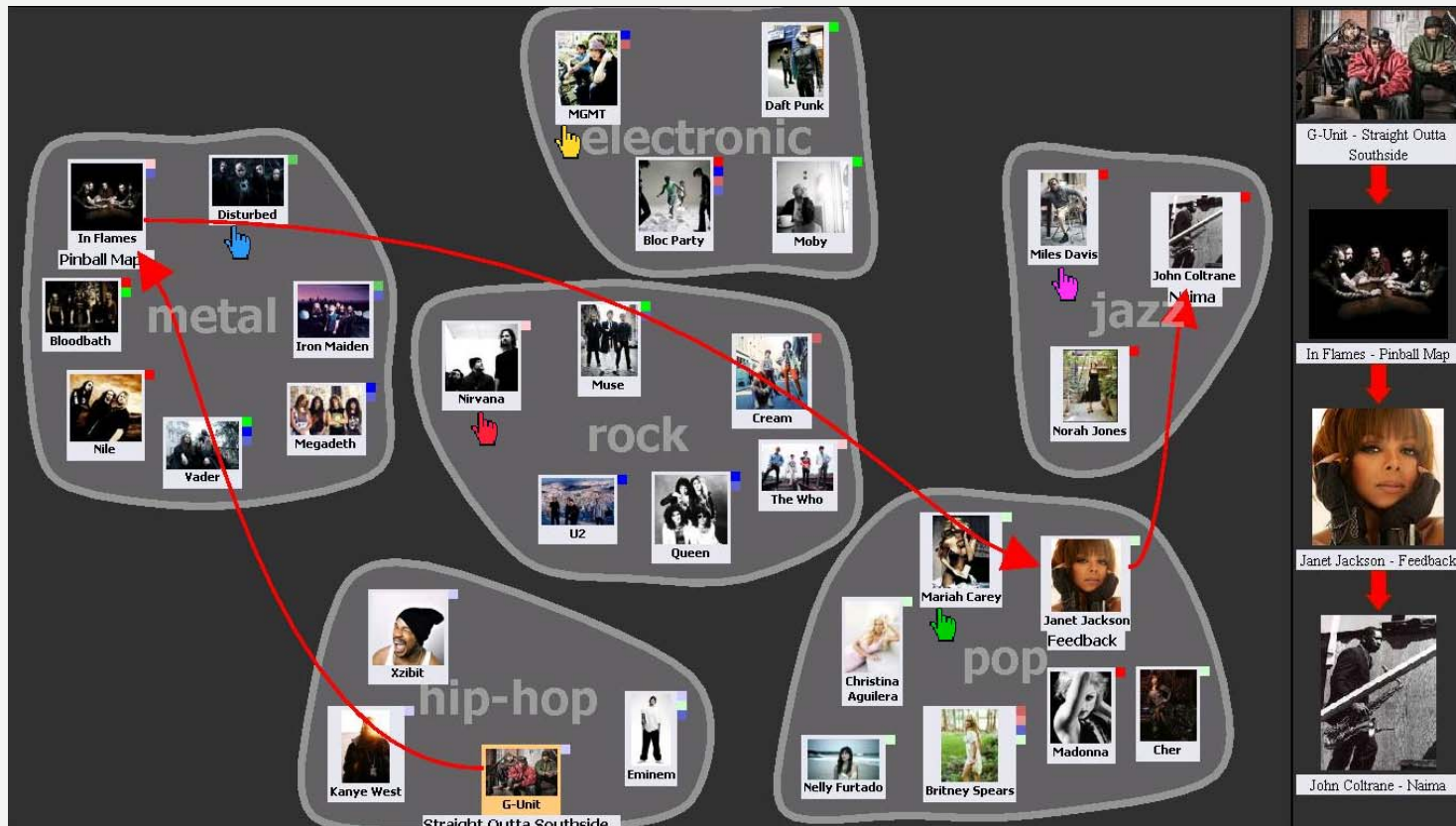Browsing and selecting music with
the mobile phone

Quick Browsing:
Sortable list with filters

Detailed Browsing (1):
Personal Cursor (see next slide):
• Uniquely colored
• Controlled with trackpad or joystick

Artist	Votes	Genre
Nile	1	death metal
Madonna	1	pop
Bloodbath	2	death metal
Bloc Party	4	electronic
Muse	2	rock
Vader	3	death metal
MGMT	4	electronic
Megadeth	2	metal
U2	1	rock
Queen	2	rock
Britney Spe...	1	pop
Cream	1	rock
Disturbed	1	metal
Iron Maiden	2	metal
In Flames	1	melodic dea...
The Who	1	rock
Sonic Syndi...	1	melodic dea...
Blinded Col...	1	melodic dea...
Diablo	1	melodic dea...

Final Version – Client   (Proposed)
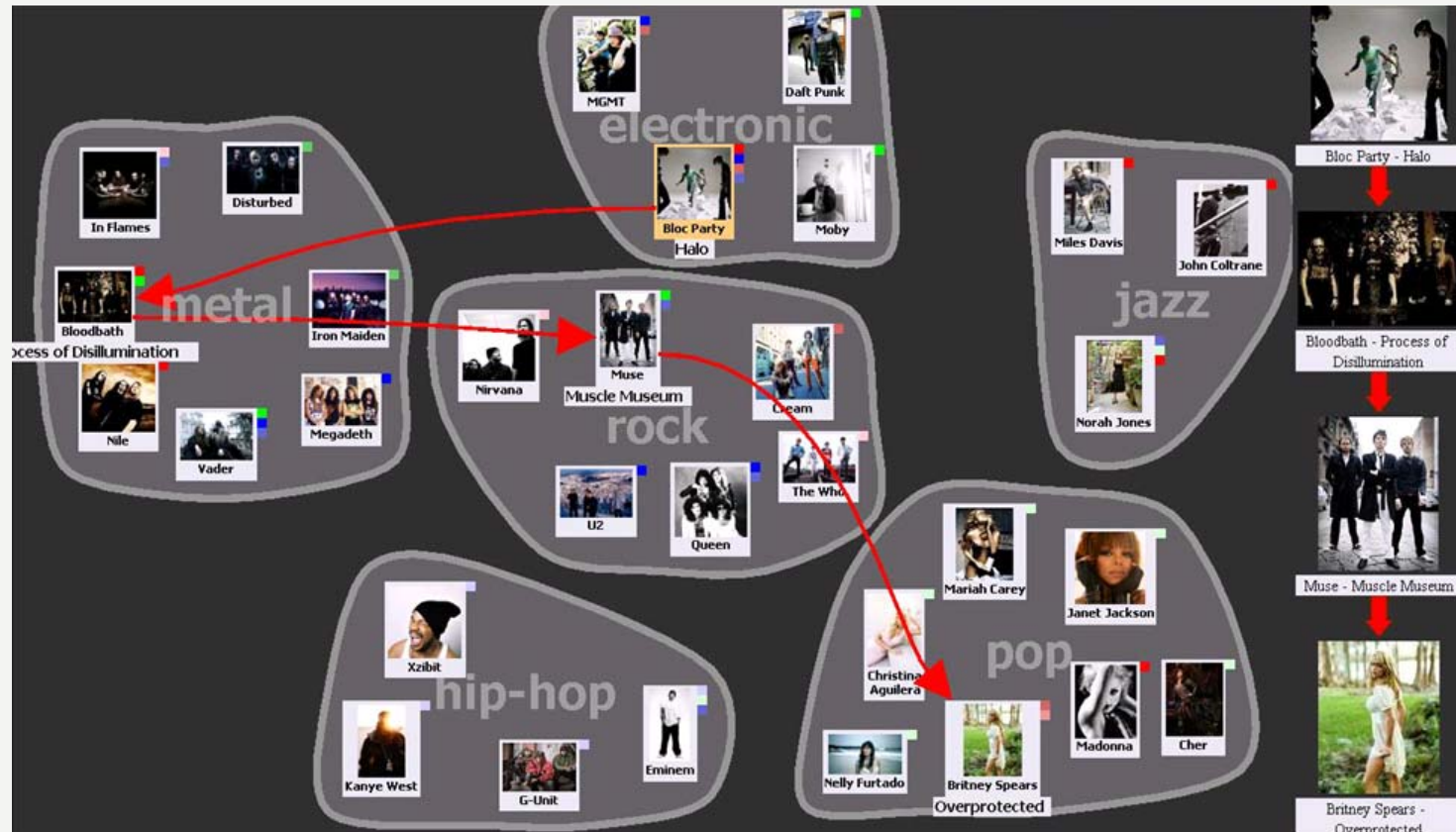
Final Version – Client   (Proposed)

Detailed browsing (2):
Shoot & Copy
[Boring et al.]:
capture image and
zoom in

(Boring et al. "Shoot & Copy: Phonecam-Based Information Transfer from Public Displays onto Mobile Phones", *Proc. of Mobility '07* (Singapore). ACM, pp. 24-31, 2007)

Server – Interface

Server – Music Map

Features:
- Contains all available artists
- Artists are grouped into their most characteristic genre
- Simplification of genres
- Genres and artists are sorted by similarity

Creation:
- Force-based layout
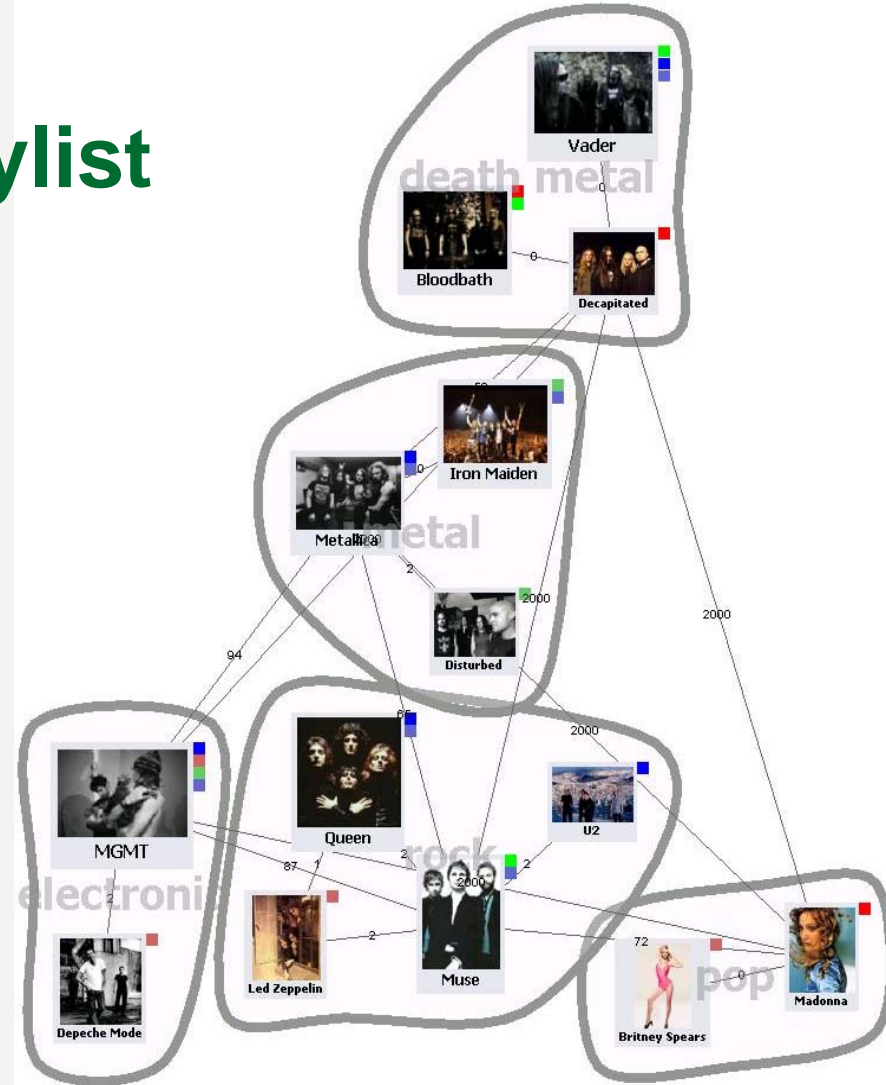- Simplification of edge connections

Server – Group Playlist

Strict Mode:

- Fairness

- Each vote receives equal attention

DJ Mode:

- Smoothness

- Intermediate genres are played between dissimilar ones

Evaluation

Participants:

- 20 participants: 9 female, 11 male
- Average age: 25,5 years

Settings and Procedure:

- Server view on the plasma screen of our lab
- Pre-Questionnaire covering general experience
- Interview on functionalities of the view and browsing concepts for the mobile phones

Evaluation – Music Map & Playlist

Music Map:
- High acceptance rates for genre-based view
- Correct placement of artists and genres

Group Playlist:
- Positive impression
- Transitions easy to capture
- DJ Mode rated remarkably better than Strict Mode

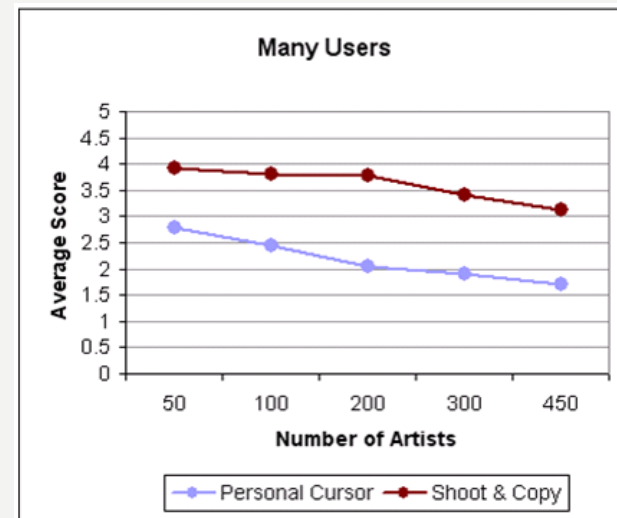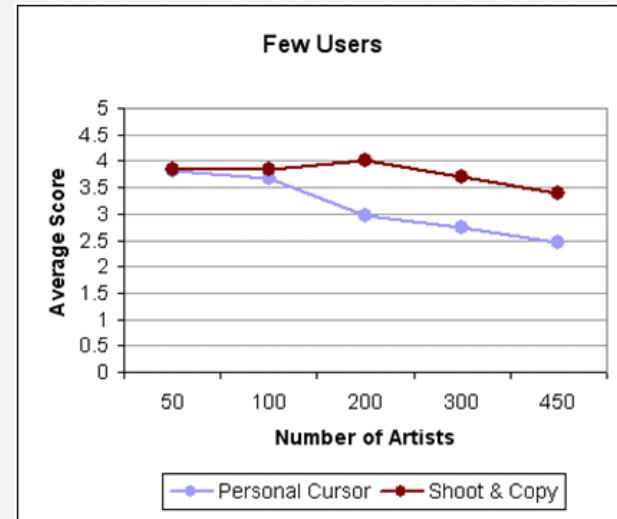|	Functionality	Average score
Music map	Overall impression	4.25
	Location of each genre	3.90
	Current genre category	4.00
	Location of each artist	4.05
Group playlist	Overall impression	4.25
	Easy to understand	4.65
	Transition easy to capture	4.20
	Strict voting mechanism	3.70
	DJ mechanism	4.45

Evaluation – Browsing Concepts

Personal Cursor:
- Straightforward, known metaphor
- Good if no line of sight to display
- Bad for many users (clutter)

Shoot & Copy:
- Better suitable for many users and artists on the map (zooming)

→ Both have their merits

Few Users — Average Score vs Number of Artists (Personal Cursor, Shoot & Copy)

Many Users — Average Score vs Number of Artists (Personal Cursor, Shoot & Copy)

Conclusion and Future Work

Project Features:
- Genre-based Music Map

- Group Playlist

- DJ Mechanism

- Browsing with mobile phone

Future Work:
- Scalability and stability

- Implementation of client on mobile phone

- User study in group environment

Thanks for your attention!

Questions?