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)
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

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

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

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

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Music map</strong></td>
<td></td>
</tr>
<tr>
<td>Overall impression</td>
<td>4.25</td>
</tr>
<tr>
<td>Location of each genre</td>
<td>3.90</td>
</tr>
<tr>
<td>Current genre category</td>
<td>4.00</td>
</tr>
<tr>
<td>Location of each artist</td>
<td>4.05</td>
</tr>
<tr>
<td><strong>Group playlist</strong></td>
<td></td>
</tr>
<tr>
<td>Overall impression</td>
<td>4.25</td>
</tr>
<tr>
<td>Easy to understand</td>
<td>4.65</td>
</tr>
<tr>
<td>Transition easy to capture</td>
<td>4.20</td>
</tr>
<tr>
<td>Strict voting mechanism</td>
<td>3.70</td>
</tr>
<tr>
<td>DJ mechanism</td>
<td>4.45</td>
</tr>
</tbody>
</table>
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
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?