Rapid Prototyping for the Digital Humanities

Defence of Master’s Thesis
Hans Lienhop
Digital Humanities?

- Research in the humanities with digital methods

Rapid Prototyping?

- Quickly creating incomplete versions of software
- Allows for fast feedback regarding fulfillment of requirements
Why is this necessary?

- Question
- Corpus
- Model
- Annotations
- Answer

Flow diagram: Question → Model → Annotations → Answer → Corpus → Model
Approach
Faceted Search System

\[ S = ((T, \leq), O, I, Q) \]

- \( T \): A terminology consisting of abstract terms
- \( \leq \): A reflexive and transitive relation over \( T \), subsumption
- \( O \): A set of objects indexed by the taxonomy
- \( I \): A function \( I : T \rightarrow 2^O \), interpretation
- \( Q \): The set of queries over \( T \) using basic boolean algebra

\( D(o) \) returns for each object the set of terms it is described by.

\[ I_D(t) = \{ o \in O | t \in D(o) \} \]
Faceted Search

F_1
Author: (T_1,<_1)
Jänicke Santos

F_2
Venue: (T_2,<_2)
DH Digit. Humanit. Q

F_3
Year: (T_3,<_3)
2020 2021

D_0 D_1 D_2
Extended Model

Terms

Spans

Diagram of a model with nodes A, B, C, D, E, F, G, and H connected by directed edges, illustrating the relationships and flows between the terms and spans.
Extended Model
Query Refinement
Query Language

A INTERSECTING (B AND C)

A INTERSECTING (B AND C) OR SIMILAR TO (D NOT E)

A SIMILAR TO (B) AND INTERSECTING (C INTERSECTING (D OR E))
User Study

- 10 participants
- 4 explorative tasks, one annotating
- Evaluating:
  - Time
  - Estimated Difficulty
  - User Experience
Evaluation

![Box plot and table showing average time and difficulty for tasks 1 to 5.](image)

<table>
<thead>
<tr>
<th>Task</th>
<th>avg. Time</th>
<th>avg difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>167</td>
<td>3.3</td>
</tr>
<tr>
<td>2</td>
<td>124</td>
<td>1.7</td>
</tr>
<tr>
<td>3</td>
<td>133</td>
<td>2.3</td>
</tr>
<tr>
<td>4</td>
<td>137</td>
<td>2.5</td>
</tr>
<tr>
<td>5</td>
<td>235</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Thank you for your attention!