Social Information Visualization

Uta Hinrichs; CPSC 583 – Nov. 10, 2010
social InfoVis – some characteristics

- centered around people
- non-critical data
- intended for “the masses”
- visual aesthetics plays an important role
- walk-up-and-use interaction
- privacy concerns
some flavors of social InfoVis...

• visualizing social communities
  – social networks: e.g. online communities
  – social communication: e.g. chat

• visualizing personal data - egocentric view on life
  – individual email archives
  – music listening history

• visualization in social spaces
  – museums
  – art exhibition
visualizing social communities
PeopleGarden: Creating Data Portraits for Users
R. Xiong and J. Donath [12]

• posting patterns of online communities
  – user’s contribution
  – response rate
  – interaction among users

• data portraits
  – representation of a user’s interaction history
PeopleFlower
PeopleGarden; R. Xiong and J. Donath [12]

- user’s postings → flower petals
- time of posting
  - order & saturation of flower petals
- changes over time
  - number of petals increases with number of postings
  - symmetry: older petals move to the left as new petals are added to the right
  - petal’s color fades over time
- responses to postings
  - circles on top of petals
- initial post vs. reply
  - initial post (new conversation): magenta
  - reply to existing conversation: blue
PeopleGarden
PeopleGarden; R. Xiong and J. Donath [12]

- overview & comparison of multiple users
- length of membership → height of flowers
code_swarm
M. Ogawa and M. Kwan-Liu [6]

- shows the history of open source software projects
- **people-centered** view on software projects
- software projects as living & breathing organisms
- information visualization **video**
visual representation

code_swarm; M. Ogawa and M. Kwan-Liu, 2009 [6]; http://www.vimeo.com/1093745

• file → circle
• progress/popularity of a file → size of circle
• developer → text label
• file type → color
• activity over time → transparency
• freshly committed files highlighted in white

→ python example
Bubba Talk
A. Tat and S. Carpendale [9]

- visualization of textual conversations
visual representation
Bubba Talk; A. Tat and S. Carpendale [9]

- fuzzy circles represent “speakers”
  - arrangement of speakers in a circle
  - use of color to distinguish speakers
- directional response relationships
  - animated circle trail indicates direction
  - natural looking animation: circles slow down as they reach target
  - large & transparent circles emanate from speaker
visual representation
Bubba Talk; A. Tat and S. Carpendale [9]

• use of capital letters → unfilled circles
• use of explanation marks → size growth
• number of words → small circles around speaker
• number of characters → dots moving toward listener
we feel fine
J. Harris and S. Kamvar [3]; 2005; http://www.wefeelfine.org/
visualizing personal data
Themail
F.B. Viégas, S. Golder, and J. Donath [10]

- portray of email correspondence
- “big picture” overview & detail-oriented exploration
visual representation & interaction
Themail; F.B. Viégas, S. Golder, and J. Donath [10]

- one owner–contact relationship at a time
- email contacts are listed on the right
- most used terms within an email exchange over time
  - yearly – shown large & faded in the background
  - monthly – shown in interactive keyword columns along a timeline
- selected messages shown in the message box (left)
visual representation & interaction
Themail; F.B. Viégas, S. Golder, and J. Donath [10]

• email messages → colored circles
  – length of message → size of circle
  – incoming/outgoing message → color of circle
• search for particular keywords supported
• timeline: expanded & collapsed view
“in the wild” study
Themall; F.B. Viégas, S. Golder, and J. Donath [10]

• haystack mode (80%): gaining an overall understanding
  → finding information that are already known confirmed
  – data as a portrait of relationships
  – reminiscing special events
  – confirming/characterizing relationships
  – evolution of relationships
• needle mode (20%): finding specific bits of information
  → searching for new & surprising information within a known data set
  – following up on “out of place” keywords
  – visualization as a reminder of forgotten events/messages
LastHistory: The Streams of Our Lives

- visualization of personal music listening histories
  - analysis mode: temporal patterns and habits
  - personal mode: representation of one’s past based on additional contextual data for reminiscing purposes
characterization of music listening data
visual representation
interaction

- support of panning & zooming (x-axis)
- text box for filtering
- highlighting sequences through brushing
- details about highlighted song and its usage
personal mode

• adding photos and calendar entries to the timeline
• only visible to the individual user
Distribution

Data and location of encounters.

<table>
<thead>
<tr>
<th>Month</th>
<th>Encounters</th>
<th>Minutes</th>
<th>Minutes Per Encounter</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three</td>
<td>1,761</td>
<td>4.8</td>
<td>560</td>
<td>32%</td>
</tr>
<tr>
<td>Nine</td>
<td>254</td>
<td>210</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Throughout 2006, friends, family, co-workers and acquaintances of Nicholas Felton were asked to report on his activities whenever they met. A list of the following regions was compiled from the responses of these participants in a variety of questions concerning their encounters.
Feltron Annual Report

- collecting everyday data
- tool: http://www.daytum.com
visualization in social spaces
EMDialog

• infoVis to enhance museum exhibit
• direct-touch interaction
• encourage approach, interaction & discussion
physical context – Emily Carr exhibition
EMDialog; U. Hinrichs, H. Schmidt and S. Carpendale, 2008 [4]
visual representation
EMDialog; U. Hinrichs, H. Schmidt and S. Carpendale, 2008 [4]
visual representation
EMDialog; U. Hinrichs, H. Schmidt and S. Carpendale, 2008 [4]
interaction
EMDialog; U. Hinrichs, H. Schmidt and S. Carpendale, 2008 [4]
Artifacts of the Presence Era

• motivation
  – create a visual record of sounds & activities in a physical space
  – highlighting long-term patterns in an aesthetically pleasing way
physical context: ICA, Boston

• memory piece about the old building of ICA, exhibited in the new building
installation – present display

- real-time footage of a video camera; sampled every sec.
- current audio volume in the space
installation – history display

- visual metaphor: geological layers in sedimentary rocks
- layers: activity & sound every 5 minutes
- layer shape: sound
- layer color: activity
visual representation

1. original audio wave
2. sample height of audio wave
3. shape of top layer in the history stack
4. placement of the sample wave on top of the previous layer
5. resulting wave form
6. final layer shape cut from chosen video image
compression over time
references