Reminder: Revised Abstract due Monday

Edit abstract in light of comments, related work review

Add scenario or UI walkthrough

Combine with related work review in one document

Bring 2 hardcopies to class on Monday 11/7
Related Work: Common Issues

“[2] demonstrated …”

Write a complete narrative that mentions all the references.

Compare and contrast, both within references and between references and your work.

Structure your review into logical sub-sections.
Audio & Video Interfaces
## A (partial) design space for audio interfaces

<table>
<thead>
<tr>
<th>Audio used as input or output?</th>
<th>Input only</th>
<th>Output only</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of audio</strong></td>
<td>Speech</td>
<td>Voice, Non-Speech</td>
<td>Instrumental/Ambient</td>
</tr>
<tr>
<td><strong>Domain</strong></td>
<td>Music creation, performance</td>
<td>Mtg/Interview Capture</td>
<td>Other, e.g., control of desktop apps</td>
</tr>
<tr>
<td><strong>Other modalities used</strong></td>
<td>Mouse/Keyboard</td>
<td>Pen</td>
<td>RFID, Barcode, ...</td>
</tr>
</tbody>
</table>
Challenges of working with temporal media

Much audio/video is write-only: too time consuming to review & edit.
Interpreting speech and analyzing video are error-prone: need interactions to handle ambiguity.
Books with Voices
Klemmer, CHI 2003

Interviews with oral historians:
Audio recordings are primary artifact, but are seldomly used after a transcript is produced. Paper rules.

Why?
Books with Voices

Klemmer, CHI 2003
Books with Voices
Klemmer, CHI 2003
Multimodal Input: Put That There

http://www.youtube.com/watch?v=RyBEUyEtXQo&feature=related
Multi-modal input

multimodal: interface accepts input from >1 human modalities/channels

multimedia: interface produces output in >1 modes

sensor fusion: multiple sensor channels to detect single human action
Vocal Joystick (Bilmes)
Composition & Performance
Visual dataflow languages

Pd, Max MSP, Quartz Composer, ...: Nodes generate or transform signals; links are pipes for signals
Reactable: Tangible Data Flow

http://www.youtube.com/watch?v=0h-RhyopUmc
Recorded Waveforms vs. MIDI
Melodyne:
Detect pitch of recorded sound; enable MIDI-like editing
http://www.youtube.com/watch?v=PtoTjioZD2M
Paris Smaragdis’ User-Assisted Audio Selection

http://www.cs.illinois.edu/homes/paris/Paris_Smaragdis_page/Paris_Audio_Demos.html
NIME: New Instruments for Musical Expression

Augmenting existing instruments with new sensing capabilities

Dan Overholt, Overtone Violin
NIME: New Instruments for Musical Expression

Ge Wang, Smule Ocarina
NIME: New Instruments for Musical Expression

Creating entirely new instruments

Michel Veisvisz, The Hands
Video
Video for Research: Diver

Capturing & reviewing multiple perspectives

1. Shooting the event
2. Encoding the source
3. Creating a DIVE
4. Sharing on Web DIVER

R. Pea, Stanford
00:30 this group is working on a visualization to explain how the rainbow gets its bands of color

00:30 a second group is working on explaining the transformations involved in 2-D and polar coordinate graphing

00:30 the third group is starting to work on explaining why we have the seasons
Access: Video Tapestries

Barnes, Siggraph 2010
