

Multimodal Interfaces

VirtualDJ

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Introduction

- VirtualDJ is a simple audioplayer controlled by unusual modalities.
- The goal is to allow blind people to navigate in a playlist easily
- Three modalities were used : pitch, voice

Modalities

CASE

Exclusivity

Synergistic

CARE

Assignment

Complementarity

Equivalence

		USE OF MODALITIES	
		Sequential	Parallel
FUSION OF MODALITIES	Combined	ALTERNATE	SYNERGISTIC
	Independent	EXCLUSIVE	CONCURRENT

Pitch

Since the playlist is not visible, we needed to implement a way to select music. Voice synthesis was not an appropriate option.

We opted for « bookmarks » based on tune whistling. The user can bind a music to a whistled tune, and select a previously bound music by whistling the tune again.

Voice

Speech recognition is one of the ways we have chosen to control the audio player.

We have several voice commands:

Play, Next, Back,...

In order to issue commands, the player needs to be paused, muted or stopped

Gesture

Gestures are used to control the playlist whenever voice wouldn't work

In order to catch the attention of the program, a user must raise the right hand over his head

Then he can swing his left hand to the right or to the left to navigate within the playlist or stop it by raising hand.

Implementation

- Working with
 - .Net,
 - C#
 - Kinect (SDK 1.5)
- Using Windows Media Player to manage playlists
- IDE : Visual Studio
- Each part of the program is independant

Evaluation

- 6 testers (aged 25-35)
- Went through a three-phases protocol :
 - Phase 1 : « play and stop »
 - Phase 2 : « next and back »
 - Phase 3 : « pitchmark »
- We found out many bugs (see report for more informations)

Conclusion

This great experience allowed us to use new technologies we had never tried before.

We found out that most of the hard work wasn't real implementation, but rather finding the right settings so the recognition works best.



Video



Questions ?

