Two Turntables and a Mobile Phone:

Wireless Sensing-Based Digital Scratching with Visual Feedback

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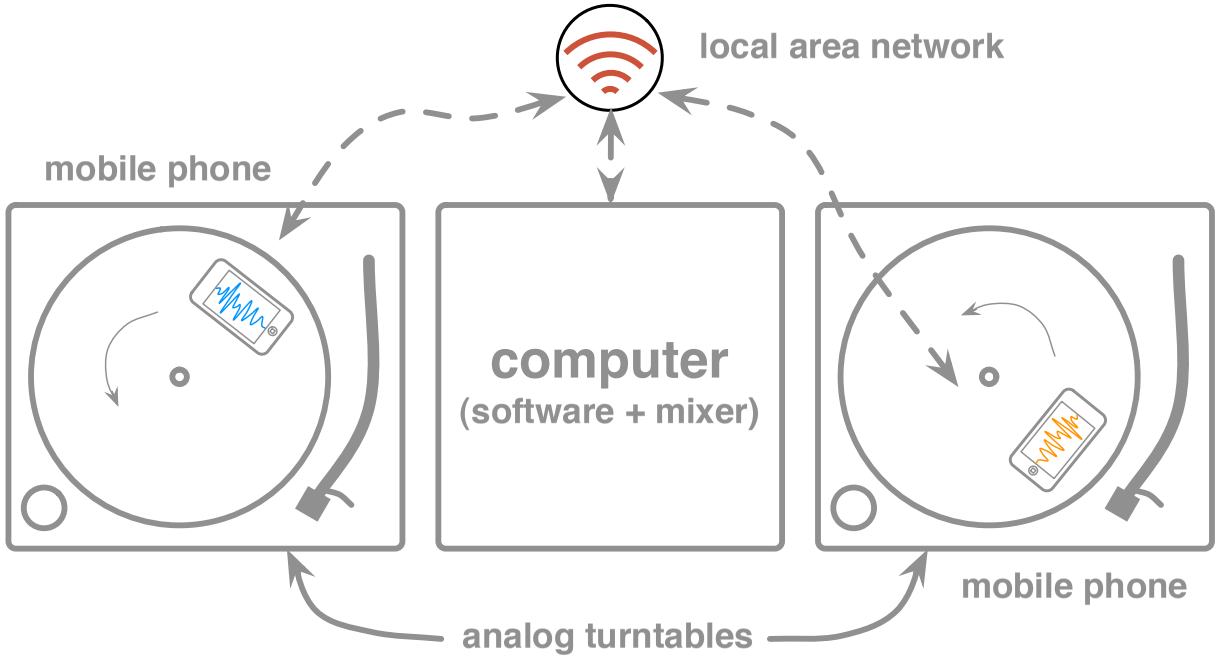
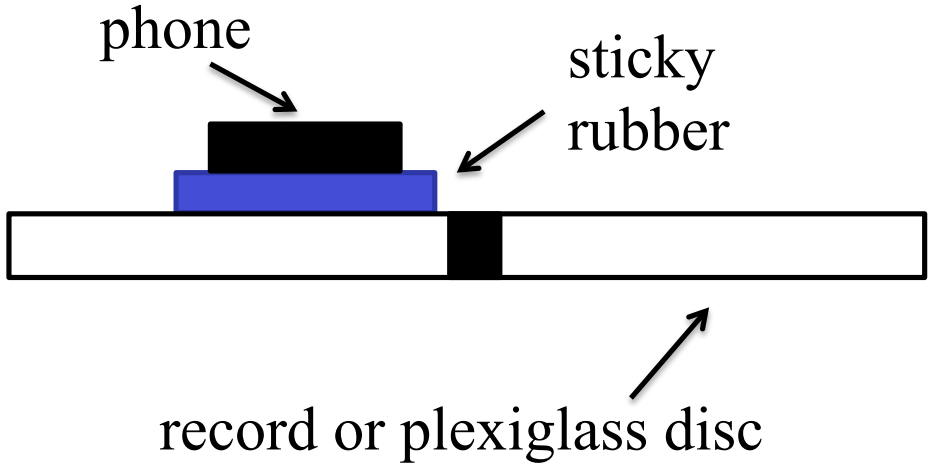
Introduction

- Alternative to time-coded vinyl for digital DJing and scratching via wireless accelerometer and gyroscope sensing
- Enhancement of turntable interaction & motor manipulation
- Leverage modern smartphones for prototyping
  - thin, compact form factor,
  - programmability,
  - sensors,
  - display



Introduction



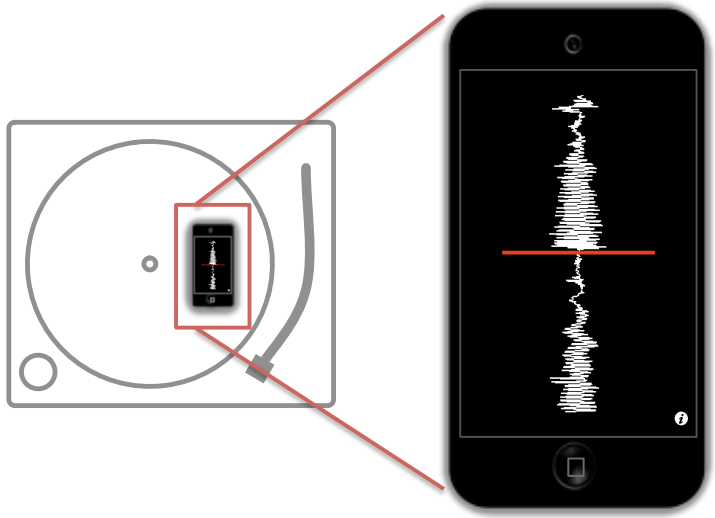
Immediate Benefits

- Can use any traditional turntable with minimal or no modification
- No wear, tear, or physical connection to turntable needle required
- Resistant to external vibrations and unwanted bumps or nudges
- Time duration not limited to record length

Interactions

Visual Feedback

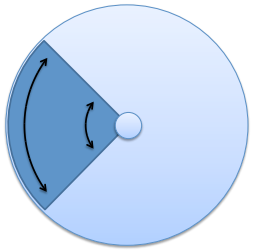
- Display of audio signal
  - Full loop between record and computer
  - Indication of DJ “drop”



- Possibility
  - Suggestions of where to scratch, etc.
  - Visual markers (tape, paint, post-it)
  - Multi-touch control of display and Fx

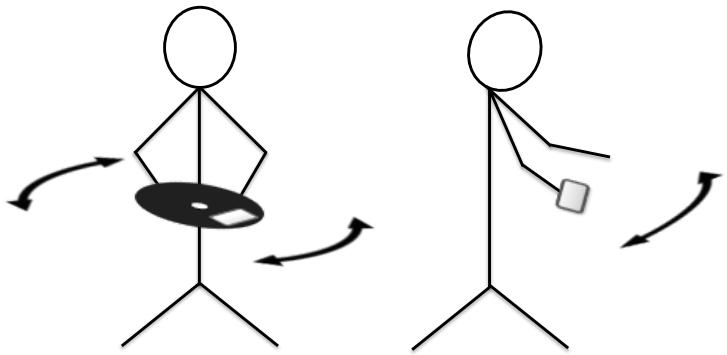
Gesture Modification

- Gestural processing & effects
  - Amplify or dampen gestures
  - Delay



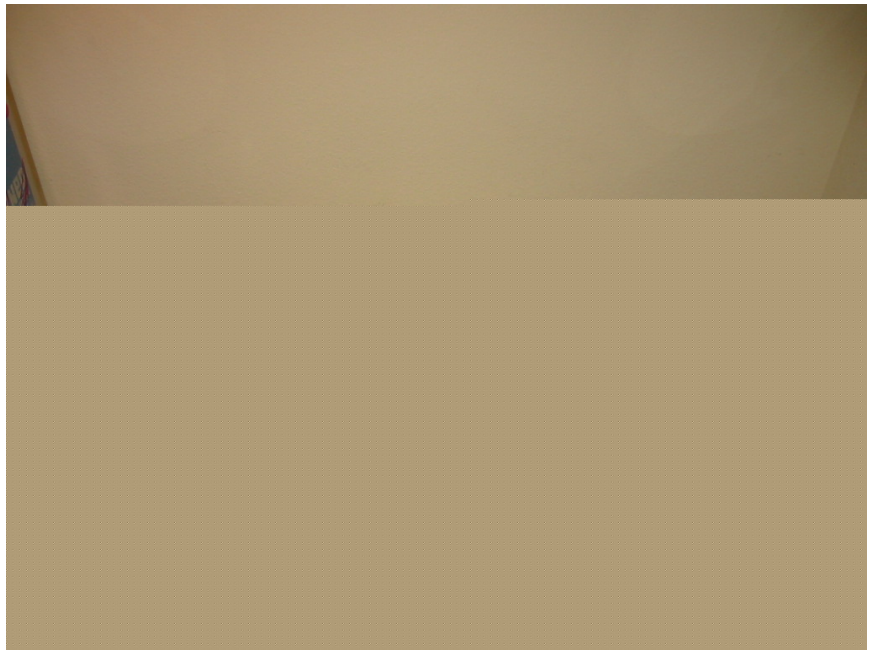
Scratch! Scratch! Scratch! …

- Untethered interaction



Implementation

Hardware



Demonstration Session H

Today, 13:30-14:30

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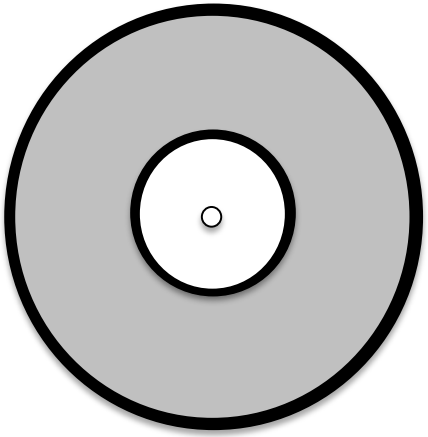
Future + Potential

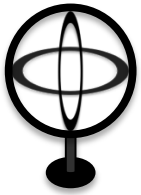


customized platter

+

thin, flexible display

+



wireless accel/gyro sensing

=

fun

Conclusions

- Enhancement of turntable interaction and motor manipulation
- Wireless sensing-based method for straightforward and surprisingly effective digital DJing and scratching
- Emphasis of on-record visual feedback for tangible interactive surface

Acknowledgments & Thanks!

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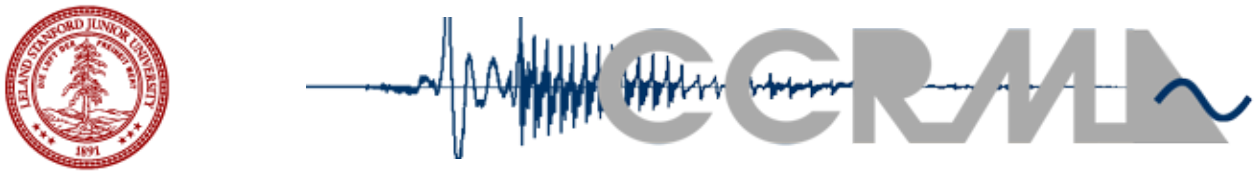

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