

# Vibrotactile Augmentation of an Open-air Music Controller

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October 15, 2013

# Overview

- No inherent vibrotactile feedback in digital musical instruments (DMIs) as in acoustic instruments.<sup>1</sup>

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- Vicon MoCap system as *open air* music controller. Hand motion→sound.

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# Overview

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- Vicon MoCap system as *open air* music controller. Hand motion→sound.
- Embedding actuators in the controller.

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- Can vibrotactile feedback convey musical information on the way the instrument is being played?

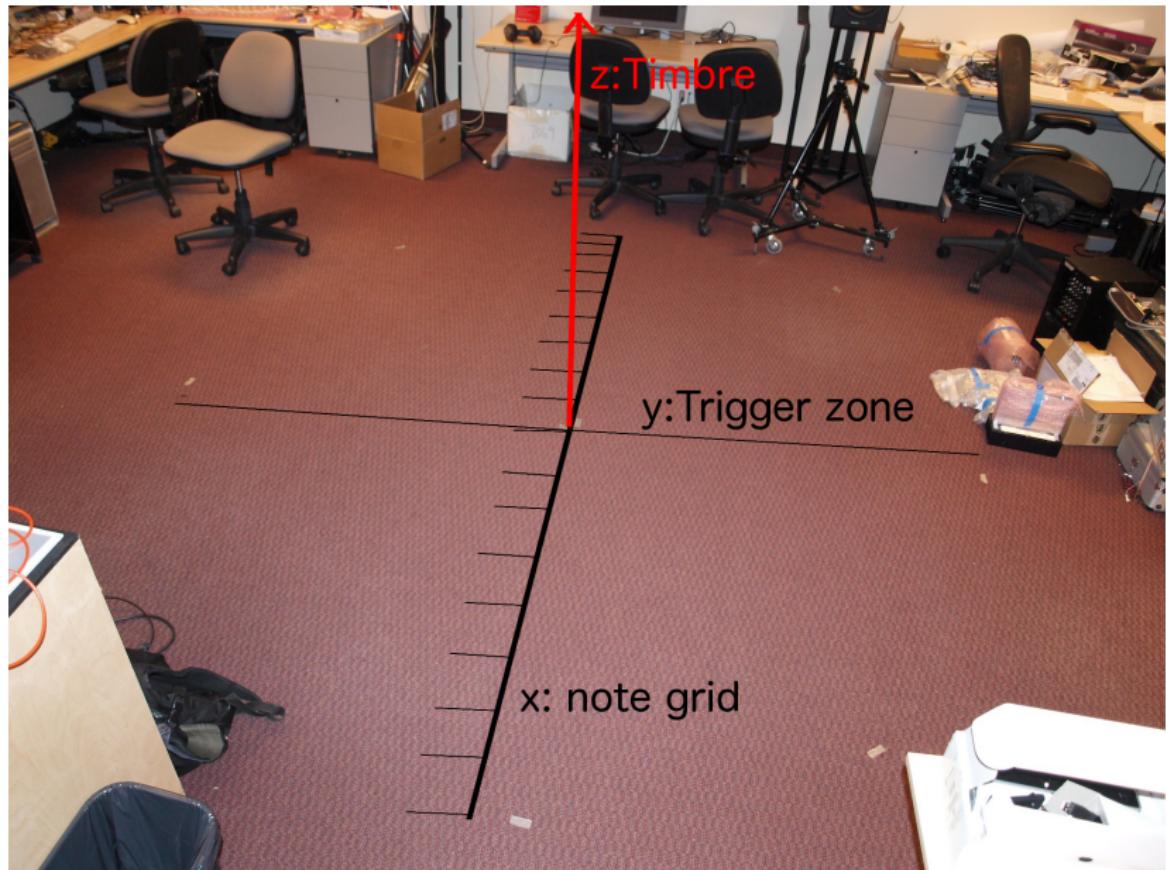
- Can vibrotactile feedback convey musical information on the way the instrument is being played?
- Is this preferable?

# Vibrotactile glove



Vibrotactile glove closeup

# Prototype 1: Audio Mapping



# Prototype 1: Vibrotactile feedback

- Sine.

# Prototype 1: Vibrotactile feedback

- Sine.
- Burst.

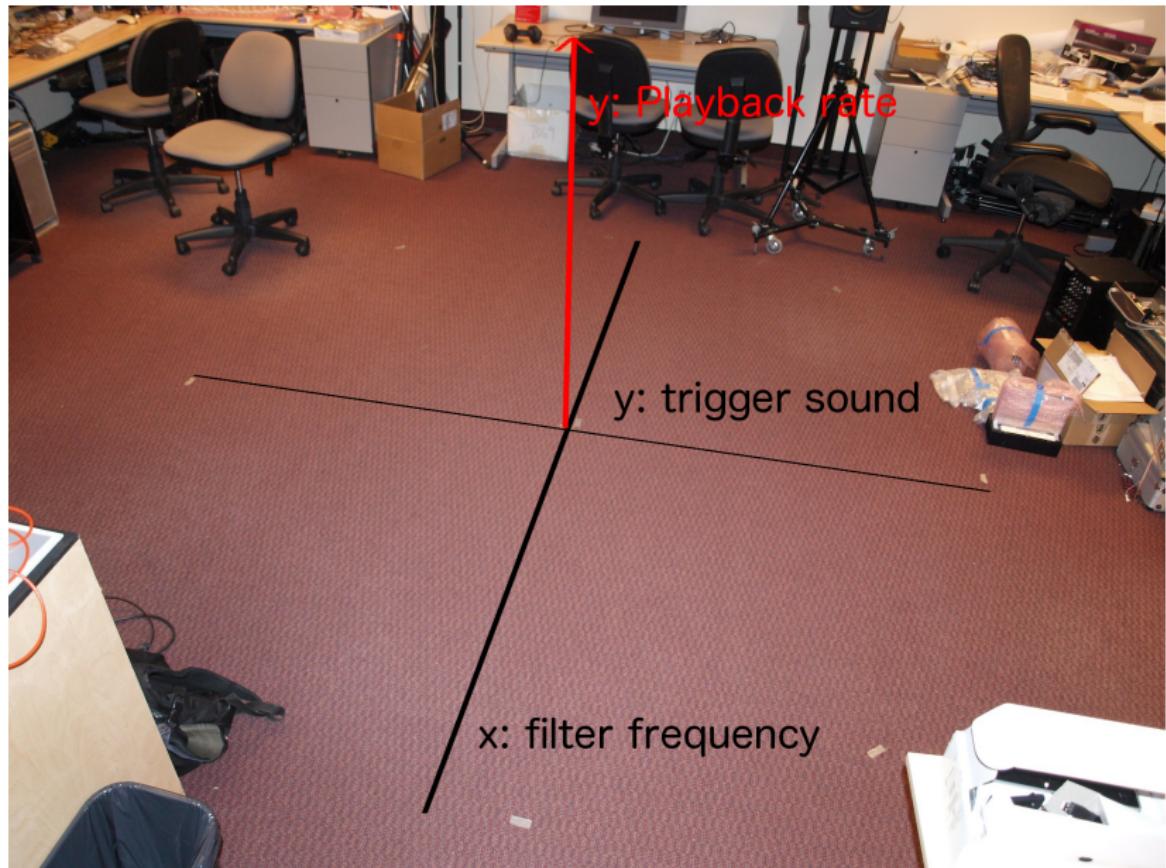
# Prototype 1: Vibrotactile feedback

- Sine.
- Burst.
- AM.

# Prototype 1: Vibrotactile feedback

- Sine.
- Burst.
- AM.
- Filtered audio.

## Prototype 2: Audio Mapping



## Prototype 2: Vibrotactile feedback

- Onsets.

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- Onsets.
- Filtered audio.

# Summary

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- Vibrotactile feedback can convey information on the way the musical parameters are manipulated.

## Future work

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- Wireless implementation.
- Tweak the vibrotactile synthesis and mapping.
- Conduct a formal study with more participants.

## Acknowledgments

Thanks to Marcello Giordano, Clayton Mamedes, Mark Zadel, Joseph Malloch, Stephen Sinclair, Aaron Krajeski, Darryl Cameron and Avrum Hollinger at McGill University. Also, thanks to the IDMIL students that participated in the evaluation.

## References I

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