

GEIST

Amplify the Sense of Wonder

甲斐

*Kai*

*grew up in a small village near Heidelberg, Germany*



*phD. from Passau, Germany, Summa Cum Laude (started in Innsbruck, Austria)*





*Assistant Professor at Osaka Prefecture University, Japan*

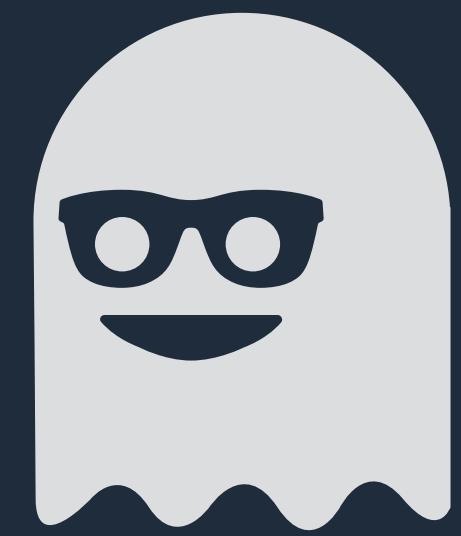




KEIO MEDIA  
DESIGN



# BACKGROUND



*Associate Professor*

*Graduate School of Media Design, Keio University*

*Research Assistant Professor*

*Osaka Prefecture University*

*Visiting Researcher at MIT Media Lab*

*MIT, Cambridge, USA*

*phD in Ubiquitous/Wearable Computing*

*University Passau, Germany*

*Collaborations with PARC, SUN, Deutsche Börse ...*

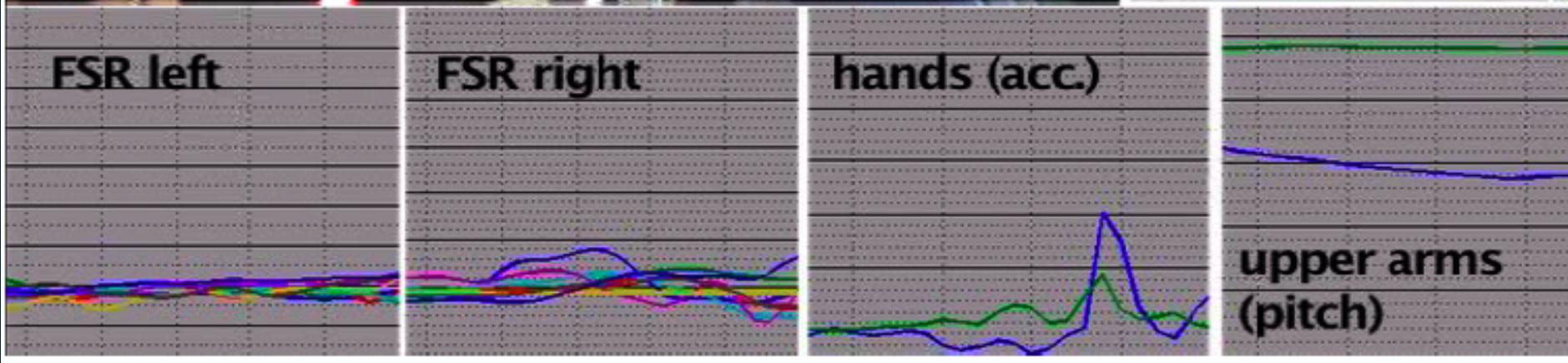
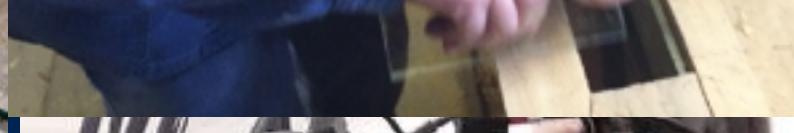
*Palo Alto, Grenoble, Frankfurt, Innsbruck*



# WEARABLE COMPUTING ~2000



Eyewear and Beyond - Kai Kunze





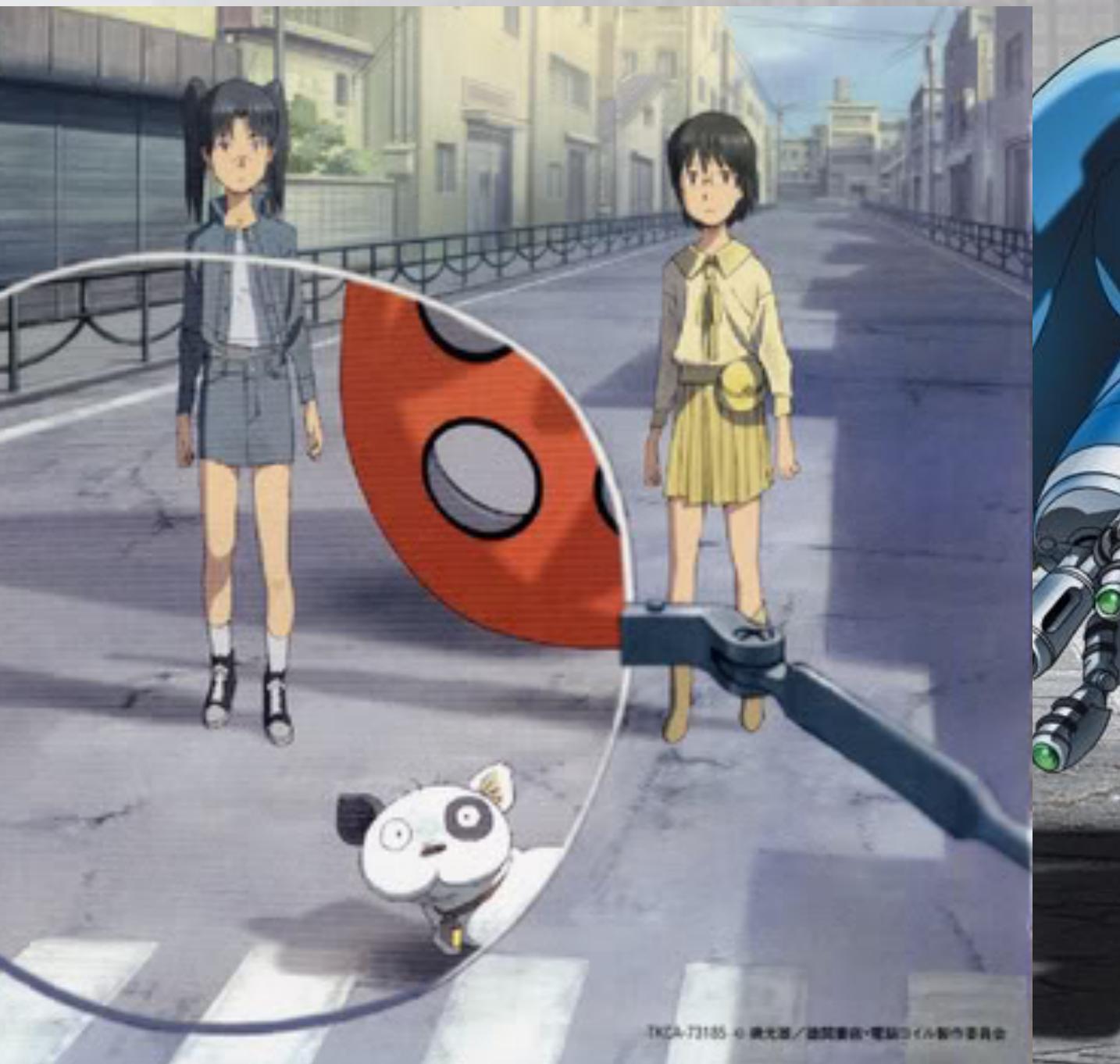
# GEIST

pronunciation: ['gaɪst] is a German word. Depending on context it can be translated as the English words mind, spirit, or ghost, covering the semantic field of these three English nouns.

# ghost in the machine

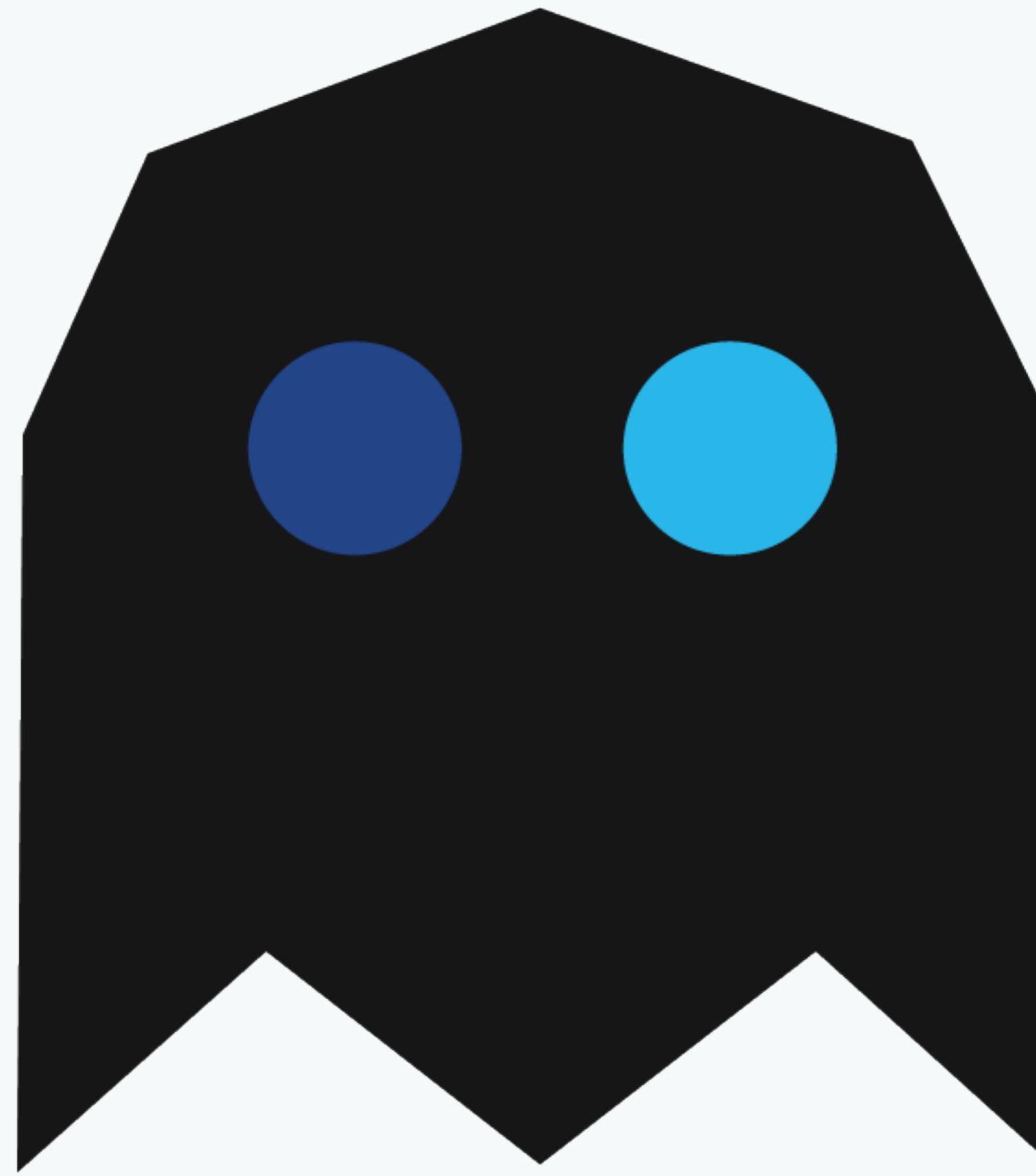
## Gilbert Ryle

To show the absurdity  
of René Descartes' mind-body dualism.



# Is this how we interact with the world?





eyewear  
computing

# Eyewear Computing



J!NS M3ME

3-axis accelerometer  
3-axis gyroscope  
2-axis EOG

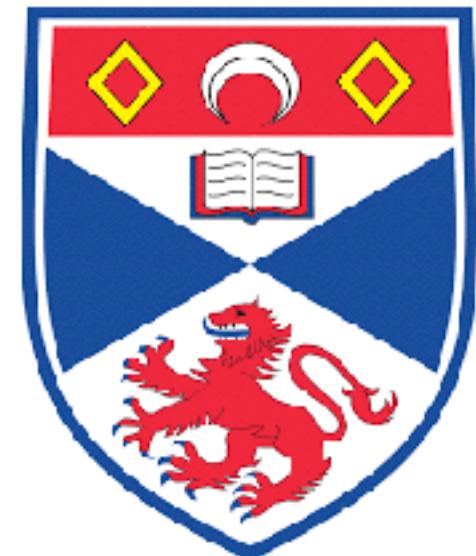


# Meme Academic Collaborations

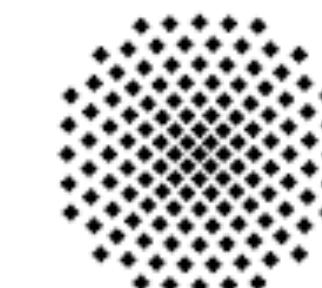
Used by over 30 research institutes (just the most prominent ones are highlighted with whom we publish)



mit  
media  
lab



Universität  
Stuttgart



UNIVERSITÄT  
PASSAU



German  
Research Center  
for Artificial  
Intelligence



MAX-PLANCK-GESELLSCHAFT



University  
of San Diego



Royal College of Art  
Postgraduate Art and Design



TECHNISCHE UNIVERSITÄT  
KAISERSLAUTERN



UNIVERSITÄT  
SIEGEN



University of  
South Australia

KAIST



# interactions



Thad Starner

ISWC<sup>2017</sup>  
Sept. 11-15, Maui, Hawaii



## Itchy Nose

Discreet Gesture Interaction using EOG Sensors in Smart Eyewear

Juyoung Lee<sup>1</sup>, Hui-Shyong Yeo<sup>2</sup>, Murtaza Dhuliawala<sup>3</sup>, Jedidiah Akano<sup>3</sup>, Junichi Shimizu<sup>4</sup>,  
Thad Starner<sup>3</sup>, Aaron Quigley<sup>2</sup>, Woontack Woo<sup>1</sup>, Kai Kunze<sup>4</sup>

<sup>1</sup>KAIST, <sup>2</sup>University of St. Andrews, <sup>3</sup>Georgia Institute of Technology, <sup>4</sup>Keio University

"Royalty Free Music from Bensound"

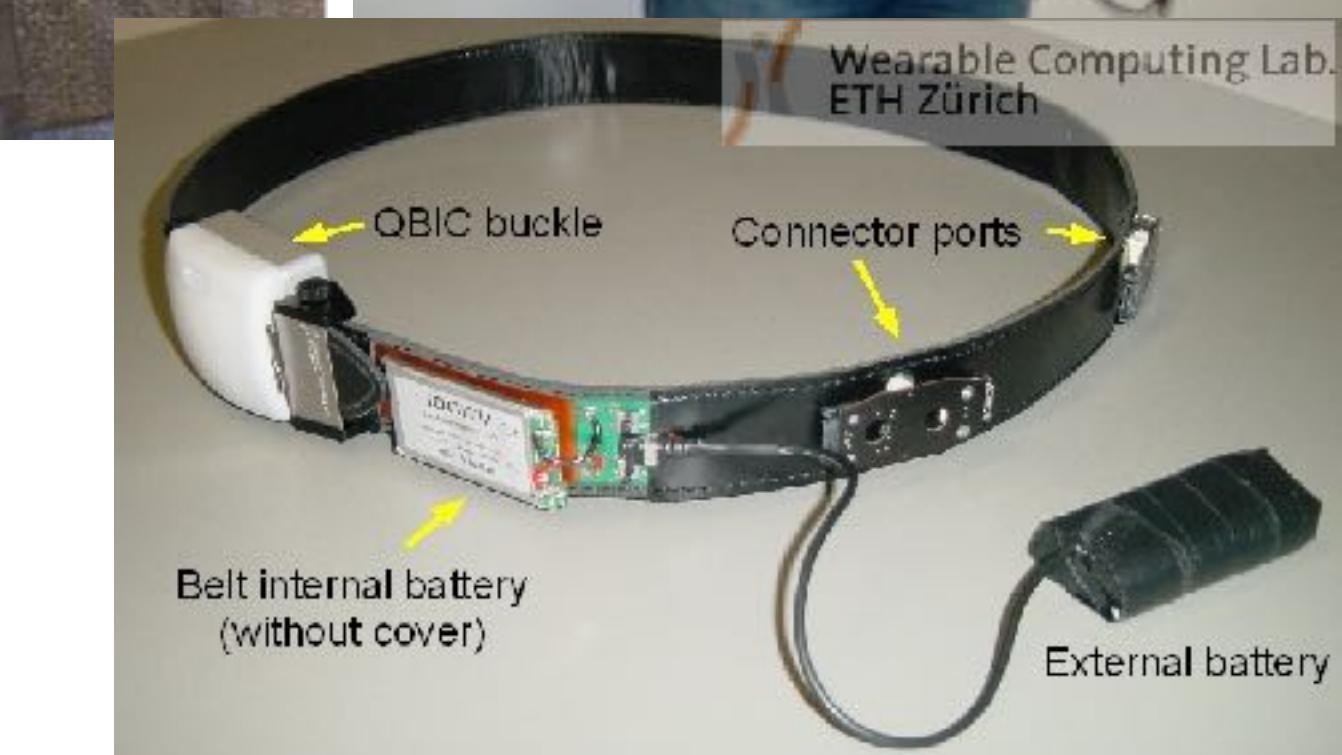
# Can we overcome our limitations by bringing tech closer to our body?

Empathy / Agency / Ownership

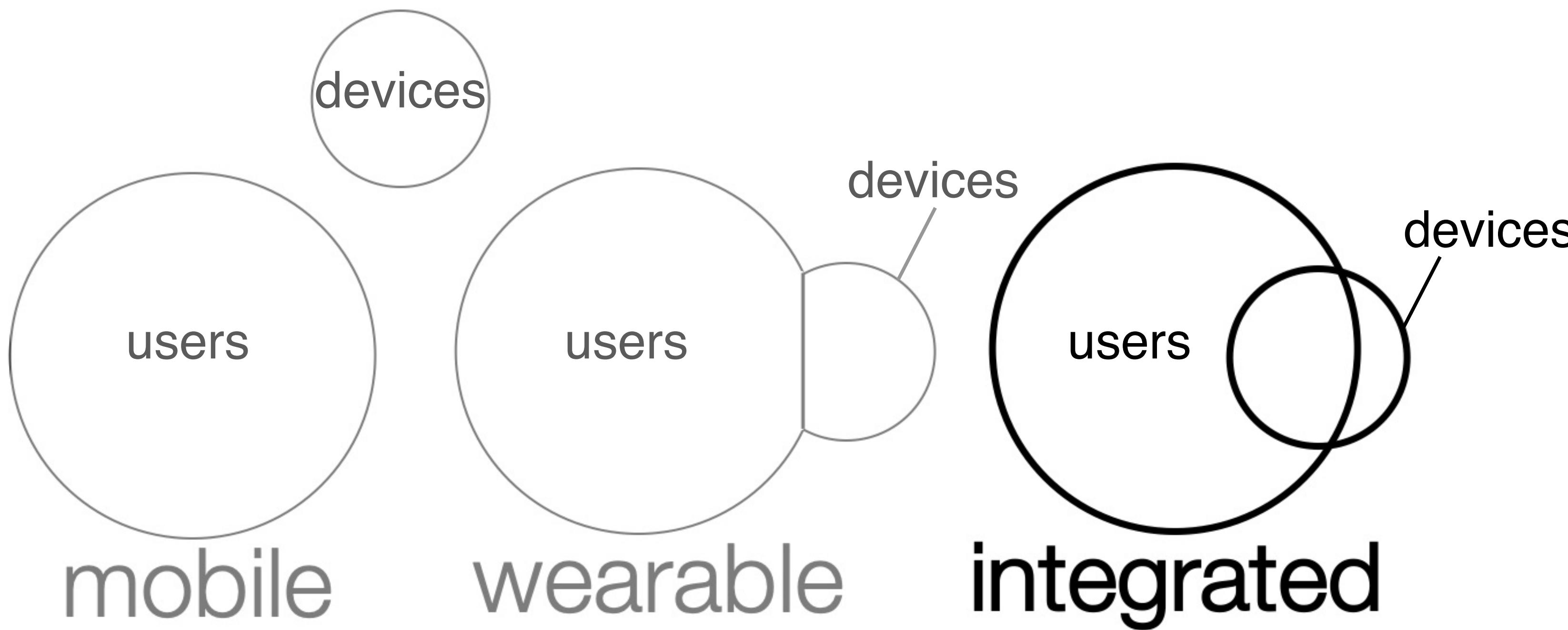
Extending our Body Schema

Making Wearable Tech overlap

With our body ...



# Towards Augmented Humans



Novel paradigm moving away from Human Computer Interaction

Towards Human Computer Integration/Augmented Humans

# artificial muscles



# Improves Skill Acquisition in Percussions

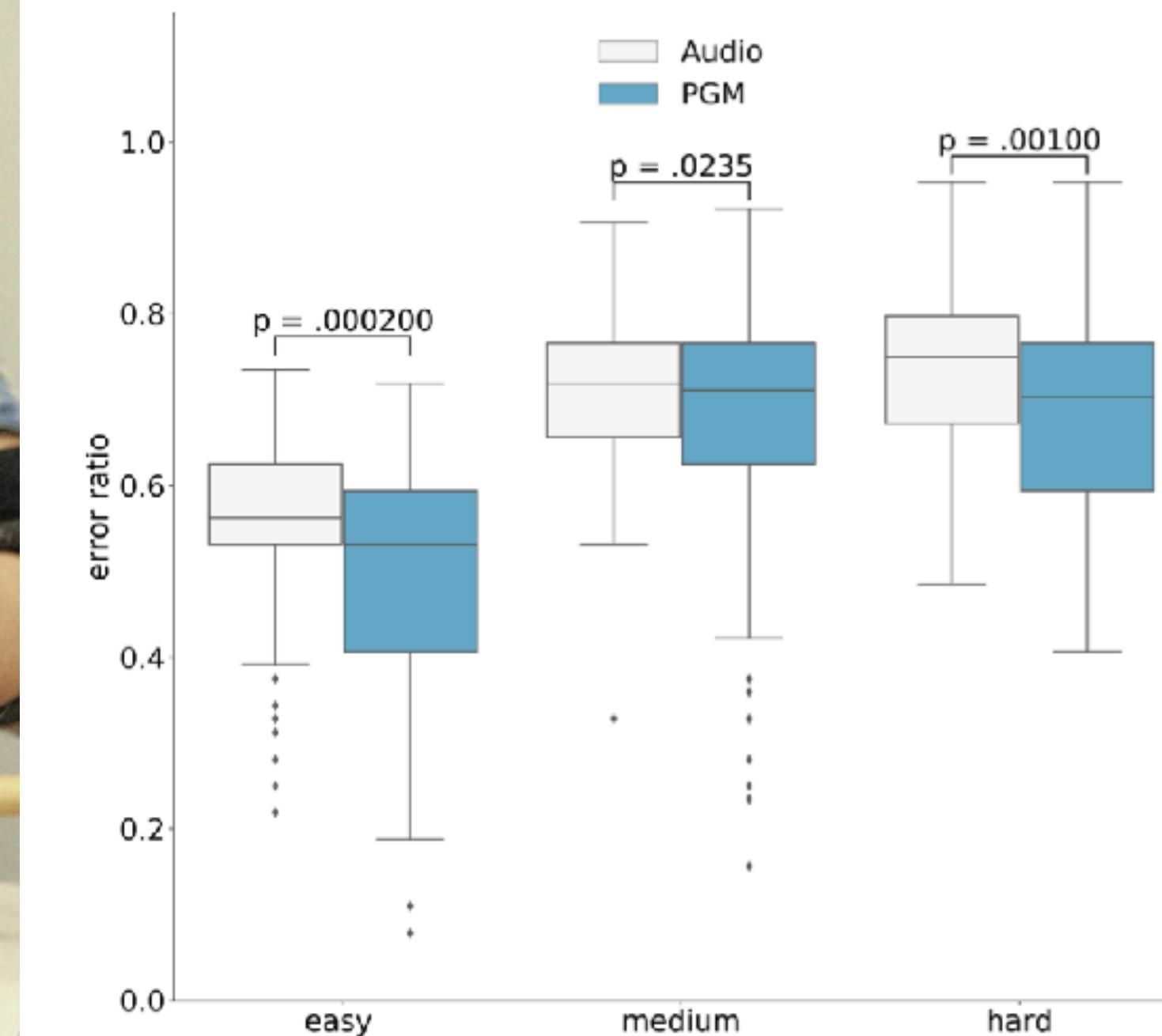
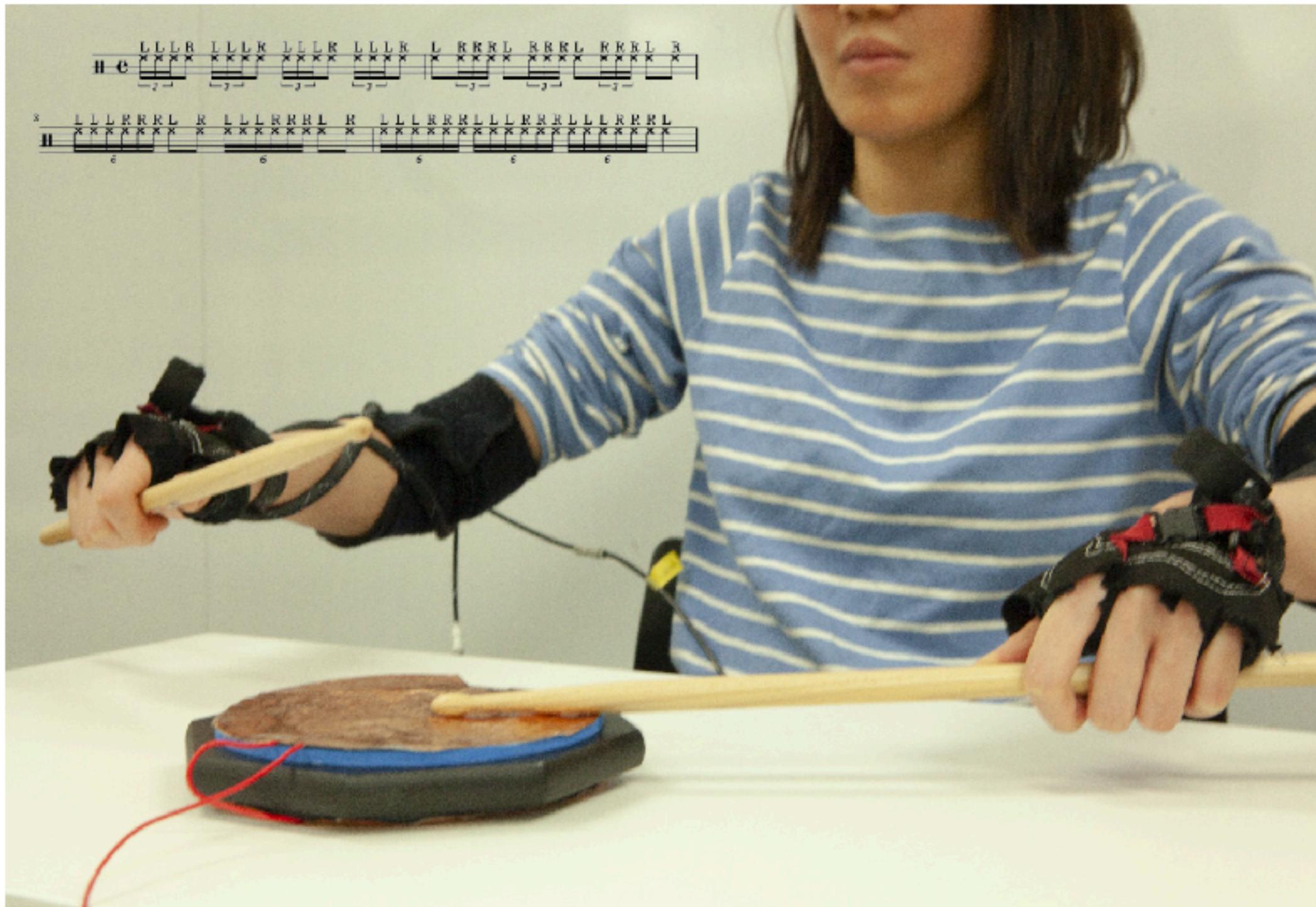


Figure 8. Results of error rate for each task.

Goto, Takashi, et al. "Accelerating Skill Acquisition of Two-Handed Drumming using Pneumatic Artificial Muscles." Proceedings of the Augmented Humans International Conference. 2020.

# Towards Enhancing the Collective Experience (collaboration with Mademoiselle Cinema and Embodied Media)



# Making the Audience part of the stage



# Research “Superstars”



Augmented Humans, UbiComp, ISWC, CHI (Human Computer Interaction)



Katrin Wolf

Hamburg University



Pedro Lopes

University of Chicago



Jamie Ward

UCL/Goldsmiths, London

# Partnerships & Collaborations

We publish together.

Geist Students are working with the institutions and visit them.



東京大学  
THE UNIVERSITY OF TOKYO

**KAIST**

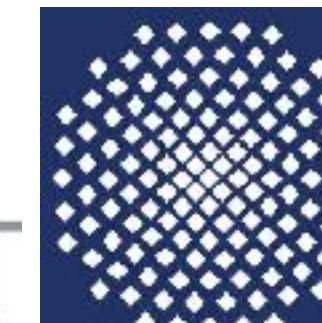
**Georgia Tech**



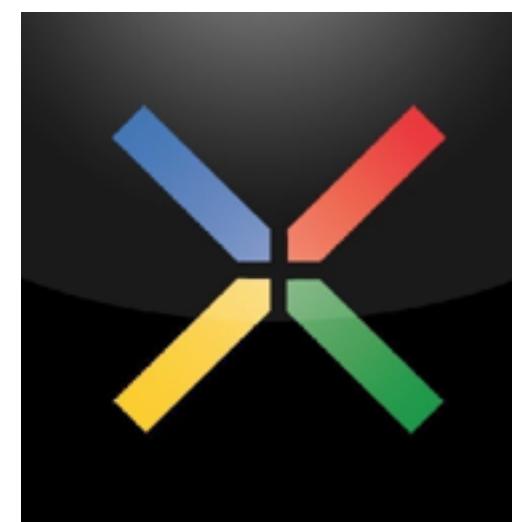
EMBODIED MEDIA



UNIVERSITÄT  
PASSAU



Universität Stuttgart



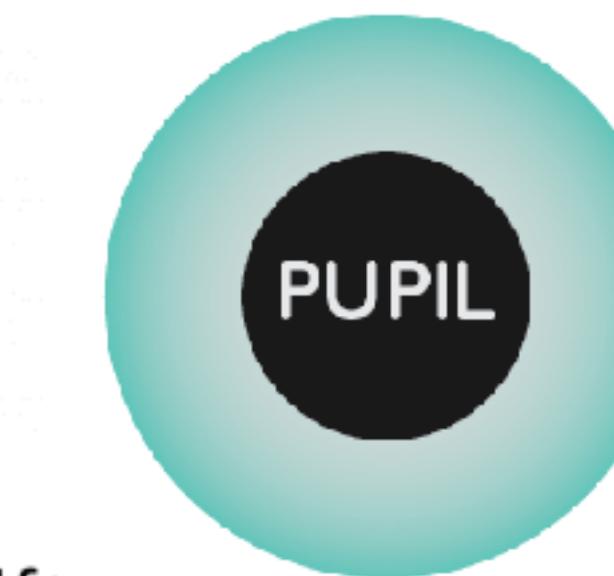
**TU Delft**

Delft  
University of  
Technology



**mpii**  
max planck institut  
informatik

**J!NS**



**Google**



大阪府立大学  
OSAKA PREFECTURE UNIVERSITY

**NTT**



Deutsches  
Forschungszentrum  
für Künstliche  
Intelligenz GmbH

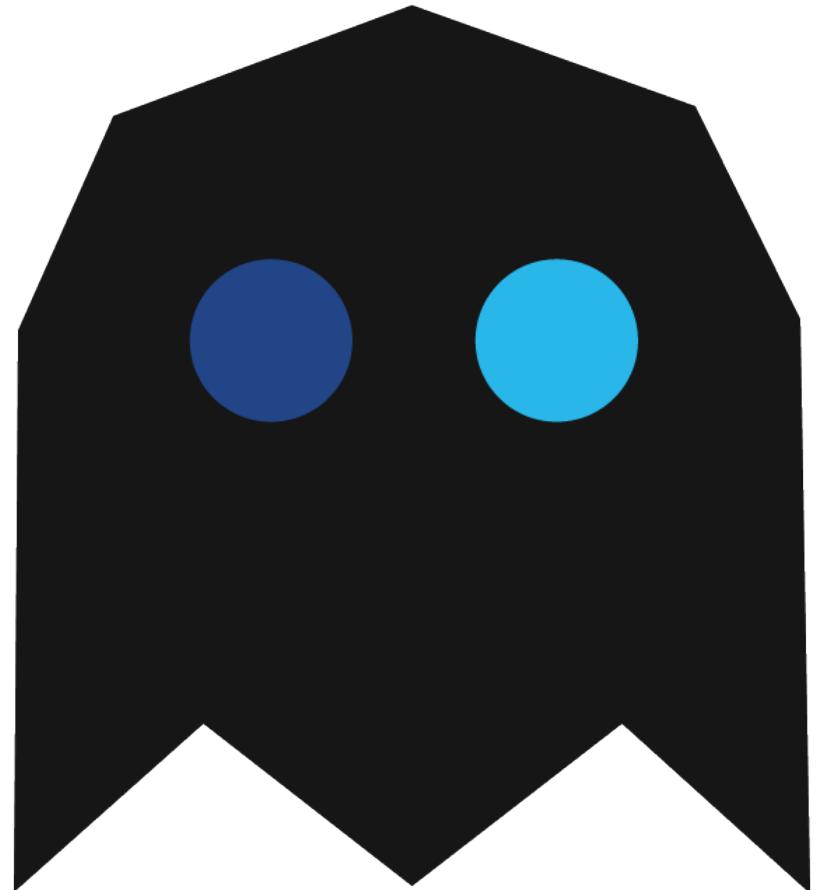
**超人**  
スポーツ協会  
Superhuman Sports Society

# Geist Team and Friends



kai@kmd.keio.ac.jp

# Questions, Remarks, Violent Dissent?



<http://augmented-humans.org/>

Geist Info Session this Friday 14:45 - 16:15



<http://kaikunze.de/>

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