

**BANANA**

Brainsourcing for Affective Attention Estimation

# Scientific background

**Goal:** BCI for understanding how people emotionally experience digital content

## Objective 1:

BCI-based  
annotation

Currently affective labeling is done manually (self-reported measures)

## Objective 2:

“in the wild”  
affective  
decoding

BCI is typically used *individually* as an *input device*

# Key challenges and potential impact

Recruiting people to the lab and data recording are *expensive* tasks

- Number of participants in BCI studies is typically very small ( $N \sim 10$  users)
- **training data is limited**

Because of this limitation, only basic Machine Learning models used so far

- this limits our capacity to better decode brain signals

Also brain signals are very noisy

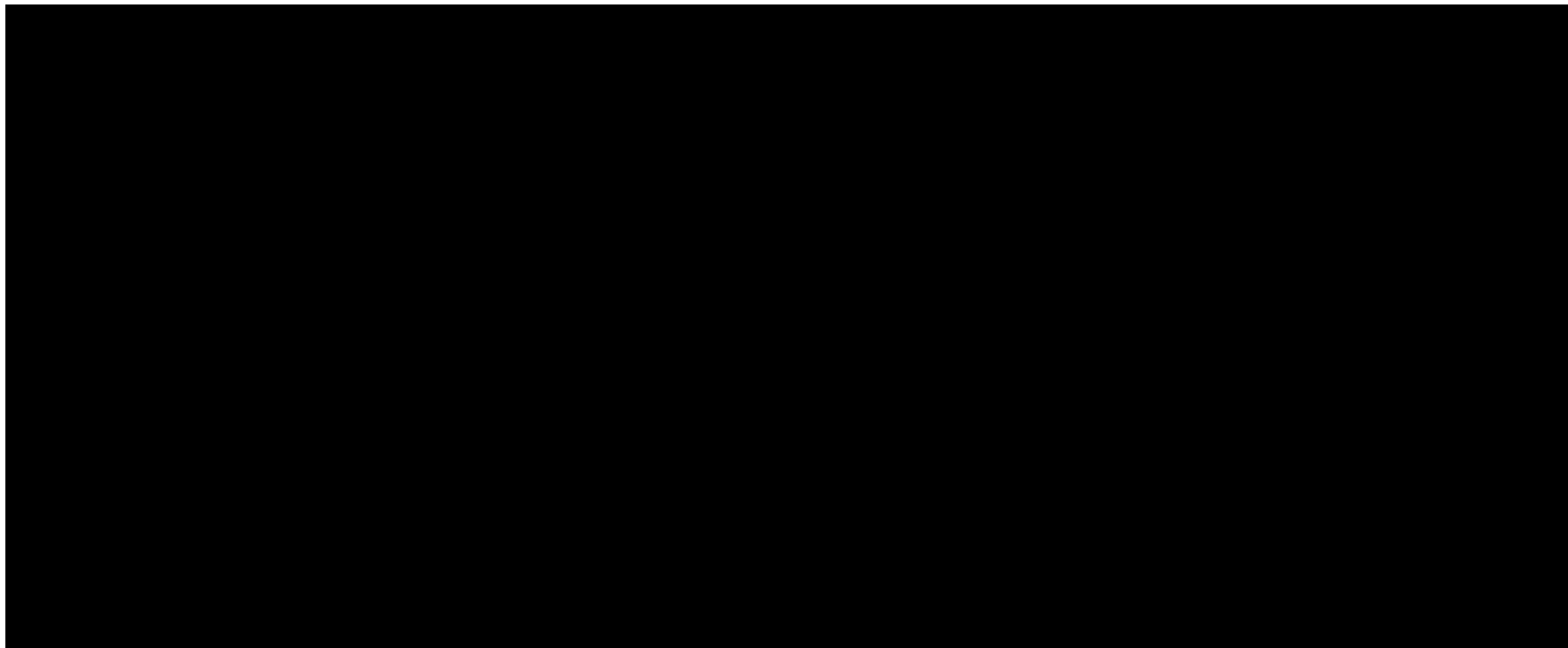
- to compensate, more data is collected from each user

Labeling digital contents *implicitly* from the (brain) crowd → **Brainsourcing**

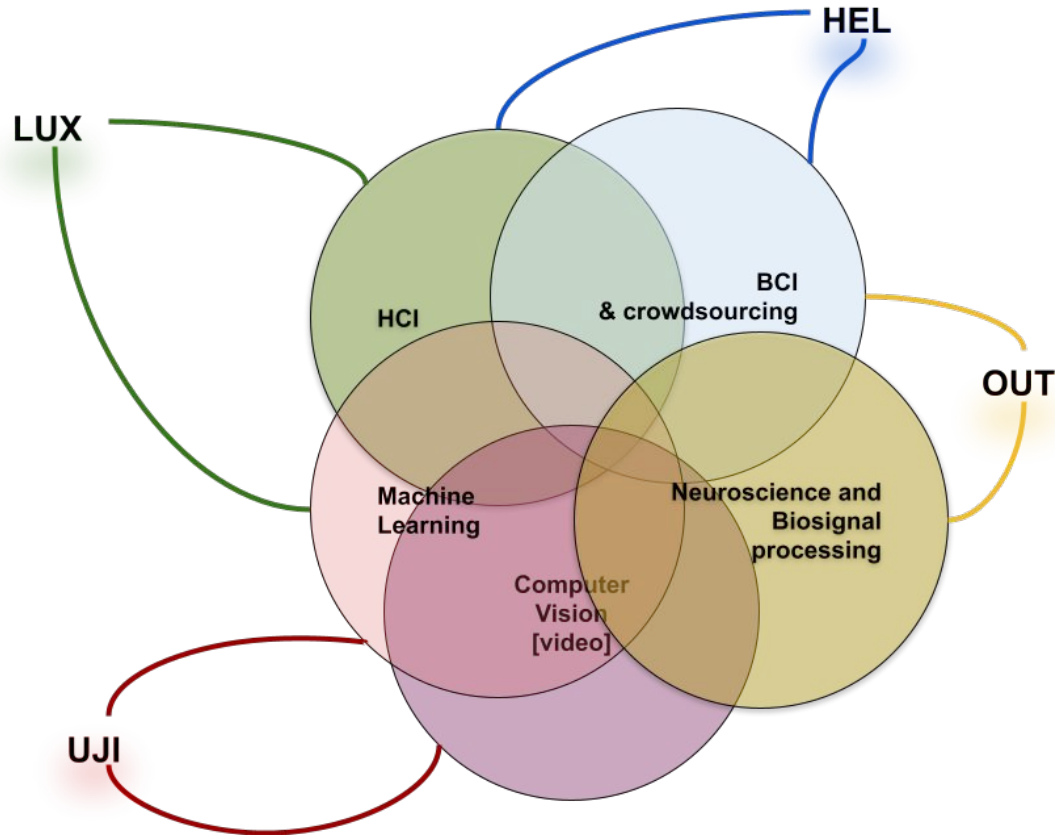
We propose to **use the crowd to reduce acquisition costs** (less trials required, less burden on the participant) with **increased accuracy and data diversity** (more participants involved) while people **react naturally** to digital content



# Proof of Concept: 2-class image labeling



# Partners



LUX



HEL



OUT



UJI

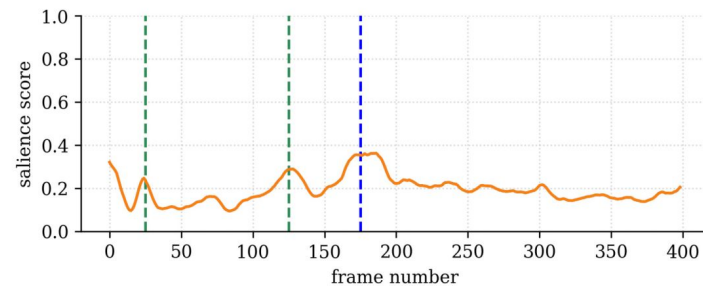
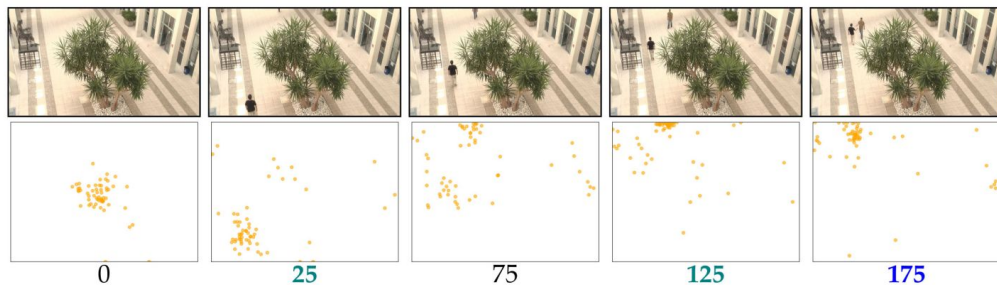


# Main scientific results

Project BANANA started in February

fNIRS data collection in progress

Very preliminary tests using the GLIMPSE metric [[Traver et al. 2021](#)]



# **Sustainability / Technology Transfer / Exploitation**

In the future, every person will wear a BCI device while interacting with computers

**Broader research impact** as well as **industrial impact** is expected

→e.g. VR, videogames, robotics



# Topic synergies

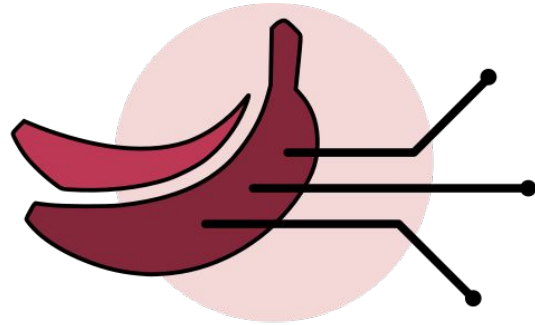
With **BITSCOPE**:

Implicit tagging of digital (visual) contents

With **GENESIS** and **ReHaB**:

Better characterization of the users' cognitive state

Thanks for your attention!



BANANA



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