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MediaEval

# Crowdsourcing for Affective Annotation of Video: Development of a Viewer-reported Boredom Corpus

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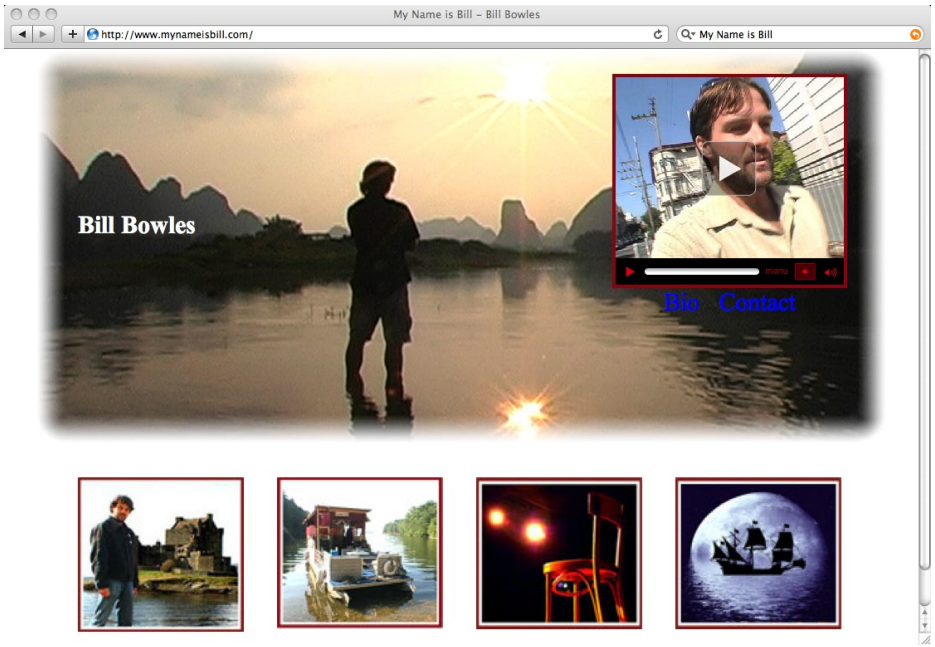
# Outline

- Background and motivation
- MediaEval 2010 affect task
- Affective computing corpora
- Two step crowdsourcing scheme
- Analysis of annotations
- Best practices

# MediaEval Affect task 2010

- **Use Scenario:** User would like interesting content to be recommended
- **Task:** Rank videos with respect to user perceived boredom
- **Data:** SPUG video series from blip.tv
- **Groundtruth:** Generated by human assessors



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# Which one is boring?

# Previous work in corpus development

- Psychological datasets (conventional)
  - Philippot , 1993
  - Rottenberg et al, 2007
- Our previous work (online)
  - Online annotations from more than 40 participants
  - 1300 annotations on 155 videos

(Soleymani et al, ACII 2009)

# Motivation

- Limitations of the previous corpora
  - Licensing and copyright
  - Limited resources
  - The whole collection annotated with as many as possible
- What is added with crowdsourcing
  - Large number
  - Diversity
  - Target population

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# Amazon Mechanical Turk

- Crowdsourcing platform that makes possible micro outsourcing of tasks
- Micro-tasks called Human Intelligence Tasks (HITs)
- HITs are carried out by MTurk workers (turkers)
- Typically used for tasks that lend themselves well to piecemeal work (multiple people make small contributions)
- Requesters can assign qualifications to turkers

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# High commitment crowdsourcing

- A single turker is needed to carry out a large set of HITs
- Different from typical piecemeal tasks
- 125 videos had to be annotated
- Two step approach
  - Step 1: qualification and personal information
  - Step 2: Carrying out the series by qualified turkers

# First step HITs and qualifications

- Only turkers with HIT acceptance rate >95%
- Qualification based on the performance on the first step  HIT
- Assigning the qualification and inviting for the main HIT

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# Second step HIT

**Qualifications Required:**
PetamediaVideoAnnotationQualification has been granted

**HIT Preview**

Which word best describes the emotion you felt while watching the clip?

- please choose -

Describe the documentary in one sentence

How boring was the video? (1 = very boring and 9 = not at all boring)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
|---|---|---|---|---|---|---|---|---|---|---|
| boring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | not boring |

How much did you like the video? (1 = I hated it and 9 = I liked it a lot)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
|---|---|---|---|---|---|---|---|---|---|---|
| dislike | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | like |

How long was the video clip? (write your estimation, for example, three minutes and half will be written 3:30, write 3 in the minutes box and 30 in the seconds box)

: 

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# Second step HIT

- Target information
  - Self reported boredom score
  - Self reported like/dislike rating
  - Time perception
- Context information
  - Time of day
  - Mood word question
- Validation Question
  - Description

# Analysis of annotions

- Pilot HIT 169 workers
  - 88% watch online videos on internet
  - Gender: 105 male 62 female and 2 unknown!
  - Age: Mean = 30.5 STD = 12.4
- 47% of the turkers in the first step carried out the single HIT completely and earned the qualification
- 40% of the qualified turkers skipped parts of the videos

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# Best practices

- The step approach worked well for our high commitment task
- For high commitment tasks, five times as many workers are needed to be invited for the first step
- Establishing trust
  - Interacting with workers
  - Granting bonuses
  - Accepting HITs as quickly as possible