Factors influencing affective acuity

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Today’s Topics

➢ Background Inspiration
➢ Emotion and Empathy Experiment
➢ Summary of Research Activities
➢ Proposed Analysis
➢ Future Discoveries
Background Inspiration

• Human emotion is complex
• Human Centred Computing (HCC)
  ➢ Human emotion
  ➢ Affective computing
• What prior conditions have an impact on an individual’s affective perception?
• Potential influencing factors:
  ➢ Nutritional intake
  ➢ Doing an activity
  ➢ Something else?
Emotion and Empathy Experiment (1)

- **Variables**: Caffeine intake, taking a short walk
- **Control group**: Read magazine
- **Equipment**
  - Empatica E4 wristband
  - TheEyeTribe eye-tracking device
  - Logitech C922 Pro Stream Webcam
- **Types of data**: participant’s physiological signals, eye-gaze tracking, facial expressions, questionnaire responses
Emotion and Empathy Experiment (2)

• 44 participants
• **Demographic interest**: ethnicity, gender
• **Tasks**
  ➢ 15-min activity, one of the following:
    1. Drink coffee/tea
    2. Go for a walk
    3. Read magazine
  ➢ Watch a series of short video clips and answer questions related to the portrayed emotions (truth or lie)
Summary of Research Activities

• Literature survey - complete
• Experiment design - complete
• Experiment - complete
• Data analysis - in progress
• Write-up - in progress
• Report submission - due on 29 May 2020
Proposed Analysis

• Compare participants’ **physiological responses vs questionnaire responses**

• Pre-processing
  - Normalization
  - Filtering
  - Feature selection

• For the 3 different activity conditions (caffeine, exercise, reading), evaluate:
  - Any effect (improvement, deterioration, no difference) on affective perception?
  - Any difference in machine learning model prediction accuracy?
Future Discoveries

• Insights on human creativity and empathy
  Reinforce better ways to:
  ➢ Increase retention
  ➢ Promote creativity
  ➢ Encourage emotional awareness
  ➢ Improve therapy sessions