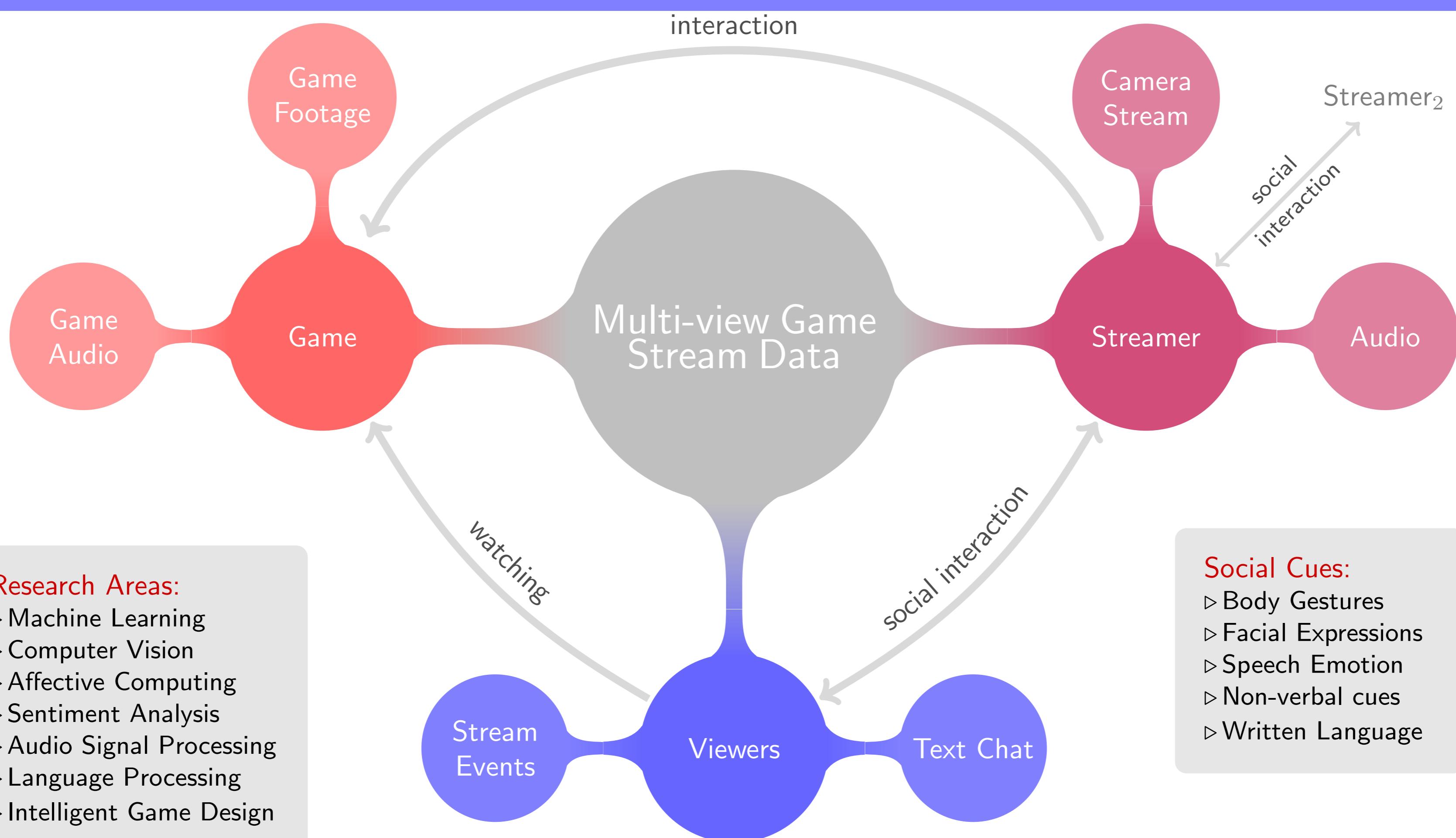


MULTI-VIEW BEHAVIOURAL AND EMOTIONAL MODELLING OF VIDEO GAME STREAMERS



OVERVIEW

Game Streaming (e.g. Twitch.tv) is a new form of entertainment where players live stream themselves playing a game whilst interacting with the audience. Streaming is an exciting paradigm for modelling behaviour and emotions because it's many data views, seen above, offer unique challenges and opportunities for teaching computer to understand affect.

We can model:

- **Interactions** e.g. between the streamer and the game/viewers
- **Emotions** e.g. frustration, anger, joy, and engagement
- **Behaviours** e.g. mimicry, conflict, debate



MOTIVATION AND CHALLENGES

Motivation:

- Rich multi-view data e.g. web-cam, game footage, chat logs, and audio
- Streamer behaviour is complex, spontaneous and naturalistic
- Streams contain affect, from streamer's web-cam and audio, along with the stimulus, in the form of game footage and chat logs

Challenges:

- Occlusions e.g. web-cam angle, gestures, and clothing
- Unsyncronised views, e.g. delayed chat response, requiring alignment
- Stream chats often contain heavy usage of emojis and slang

CURRENT WORK – HIGHLIGHT DETECTION

How can we detect and model highlights in a game stream?

- Novelty is considered a proxy for highlights (highlights are naturally novel)
- Novelty is modellable by deep unsupervised learning e.g. Conv-AEs and LSTMs
- 3 types of highlights discovered: streamer-led, game-led and viewer-led
- Our model uncovered 77% highlights: 27% streamer-led, 26% game-led and 24% viewer-led
- However, context is important to the viewer but not understood by a computer

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