All the Feels: Introducing Biometric Data to Online Gameplay Streams
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EMOTION AND AROUSAL TOOLS

<table>
<thead>
<tr>
<th>Name</th>
<th>Video</th>
<th>Location of Device</th>
<th>GSR</th>
<th>HRV</th>
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</thead>
<tbody>
<tr>
<td>Empatica</td>
<td>No</td>
<td>Worn, Wrist</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Affdex</td>
<td>Yes</td>
<td>Webcam</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Microsoft Band</td>
<td>No</td>
<td>Worn, Wrist</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Apple Watch</td>
<td>No</td>
<td>Worn, Wrist</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Muse</td>
<td>No</td>
<td>Worn, Head</td>
<td>No</td>
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</tr>
</tbody>
</table>

Comparison of consumer grade biometric devices

Microsoft Band – tracks heart rate and GSR
- Easily integrated SDK
- Minimal distraction for Player
- Maximal biometric data gathering

Affdex – tracks levels of emotion
- Facial expression analysis software
- Real time detection
- Label player’s emotions

Gameplay stream with addition of emotion data

Females found All the Feels more interesting than males
- 20% of the user base on Twitch is female. This tool could potentially increase female interest in streaming platforms

How can we improve the spectator experience by exposing streamers’ emotions?

SPECTATOR EXPERIENCE

Heads up display on Twitch of All the Feels. The blue box is the webcam display, the orange box is the Affdex output, the purple box is the GSR and HR data, and the red box is the screen size

Spectator reaction to stream

Male participants said they were interested in the biometric data but did not feel more connected to the streamer

Need for adding this emotional data to existing Twitch overlays

Players were more expressive because they knew their emotions were being tracked

Tool could be useful for stress regulation in games