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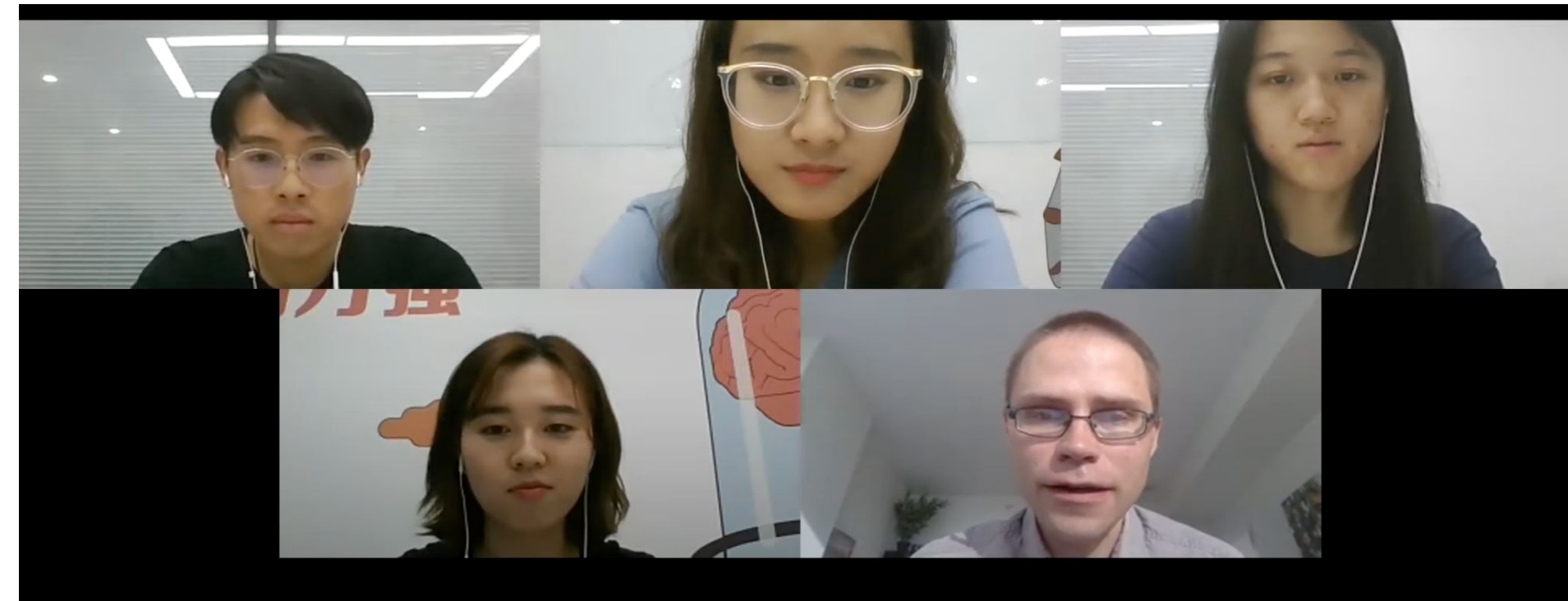
Recognizing Facial Mimicry in Virtual Group Conversations

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MOTIVATION

Sample frame from a virtual meeting [1]

- COVID-19 pandemic restricts many group meetings to video-conferencing platforms
- Limited camera view occludes body language cues, adding difficulties to social interaction
- Faces are at the forefront of group interaction, with facial mimicry as a key component
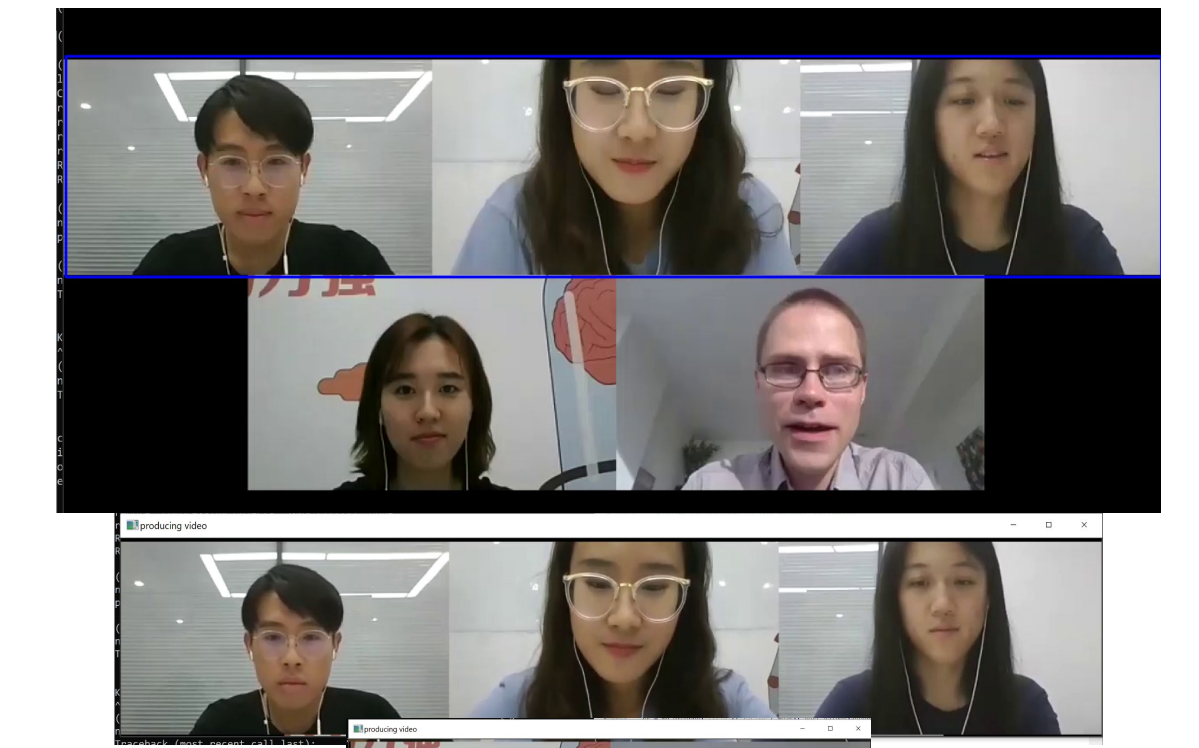- Lack of research on facial mimicry in virtual settings

OVERVIEW

Sample frame from a virtual meeting [8]

- Facial mimicry exists in face to face interaction [2]
- Smiling is the most common facial expression mimicked, and can improve shared group empathy [2]
- One-sided facial mimicry through a screen has been shown to exist [3]
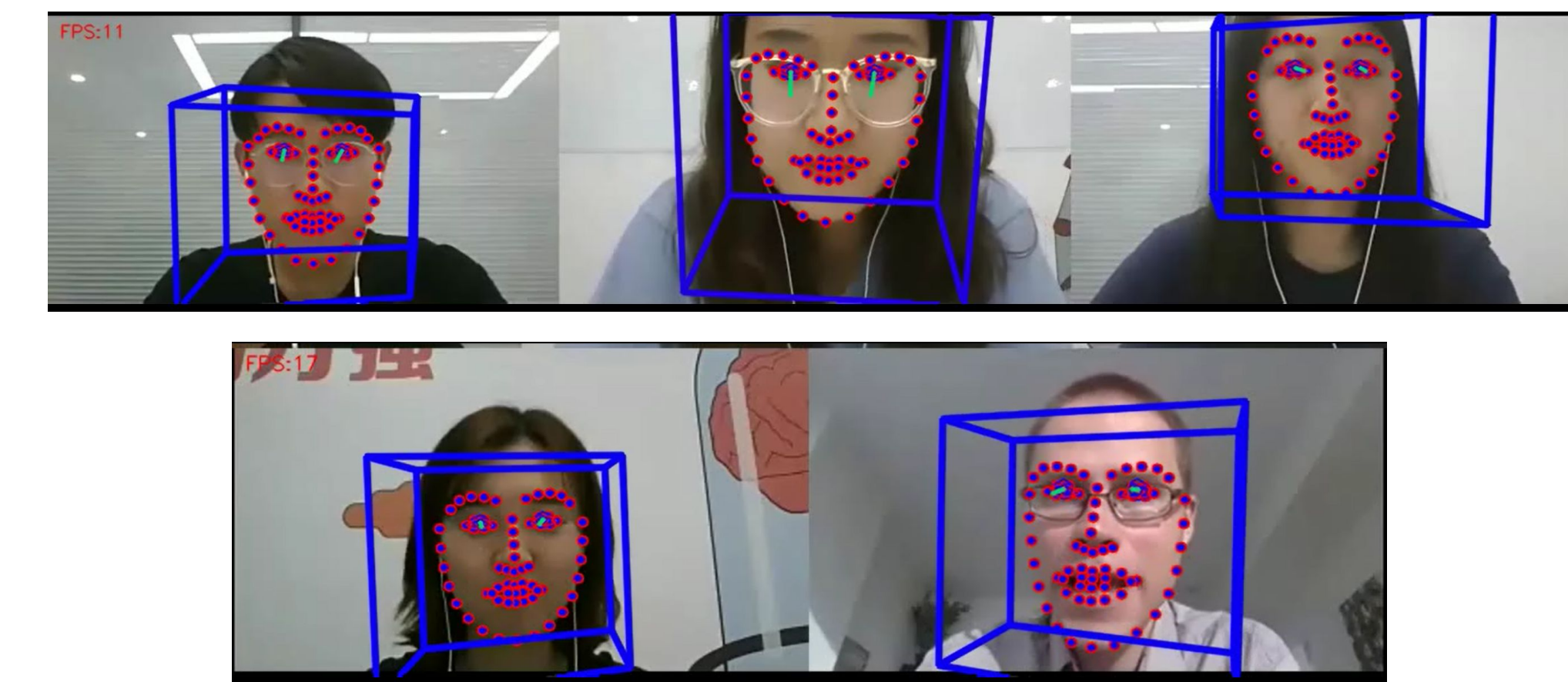
METHODS

1 Data Source

- Downloaded 8 videos of virtual group meetings from YouTube
- The videos consisted of 3 hours of footage

Cropped videos [1]

2 Face Feature Information

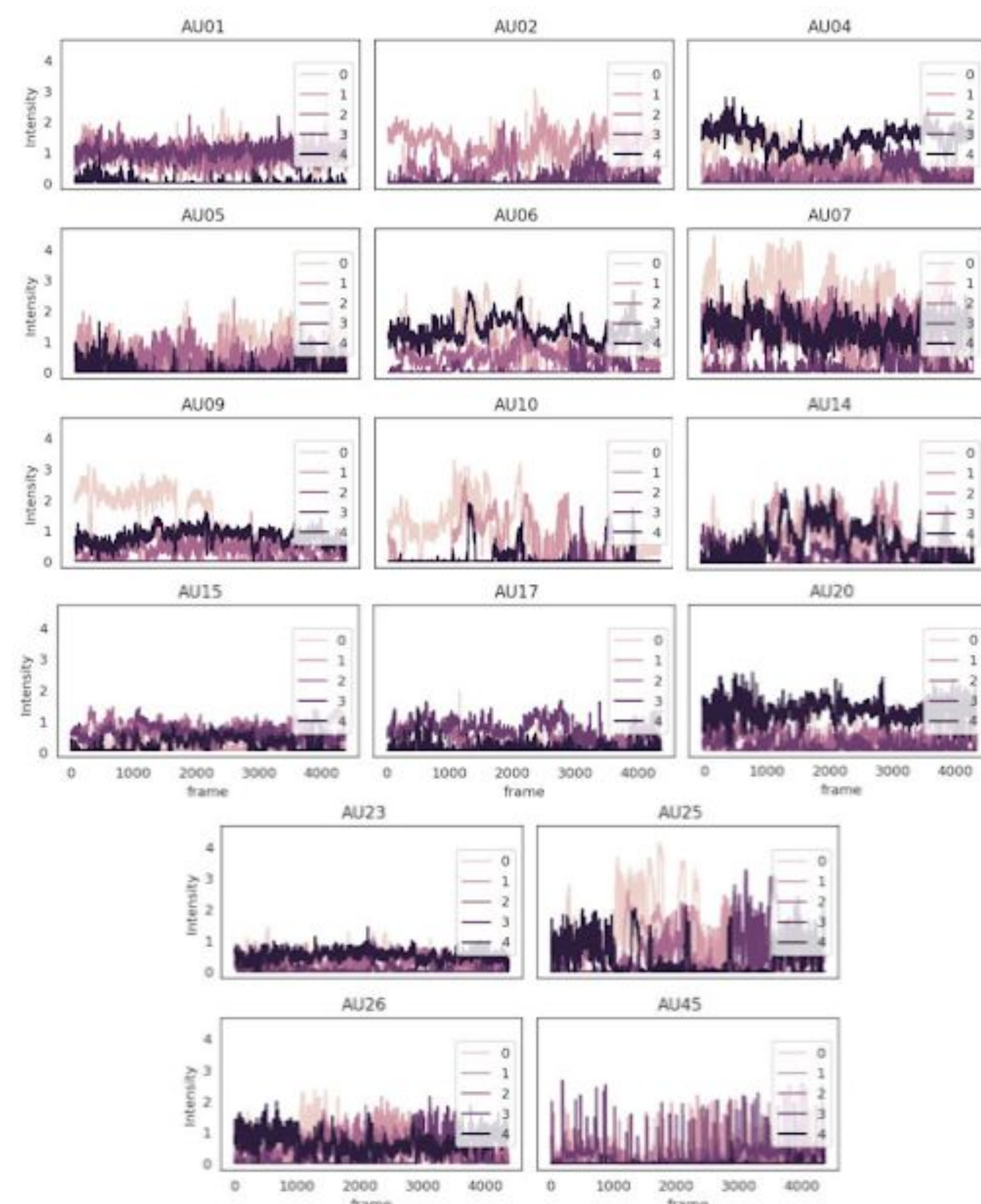- Ran videos through OpenFace [4] to detect facial landmarks and facial action units

Detected facial features [1]

3 Facial Action Units (AUs)

- Extracted facial action unit activity [5]
- AU- Contraction/relaxation of specific facial muscles
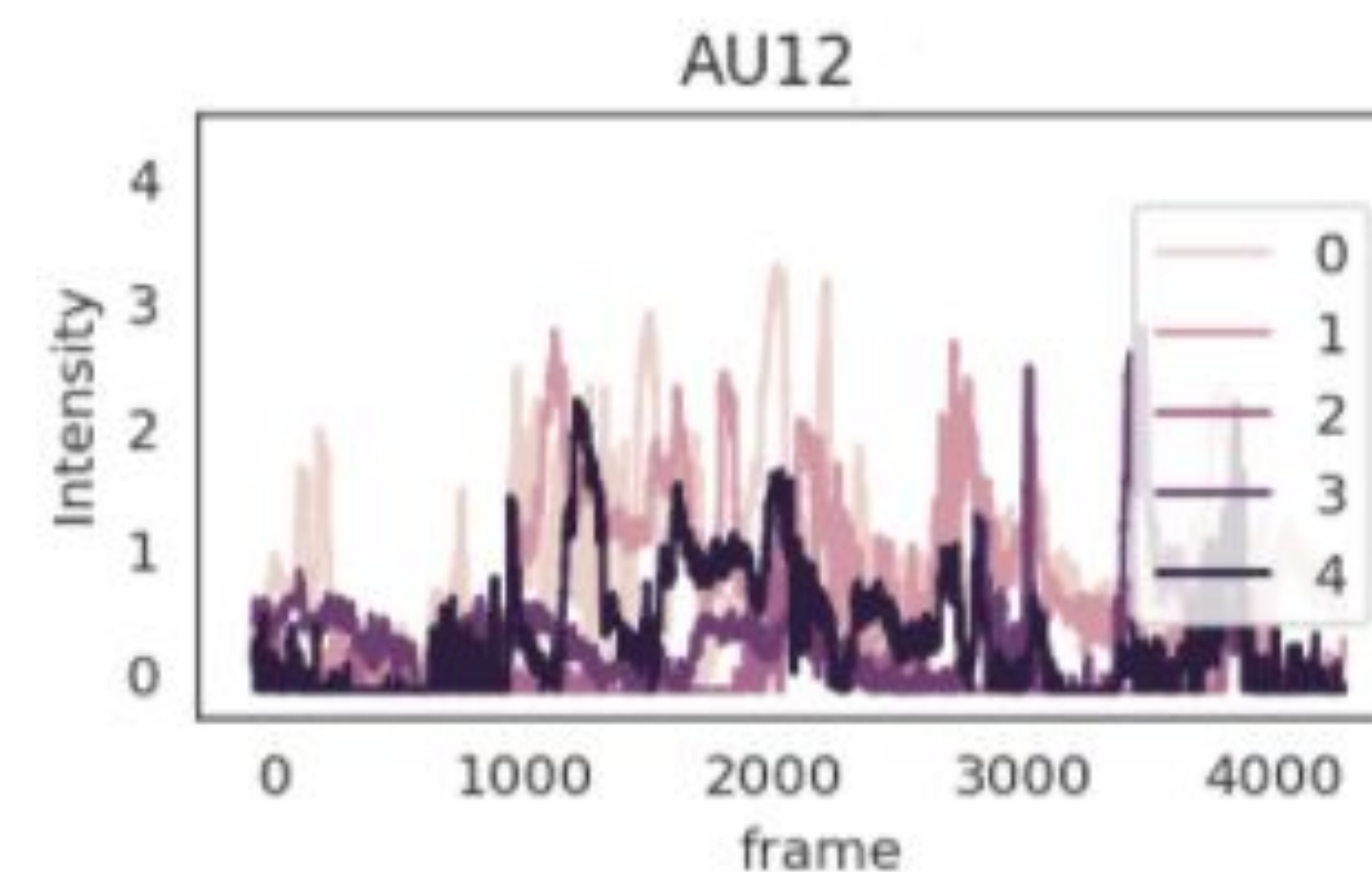- Focused on action units 6 and 12, commonly related to smiling

RESULTS

Sample AU intensity predictions by time for each face

Correlation with time lag of AU12

Face Id	0	1	2	3	4
0	1.0	0.476	0.449	0.062	0.434
1	0.476	1.0	0.113	-0.047	0.485
2	0.449	0.113	1.0	0.103	0.379
3	0.062	-0.047	0.103	1.0	-0.33
4	0.434	0.485	0.379	-0.33	1.0

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