









The UDIVA dataset: **Current Research and Future Opportunities**

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Motivation

Socially intelligent systems have to be capable of accurately perceiving and inferring the particularities and state of different individuals, so as to **provide a more effective, empathic, and natural tailored communication**.

To embody this human likeness into such systems, it is imperative to have a **deeper understanding of real human-human interactions** first, to computationally **model both individual behavior and interpersonal influence**.

Motivation



Shared history Characteristics of situation and task/topic at hand Societal norms Environmental factors



Goal:

Move beyond automatic individual behavior detection to foster the

development of context- and interlocutor-aware models for different tasks.

The UDIVA dataset

188 dyadic sessions

147 participants, 55.1% male

From 4 to 84 years old (M=31.29), 39% students

90.5 h of dyadic interactions

Avg. of 2.5 sessions/person

43% of interactions among known people

From 22 countries

(68% from Spain)

72% speaking Spanish

20% speaking Catalan

8% speaking English

50% of interactions include both interlocutors with Spain as country of origin

Including

6 TPVs + 2 FPVs + 3 mics + 2 HRMs

Sociodemographic data

Pre/post-session mood + fatigue level

Personality (self-reported + perceived)

Relationship among interactants

Conversation transcripts + speaker ID



Palmero et al. Context-Aware Personality Inference in Dyadic Scenarios: Introducing the UDIVA Dataset. WACVW, 2021.

The UDIVA dataset



Free conversation (e.g., *how was your day*?, hobbies, past experiences, future plans).

Allows analysis of common conversation constructs, such as **turn taking, synchrony, empathy and quality of interaction**.



Participants build a Lego together following the instructions leaflet, with 4 difficulty levels.

Fosters collaboration, cooperation and joint attention, and elicits leader-follower behaviors and human-object interaction.

The UDIVA dataset

ANIMALS GAME

Participants ask 10 yes/no questions each to guess the animal they have on their forehead, with 3 difficulty levels.

Reveals **cognitive processes** (e.g., thinking, gaze events).



Participants compete against each other to select the correct figurine based on the contents of a given card.

Fosters **competitive behavior**, and allows **cognitive processing speed analysis**, among others.

The UDIVA v0.5 dataset

Talk

Already available for research purposes! Check: https://chalearnlap.cvc.uab.es/dataset/41/description

80h of recordings and transcripts of 145 non-acted dyadic interaction sessions featuring 134 participants.

It includes sociodemographics, self-reported personality, internal state, and relationship profiling.



LegoAnimalsGhostGazePalmero et al. ChaLearn LAP Challenges on Self-Reported Personality Recognition and Non-Verbal Behavior
Forecasting During Social Dyadic Interactions: Dataset, Design, and Results (under review), 2022.

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Provided metadata

Participant info:

- Age
- Gender
- Country of origin
- Maximum level of education
- OCEAN personality.

Session info:

- Language
- Participants relationship (known/unknown)
- Task difficulty and *Animal/Lego* details
- Pre- and post-session mood
- Pre- and post-session fatigue.

Palmero et al. ChaLearn LAP Challenges on Self-Reported Personality Recognition and Non-Verbal Behavior 9 Forecasting During Social Dyadic Interactions: Dataset, Design, and Results (under review), 2022.

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Automatically extracted annotations

3D face, body, and hand landmarks:

- noisy labels for training,
- manually filtered labels for validation and test based on annotation quality.

3D gaze direction vectors:

- noisy labels for training, validation and test.

Palmero et al. ChaLearn LAP Challenges on Self-Reported Personality Recognition and Non-Verbal Behavior 10 Forecasting During Social Dyadic Interactions: Dataset, Design, and Results (under review), 2022.

Current research lines







Current research lines





Fine-grained action/intention detection/recognition/forecasting

- Egocentric and general views \rightarrow Winner of **MTurk Funds for Egocentric Datasets**
- Focus on hand-object interaction-based tasks: Lego and Ghost





Draft of AMT annotation GUI









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