









MINERAL: Multi dimensIoNal represEntation foR conversAtion modeLing

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Challenges in Spoken Conversation Analysis

- Non-verbal information can be essential to understand the message,
- · Visual grounding between participants is often needed during a conversation to integrate posture and body gesture as well as references to the surrounding world,
- Semantic grounding between participants of a conversation to establish mutual knowledge is essential for communicating with each other
- ==> Use conversation transcription as a textual input of a generative model for downstream tasks can provide helpful
- ==> But still limited: summary only convey the spoken content, regardless of the other dimensions

Objective

Train a multimodal conversation representation model for communicative acts (i.e., the smallest-verbal or nonverbal—communication with consistent units communication intention)

Study communicative structures (how and why communicative acts are linked),

Generate an enriched transcriptions in the form of a script Exploit a panel of ecological conversational datasets from various domains to evaluate the quality of the generated scripts and their impact on relevant use cases



[Amy and Sheldon are speaking to Amy's mother over a video computer connection on a laptop]

Mrs. Fowler: It's nice to meet you too, Sheldon. I honestly didn't believe Amy when she told me she had a boyfriend. (to Sheldon Cooper)

Sheldon Cooper: I assure you I am quite real. And I'm having regular intercourse with your daughter. (to Mrs.

Mrs. Fowler: [in a surprised tone] What?

Sheldon Cooper: Oh, yes. We're like wild animals in heat. It's a wonder neither of us has been hurt. (to Mrs. Fowler)

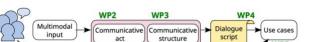
Mrs. Fowler: [scared] Amy, what is he saying? (to Amy Farrah Fowler)

Amy Farrah Fowler: You wanted me to have a boyfriend, mother. Well, here he is. (to Mrs. Fowler)

[Sheldon waves at the computer screen, while Mrs. Fowler nervously waves back]

Research questions

- How to group low-level descriptors into communication acts with the same underlying intention?
- What types of relationships between communication acts need to be captured to reflect the structure of a
- Which representation of conversation structure is most conducive to tasks involving automatic comprehension of a conversation?
- What are the dimensions of interest for representing communication acts for script generation?
- Does the structure in communication acts contribute to the explainability of the generation process?
- Can fiction training corpora contribute to producing reproducible results in real-world conditions?
- To what extent are scripts a useful representation format for solving different practical cases?



WPO Management

Organization

WP1: preparation of multimodal data

WP2: representation and extraction of communicative acts

WP3: representation and extraction of relations between CAs

WP4: script generation

WP5: analysis of how scripts and representations from the previous WPs can help for specific use cases