

## **Tutorial Outline**

### ***Learning Narrative Frameworks From Multi-Modal Inputs***

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We use narratives to understand the world and the behavior of others in the world and to guide our actions and communications. For example, there are various opposing narratives about the origins of the Covid virus or the safety and importance of vaccination, about national identity and the benefits or problems of migration, about the nature and origins of inequality and what to do about it, etc. Narratives include a set of actants (agents or objects) that play certain roles in events, causal, spatial, and temporal relations between events, the intentions, goals, interests, and motivations of the actors, and the moral values, political perspectives and emotions that implicitly underly human behavior. We learn narratives through the actions of others in the world and through multi-modal inputs such as visual and auditory perception, the interpretation of actions, the consequences of our choices and text. Narratives are expressed and coordinated within groups through narrations in the form of stories, movies, artworks, media posts, etc. They arise and propagate in populations through a kind of evolutionary memetic dynamics and thus become part of the collective memory of communities and nations.

If AI ever wants to become more humane, it has to go beyond pattern recognition or formal symbol manipulation and address issues of meaning and understanding. Narratives play an important role in this. Understanding includes the ability to reconstruct a narrative from multi-modal input and fitting it within the narratives already stored in episodic memory. Understanding a narration includes recognizing the strategies others are using to convince you of their own narrative interpretation of events.

This tutorial surveys past work in AI on narratives, what role they play in human-centric AI, and what techniques are already available to represent, recognize and learn narratives. The tutorial focuses also on open problems, of which there are plenty, that could inspire PhD students and postdocs to push the boundaries of AI. The tutorial uses three domains for illustrating and motivating the material presented in the tutorial: disinformation and fake news detection on social media, constructing narrative interpretations of historical or contemporary socio-political events and the interpretation of art works in the context of digital humanities.