

Semantic Methods for Events and Stories (SEMMES)

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Abstract

An important part of human history and knowledge is made of events, which can be aggregated and connected to create stories, be they real or fictional. These events and the stories created from them can typically be inherently complex, reflect societal or political stances and be perceived differently across the world population. The Semantic Web offers technologies and methods to represent these events and stories, as well as to interpret the knowledge encoded into graphs and use it for different applications, spanning from narrative understanding and generation to fact-checking.

The aim of the First Workshop on **Semantic Methods for Events and Stories** (SEMMES) was to offer an opportunity to discuss the challenges related to dealing with events and stories, and how we can use semantic methods to tackle them, also in combination with methods from other fields, including machine learning, narratology or information extraction.

Keywords

Semantic Web, Events, Stories, Narratives

1. Introduction

Representing and instantiating events has always been a crucial task for the Semantic Web community, with some relevant contributions such as specialised ontologies [1] and event-centric knowledge graphs [2] such as EventKG, which serve as data models and resources of event knowledge [3]. While several workshops recently focused on events, stories and their coverage in the news from different angles, SEMMES specifically wants to bring these topics into the Semantic Web community. We addressed works which use semantic formalisms and technologies to solve challenges related to events, stories and narratives. Semantically structured information can bring an essential contribution to AI applications involving generating, managing and understanding events and stories, also in combination with other techniques. With this workshop, we intended to come closer to understand events and stories and thus the world that is formed by them.

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2. Overview on the Program

The workshop has been held on May 29th, 2023, opened by a **keynote talk “Video, Narratives and Knowledge Graphs”** by our invited speaker **Paul Groth**, Professor of Algorithmic Data Science at the University of Amsterdam where he leads the Intelligent Data Engineering Lab (INDElab). He presented his work on entity and event discovery in captioned videos [4]. The workshop has been followed by the presentation of 7 accepted papers (11 submissions, 64% acceptance rate), of which 2 short papers and 5 long papers, organised in two sessions.

In the session **KGs for Understanding Events and Stories**, Kozaki Kouji et al. introduced the *Datasets of Mystery Stories for Knowledge Graph Reasoning Challenge*, based on knowledge graphs extracted from Sherlock Holmes’s stories. Franz Krause et al. presented their work for identifying and understanding semantic transitions, titled *On the Combination of Event Calculus and Empirical Semantic Drifts*. In *Musical Meetups: a Knowledge Graph approach for Historical Social Network Analysis*, the MEETUPS ontology and knowledge graph have been presented by Alba Morales Tirado et al. The session **Event Information Extraction** started with the presentation by Heikki Rantala et al., in which connections between places, people and events are extracted in *Finding and explaining relations in a biographical knowledge graph based on life events: Case BiographySampo*. GPT-3 has been used to realise an event relation dataset in *Prompt-based Data Augmentation for Semantically-precise Event Relation Classification* by Youssra Rebboud et al. Lars Michaelis’ work titled *WikiEvents - A Novel Resource for NLP Downstream Tasks* introduces a KG for of event-related location extraction and entity linking. Finally, a *Comprehensive Survey on Ontologies about Event* has been proposed by Rajesh Piriyani et al., making the first step towards the realisation of a 5W1H-compliant ontology.

The workshop attracted over 40 attendees in this first edition. Details about the workshop, including the Program Committee, are available at <https://anr-kflow.github.io/semmes/>.

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