

Recent Advances in Narrative Natural Language Processing

Mark Finlayson

Assistant Professor at School of Computing and Information Sciences
Florida, USA

Abstract

Specific discourse types present their own special challenges across the spectrum of NLP techniques, from models that are trained or tuned on specific types of discourse (*e.g.*, wall street journal articles), to techniques making certain assumptions about the text (*e.g.*, that everything described takes places “in the real world”). The narrative discourse form presents numerous interesting situations that both challenge the capabilities of existing techniques, and also suggest novel, NLP tasks that are specifically relevant to narrative. I review recent progress in the Cognac Laboratory on NLP as applied to narrative. I discuss four tasks. First, story detection, a variation of the text classification task where the goal is to identify whether a text contains a narrative. Second, animacy and character detection, where the goal is to determine whether a referent is animate and is acting as a “character”. We see that this approach requires some narratological sophistication to be successful. Third, new improvements in sub-event detection on narrative texts that take advantage of certain important features of narrative discourse. And, fourth, new approaches to timeline extraction that significantly improve our ability to extract, organize, and characterize timelines of events. This collection of results represents concrete steps toward our ability to “do text2story”, and points the way forward to an approach to NLP that is truly “narratologically aware.”

Short Bio

Dr. Mark A. Finlayson is Eminent Scholar Chaired Assistant Professor of Computer Science in the School of Computing and Information Sciences at Florida International University (FIU) in Miami, Florida. His research intersects artificial intelligence, natural language processing, cognitive science, and the digital humanities. He directs the Cognac Laboratory whose members focus on advancing the science of narrative, including: understanding the relationship between cognition, narrative, and culture; developing new methods and techniques for investigating questions related to language and narrative; and endowing machines with the ability to understand and use narratives for a variety of applications. He received his Ph.D. from MIT in computer science in 2012 under the supervision of Professor Patrick H. Winston. He also holds the M.S. in Electrical Engineering from MIT (2001) and B.S. in Electrical Engineering from the University of Michigan, Ann Arbor (1998), and served as a research scientist at the MIT Computer Science and Artificial Intelligence Laboratory for 21/2 years before coming to FIU. Dr. Finlayson was awarded an NSF CAREER Grant in 2018 in artificial intelligence and natural language processing, and in 2019 was recipient of an IBM Faculty Research Award, as well being named the US Patent and Trademark Office Edison Fellow for Artificial Intelligence. His work has been funded by NSF, NIH, ONR, DHS, and DARPA.

Copyright © by the paper's authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

In: R. Campos, A. Jorge, A. Jatowt, S. Bhatia (eds.): Proceedings of the Text2Story'20 Workshop, Lisbon, Portugal, 14-April-2020, published at <http://ceur-ws.org>