MELISSA ROEMMELE

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OVERVIEW

I'm a researcher and software practitioner with expertise in natural language processing. My primary research interests are at the intersection between natural language generation, human-computer interaction, and computational creativity. In particular, I'm curious about how humans interact with automatically generated language, particularly language that can be perceived as creative. I'm interested in applying this research to designing software interfaces that assist people with creative writing tasks. In 2018 I completed my PhD in the Department of Computer Science at University of Southern California. As a PhD student, I worked at the USC Institute for Creative Technologies in the Narrative Group. My thesis explored machine learning approaches for predicting "what happens next" in narrative text within applications for interactive storytelling and augmented writing.

EDUCATION

PhD, Computer Science (2018)
University of Southern California, Los Angeles, CA
Thesis: *Neural Networks for Narrative Continuation* (abstract) (full text)
Advisor: Andrew Gordon

MA, Computational Linguistics (2010)
Indiana University, Bloomington, IN

BA, Linguistics and Psychology, *Summa Cum Laude* (2009)
Miami University, Oxford, Ohio

EXPERIENCE

Research Scientist, RWS Language Weaver, Los Angeles, CA 6/2018 - present
Developed and published research on various NLP capabilities for enabling rapid content understanding and creation, including automated summarization, simplification, question generation, and elaboration.

Research Assistant, Institute for Creative Technologies 8/2012 - 5/2018
University of Southern California, Los Angeles, CA
In the Data-driven Interactive Narrative Engine project, explored machine learning techniques for predicting "what happens next" in stories. In particular, developed an application called Creative Help that provides automated assistance for story writing. Additionally, in the Heider Simmel Interactive Theater project, used machine learning techniques to model story-based interpretations of abstract visual animations.

Data Science Intern, Civis Analytics, Chicago, IL 6/2016 - 8/2016
Examined techniques for visualizing and interpreting neural networks for text prediction tasks.

FileMaker Developer, DB Services, Indianapolis, IN 11/2011 - 7/2012
Developed relational database applications using the software FileMaker.

Computational Linguist, Rivera Group, Sellersburg, IN 9/2010 - 4/2011
Developed a system for automatically detecting topics in internet weblogs.

SELECTED PUBLICATIONS (see Google Scholar for all)

Roemmele (2021). Inspiration through Observation: Demonstrating the Influence of Automatically Generated Text on Creative Writing. ICCC 2021.

Roemmele, Sidhpura, DeNeefe, Tsou (2021). AnswerQuest: A System for Generating Question-Answer Items from Multi-Paragraph Documents. EACL 2021, Demo Track.

Roemmele (2019). Identifying Sensible Lexical Relations in Generated Stories. Workshop on Narrative Understanding at NAACL 2019.

Roemmele and Gordon (2018). Linguistic Features of Helpfulness in Automated Support for Creative Writing. Storytelling Workshop at NAACL 2018.

Roemmele and Gordon (2018). An Encoder-decoder Approach to Predicting Causal Relations in Stories. Storytelling Workshop at NAACL 2018.

Roemmele and Gordon (2018). Automated Assistance for Creative Writing with an RNN Language Model. Demo at IUI 2018.

Roemmele, Gordon, and Swanson (2017). Evaluating Story Generation Systems Using Automated Linguistic Analyses. Workshop on Machine Learning for Creativity at SIGKDD 2017.

Roemmele, Mordo, and Gordon (2017). Natural-language Interactive Narratives in Imaginal Exposure Therapy for Obsessive-Compulsive Disorder. Computational Linguistics and Clinical Psychology Workshop at ACL 2017.

Roemmele, Kobayashi, Inoue and Gordon (2017). An RNN-based Binary Classifier for the Story Cloze Test. Linking Models of Lexical, Sentential and Discourse-level Semantics Workshop at EACL 2017.

Roemmele, Morgens, Gordon, and Morency (2016). Recognizing Human Actions in the Motion Trajectories of Shapes. IUI 2016.

Roemmele and Gordon (2015). Creative Help: A Story Writing Assistant. ICIDS 2015.

Roemmele, Archer-McClellan, and Gordon (2014). Triangle Charades: A Data-Collection Game for Recognizing Actions in Motion Trajectories. IUI 2014.

Roemmele, Bejan, and Gordon (2011). Choice of Plausible Alternatives: An Evaluation of Commonsense Causal Reasoning. 10th Symposium on Logical Formalizations of Commonsense Reasoning.

TECHNICAL SKILLS

Expertise in Python and Python tools for statistical modeling/machine learning (PyTorch, Keras, Scikit-learn, TensorFlow), NLP (spaCy, gensim, NLTK), and data computing (numpy, scipy, pandas). Experience with web development frameworks (Vue.js, React, Javascript/HTML/CSS).

OTHER HIGHLIGHTS

Featured in July 2021 ACM article Engineering Additional Creativity.

Virtual invited talk at the February 2021 Sony CSL seminar: Language Generation in Automated Assistance for Story Writing.

Invited talks at the Computational Creativity for NLG Workshop at INLG 2019 and the Storytelling Workshop at ACL 2019.

Instructor for the course "Siri, What is Natural Language Processing?" in spring 2019 at the Institute for Educational Advancement in Pasadena, CA. This 10-week course introduced linguistics and natural language processing to students ages 12-14.

Ongoing PC member for NAACL, ACL, EMNLP, and AAAI.