# MELISSA ROEMMELE

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**OVERVIEW**

I'm a researcher and software practitioner in the area of natural language processing (NLP), passionate about exploring novel forms of human-computer interaction that augment human knowledge and creativity. I'm currently a research scientist at SDL Research, building applications that use NLP to facilitate efficient content understanding and creation. Prior to that, 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, which pursues research at the intersection of AI and narrative. My thesis explored machine learning approaches for interactively predicting "what happens next" in text-based stories, both in a commonsense reasoning framework as well as for human authoring support.

**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, SDL Research**, Los Angeles, CA          6/2018 - present
Developed various NLP software components for enabling rapid content understanding and creation, including extractive summarization, question & answer pair generation, text simplification, topic/genre classification, keyphrase identification, and semantic autocompletion.

**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.

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| **SELECTED PUBLICATIONS** (see Google Scholar for all) | **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. |
| | Gordon and **Roemmele** (2014). An Authoring Tool for Movies in the Style of Heider and Simmel. ICIDS 2014. |
| | **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). |
| | Some experience with web development, both front-end (Javascript/HTML/CSS) and back-end (CherryPy, Flask). |
| **AWARDS/ SERVICE** | Invited talk, "The Curious Role of NLG in Automated Assistance for Story Writing" at the Computational Creativity for NLG Workshop at INLG 2019. |
| | Invited talk, "Automated Assistance for Story Writing: Exploring a New Generation Paradigm", at 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. |
| | Presenter and mentor to students at two events organized by LingHacks, which brings together high school students interested in the intersection of math and language. |
| | Ongoing PC member for NAACL, ACL, EMNLP, and AAAI. |