MELISSA ROEMMELE

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OVERVIEW

I'm a scientist and engineer specializing in the evaluation and optimization of generative AI systems for creative applications. I'm currently part of the Midjourney Storytelling Lab, where I help build AI-based tools that facilitate novel ways to tell stories. My work focuses on developing frameworks that analyze AI models' capabilities in supporting narrative expressivity. This includes prompt engineering for large language models (LLMs) and text-to-image models, as well as designing human-in-the-loop and automated evaluation methodologies to assess the output quality of these models. I hold a PhD in Computer Science from the University of Southern California, where my dissertation explored emerging applications of language modeling to creative writing assistance. See my website for more information about my recent projects and my Google Scholar page for my full list of publications.

EXPERIENCE

Research Scientist, Midjourney, San Francisco, CA 6/2024 - present
As part of the Midjourney Storytelling Lab, developed and published research on tools for AI-supported storytelling, including narrative scene illustration.

Research Scientist, Language Weaver (RWS Group), CA 6/2018 - 6/2024
Developed and published research on various NLP capabilities for enabling rapid content understanding and creation, including automated summarization, simplification, question generation, and elaboration. In 2024, led a team developing data and models for machine translation quality estimation.

Research Assistant, Institute for Creative Technologies 8/2012 - 5/2018
University of Southern California, Los Angeles, CA
Explored machine learning techniques for narrative continuation, the task of predicting "what happens next" in stories. In particular, developed an application called Creative Help that helps people write stories by automatically generating suggested sentences. This was one of the first demonstrations of the use of language models (LMs) for creative writing assistance.

Data Science Intern, Civis Analytics, Chicago, IL 6/2016 - 8/2016
Examined techniques for 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.

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

TECHNICAL SKILLS

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