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 was most recently part of the Midjourney Storytelling Lab, where I helped build AI-based tools that facilitate unique ways to tell stories. My work focuses on developing frameworks that analyze AI models' capabilities in supporting creative expression. This includes prototyping novel interfaces utilizing 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 Jun 2024 – Dec 2025
Midjourney, San Francisco, CA

As part of the Midjourney Storytelling Lab, I developed tools for AI-supported storytelling. This includes Patchwork, a worldbuilding tool, and Dramamancer, an interactive visual novel app. I also explored agentic pipelines for utilizing text-to-image models to illustrate scenes in stories.

Research Scientist Jun 2018 – Jun 2024
Language Weaver (RWS Group), CA

I developed AI approaches for dynamically adapting texts in order to enable rapid content understanding. This included building NLP models to summarize and simplify documents, and also to synthesize Q&A pairs. In 2024, I led a team developing data and models for machine translation quality estimation.

Graduate Research Assistant Aug 2012 – May 2018
USC Institute for Creative Technologies, Los Angeles, CA

I explored machine learning techniques for narrative continuation, the task of predicting "what happens next" in stories. In particular, I 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 for creative writing assistance.

Data Science Intern Jun 2016 – Aug 2016
Civis Analytics, Chicago, IL

I examined techniques for interpreting neural networks for text prediction tasks.

FileMaker Developer Nov 2011 – Jul 2012
DB Services, Indianapolis, IN

I developed relational database applications using FileMaker.

EDUCATION

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

MA, Computational Linguistics 2010
Indiana University
Bloomington, IN

BA, Linguistics & Psychology 2009
Miami University
Oxford, OH

TECHNICAL SKILLS

Programming: My preferred language is Python. I also have experience with JavaScript for web development.

AI/Machine Learning: I'm oriented to using model API services like Replicate and Together. For hands-on model development, I favor the use of high-level frameworks, especially the HuggingFace Transformers library and Scikit-learn for simple classical models.

Math/Computing: I currently don't focus on low-level model implementation, but I've worked with PyTorch. I use NumPy and SciPy for mathematical analyses.

Data: I use Pandas for data processing, and Seaborn and Plotly for data visualization. I often use these tools inside Jupyter notebooks.

NLP: For linguistic analysis tasks, I've worked extensively with the spaCy and NLTK libraries.

Coding Practices: I value having strong technical fundamentals but I embrace AI assistance in my typical coding workflow. I use Cursor as my IDE.