EMILY REIF

website [↗]
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google scholar [↗]
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ABOUT

Senior software engineer on Google's People + AI Research team.

Doing basic research on the potential and limitations of ML models, primary focus in NLP.

Building visualization tools to help ML practitioners better understand their models.

Creating new interfaces to explore the boundaries of these models' capabilities, for a wide range of users from pathologists to creative writers.

SKILLS

NLP research ●●●●●●●
Visualization ●●●●●●●
Frontend ●●●●●●●
Backend ●●●●●○○
ML infra ●●●●○○○

LANGUAGES / LIBRARIES

Python ●●●●●●●
JS / CSS / HTML ●●●●●●●
D3 ●●●●●○○
Huggingface ●●●●●○○
Tensorflow ●●●●○○○

EDUCATION

Brown University
2016 (ScB), 2017 (Ms)
3.9 GPA
Magna cum laude
Sigma xi research honor society

Rhode Island School of Design
2012-2016
Selected courses

EXPERIENCE

GOOGLE BRAIN (PEOPLE + AI RESEARCH) SENIOR SOFTWARE ENGINEER

2022-present
lead researcher, engineer

LLM Synthesized Data: Evaluation
• Leading a research effort on evaluating and controlling the diversity of data synthesized by LLMs with few-shot learning and prompt tuning.

2020 - 2023
lead engineer, researcher (for text)

KnowYourData
• Tool for understanding large datasets using data augmentation and visualization.
• Led development and engineering for the text modality.
• Created novel text visualizations, scaled real time interaction to 1B examples, and worked with clients.
• Used by Google Translate, Search, Assistant, and researchers in Google Brain

2020 - present
lead researcher, engineer

LLM Pre-Training Data Analysis
• Leading research effort on pre-training data RAI analysis for LLMs, including interventions and ablations.
• Ran RAI analysis on PaLM and PaLM2 pre-training data.
• Helped develop an internal framework for understanding representations of people in unstructured data.

2022-2023
engineer, researcher, artist

Wordcraft Writers Workshop [↗]
• LLM-powered writing assistant for a workshop with professional writers (including Ken Lui and Robin Sloan).
• Prompt developer, researcher, front end engineer. Also illustrated final stories.

2019
lead engineer, artist

Waterfall of Meaning [↗]
• Art piece exploring the internals of language models. Shown internationally (London, China, and Spain) with the Barbican *AI - More Than Human* exhibit.

2017
engineer

Embedding Projector [↗]
• Tool for understanding the internal representations of an ML model.
• Front end development, including scaling the visualization with WebGL.

MICROSOFT SOFTWARE ENGINEER INTERN

2015
engineer intern

Bing Maps
• Designed and implemented a calendar/map interface library.

SELECTED PUBLICATIONS

Distill.pub 2021
A Gentle Introduction to Graph Neural Networks [↗]
Emily Reif, Benjamin Sanchez-Lengeling, Adam Pearce, Alexander B. Wiltschko

ACL 2022
A Recipe for Arbitrary Text Style Transfer with Large Language Models [↗]
Emily Reif, Daphne Ippolito, Ann Yuan, Andy Coenen, Chris Callison-Burch, Jason Wei

NeurIPS 2019
Visualizing and Understanding the Geometry of BERT [↗]
Emily Reif, Ann Yuan, Martin Wattenberg, Fernanda B. Viegas, Andy Coenen, Adam Pearce, Been Kim

CHI 2019
Human-Centered Tools for Coping with Imperfect Algorithms During Medical Decision-Making [↗]
Carrie J. Cai, **Emily Reif**, Narayan Hegde, Jason Hipp, Been Kim, Daniel Smilkov, Martin Wattenberg, Fernanda Viegas, Greg S. Corrado, Martin C. Stumpe, M Terry

JMLR 2023
PaLM: Scaling Language Modeling with Pathways [↗]
Aakanksha Chowdhery, Sharan Narang, Jacob Devlin, ..., **Emily Reif,** ...., Jeff Dean, Slav Petrov, Noah Fiedel

EMNLP 2021
The Language Interpretability Tool: Extensible, Interactive Visualizations and Analysis for NLP Models [↗]
Ian Tenney, James Wexler, Jasmijn Bastings, ..., **Emily Reif,** Ann Yuan

Comp. Brain & Behavior 2021
Neural Networks Trained on Natural Scenes Exhibit Gestalt Closure [↗]
Been Kim, **Emily Reif,** Martin Wattenberg, Samy Bengio & Michael C. Mozer