

Molly Lewis

Research Scientist (PhD, Psychology) with 10+ years using quantitative methods to understand and predict complex human behavior. Seeking to apply my expertise in machine learning, natural language processing, and experimental design in a researcher role. Passionate about AI ethics and safety.

Contact

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Skills

Programming

R / tidyverse / Shiny

SQL

HTML / CSS / javascript

Tools

Experimental design

NLP

Redshift

Sagemaker

Literate coding (e.g., R markdown)

Git / Github

Data Analysis

Frequentist statistics

Supervised ML (e.g., regression)

Unsupervised ML (clustering, PCA)

Unsupervised text analysis (e.g., topic models; LLMs)

Data visualization (e.g., ggplot2)

Mixed effects models

Meta-analytic models

Network analysis (e.g., igraph)

⚙ Experience

Sr. Research Scientist (Quant. Researcher) 2022 - present
Amazon, Alexa Marketing Science remote

- Lead project examining the predictors of Alexa device success after launch
- Extracted and wrangled massive dataset (>1B rows) of user behavior using Redshift
- Analyzed unstructured text data (customer reviews) to identify themes related to customer engagement and sales

Research Scientist 2019 - 2022
Carnegie Mellon University, Social and Decision Sciences Pittsburgh, PA

- Lead research projects, managed teams, and supervised undergraduate researchers
- Published papers on language learning and presented work as senior author
- Analyzed large public dataset (*QuickDraw*, Google) to understand cross-cultural semantic variability
- Developed open source teaching materials for R-based research methods course and taught course twice [course website]

Post-Doctoral Scholar 2017-2019
University of Chicago (Advisor: James Evans, Sociology) Chicago, IL

- Used multilingual large-scale language models to understand the principles governing cross-linguistic variability in semantic structure
- Collaborated with industry partners on analysis of 1M word corpus
- Communicated research to technical and non-technical audiences

🎓 Education

Stanford University PhD, 2016
Psychology, Cognitive/Developmental (Advisor: Michael C. Frank)

Reed College BA, 2009
Linguistics

Other coursework: Computational Social Science Summer School (Princeton, NJ, 2017); Machine Learning Summer School (Tübingen, Germany, 2013)

📖 Representative Publications

I have authored 25+ publications in peer-reviewed journals, conference proceedings, and popular press outlets, and given over 30 invited talks (see [website](#) for full list).

- **Gender stereotypes are reflected in the distributional structure of 25 languages** (Lewis & Lupyan, 2020; *Nature Human Behavior*) [publication, repository]
 - Using language models trained on cross-linguistic text, I found that languages with stronger gender biases in their language statistics tend to have speakers with stronger gender biases, as measured behaviorally. Featured in *Scientific American*.
- **What might books be teaching young children about gender?** (Lewis, et al., 2021; *Psych. Science*) [publication, repository, app]
 - Examined gender representations in corpus of popular children's books through word embedding models, behavioral data, and other NLP techniques.
- **Characterizing variability in shared meaning through millions of sketches** (Lewis, Balamurugan, Zheng & Lupyan, 2021) [publication]
- **Local similarity and global variability characterize the semantic space of human languages** (Lewis, et al., under revision; *PNAS*) [publication]
- **Why Responsible AI needs Psychology** (Lewis, 2022) [blogpost]