

**Karie Moorman**  
Curriculum Vitae  
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EMPLOYMENT

Data Scientist, Amazon

May 2021 - Jan 2023

- Teams: Alexa Skills Store, Proactive Experience, Monetization
- Decreased NLU model development-to-release time by 50+% (8-12 weeks → 1-4 weeks) through collaborative multi-org initiative to design, implement & optimize automated E2E feature development workflows for both Alexa & AWS.
- Spearheaded org-level NLU quality assessment & improvement program, discovering persistent & robust data quality issues producing 30% (+/-5%) fraudulent data, directly impacting high-value business-critical work streams across multiple organizations, over a 10-month time period.
- Designed, deployed, & managed GDPR-compliant data pipelines & BI dashboards, streamlined data & metrics validation, monitored & reported service-internal performance, latency, customer product analytics & feedback metrics across 4 orgs & 20 NLU domains in Alexa, using AWS Solutions, for ~ \$50/month.
- Authored conceptual documentation & runbooks, detailed analysis documents & presentations for engineering, product & executive team review, collaborated with cross-functional teams to target gaps & strategically improve service performance & customer engagement.
- Alexa Lab Bar Raiser (NLP, Privacy & Trust), New-Hire Mentor (Science track).

NLU Engineer, Amazon

Aug 2019 - May 2021

- Teams: Alexa Skills Store, Proactive Experience
- Reduced onboarding time by 90% (1 month → 1-3 days), restructuring documentation & implementation workflows to maximize accessibility across technical & non-technical job roles.
- Trained NLU developers, program managers, & software engineers across 12 teams in feature development.
- Designed, validated via A/B experimentation, launched & maintained more than 20 features for Skills, News, Tutorials, Privacy, Payments, Notifications, Health & Fitness, Alexa for Everyone, & Routines.
- Trained statistical & DNN language models to improve Alexa performance across 13 NLU domains, using MXNet & Pytorch.
- New-Hire Mentor (Ontology track).

Computational Linguist, MachineVantage

Nov 2018 - May 2019

- Optimized NLP systems used to automatically generate context-relevant marketing & branding content for more than 20 multinational consumer goods companies including Nike, Starbucks, Johnson & Johnson, & Unilever.
- Built & maintained datasets used to train & fine-tune NLP conceptual discovery & content generation systems.
- Developed over 80 pitch decks for use by marketing & advertising teams.

Analytical Linguist, International Computer Science Institute (ICSI)

Jan 2013 - May 2015

- IARPA-funded multi-campus program to develop a multilingual metaphor database and automated metaphor identification system ([link](#)).
- Created & managed semantics-based taxonomies & ontologies of over 500 verified cognitive semantic domains & 650 conceptual metaphors across 20+ socially relevant domains, for US English & Mexican Spanish ([link](#)).
- Executed data analysis in collaboration with engineering teams to improve automatic metaphor detection success rate by 130% for Mexican Spanish, from 15% to 35%.
- Partnered with researchers across 3 UC Campuses (Berkeley, San Diego, Merced) to develop annotation protocols used to generate large-scale multilingual train/test sets for various understanding & reasoning tasks ([link](#)).
- Monitored & optimized NLP pipeline performance to improve automated metaphor detection.
- Mentored new research assistants as part of program onboarding.

## ACADEMIC RESEARCH EXPERIENCE

- 2012-2015      MetaNet - Metaphor Database and Extraction System  
Automated Frame-Semantic and Metaphor Analysis at Scale  
International Computer Science Institute, Berkeley  
Supervisors: G. Lakoff, C. Baker, S. Narayanan
- 2012-2015      Karuk Research Unit (KRU)  
Corpus Analysis, Transcription, Annotation, Language Documentation  
University of California at Berkeley  
Supervisors: A. Garrett, L. Mikkelsen

## ACADEMIC TALKS AND PUBLICATIONS

- 2021              Lopez, L. D., Moorman, K., Schneider, S., Baker, M. N., & Holbrook, C. (2021). Morality is relative: Anger, disgust, and aggression as contingent responses to sibling versus acquaintance harm. *Emotion*, 21(2), 376–390. <https://doi.org/10.1037/emo0000707>
- 2018              Magnitude of metaphor: its effect on reasoning about immigration  
Talk given at the Cultural Evolution Society Conference.  
Tempe, Arizona, 22-24 October 2018.
- 2017              Cultural frames of immigration in the United States  
Guest lecture, Language of Advertising, UC Berkeley  
Berkeley, CA, 24 October, 2017.
- 2017              Magnitude of Metaphor: its effect on reasoning about immigration  
Guest lecture, Introduction to Cognitive Science, UC Merced.  
Merced, CA, 1 August, 2017.
- 2017              Tsunamis, Aliens, and Butterflies: Force-dynamics and metaphor in US immigration discourse  
Talk given at the 14th Meeting of the International Cognitive Linguistics Conference.  
Tartu, Estonia, 10-14 July, 2017.
- 2017              Moorman, K. A Construction Grammar Analysis of *-ara* in Karuk. *Proceedings of 41<sup>st</sup> Annual Meeting of the Berkeley Linguistics Society (BLS 41)*, February 7-9, 2015.
- 2015              Uses of Karuk *-ara* in Event Construal  
Talk given at the 13<sup>th</sup> Meeting of the International Cognitive Linguistics Conference.  
Newcastle, UK, 20-25 July, 2015.
- A Construction Grammar Analysis of *-ara* in Karuk  
Talk given at the 41<sup>st</sup> Annual Meeting of the Berkeley Linguistics Society (BLS).  
Berkeley, CA, 7-9 February, 2015.
- 2014              Nominal and Verbal Uses of *-ara* in Karuk  
Talk given at the 12th Conceptual Structure, Discourse and Language (CSDL) Conference.  
Santa Barbara, CA, 4-6 November, 2014.
- The Polyfunctionality of *-ara*: Analyzing metonymy and metaphor in Karuk  
Talk given at CogNetwork. Berkeley, CA, 29 October, 2014.
- The Polyfunctionality of *-ara* in Karuk: Its form, meaning, and function  
Talk given at CogNetwork, Berkeley, CA, 14 April, 2014.

## TEACHING EXPERIENCE

Fall 2018	Graduate Student Instructor COGS001: Introduction to Cognitive Science, UC Merced Cognitive and Information Sciences Department
Spring 2016	Lecturer, L105/C101: The Mind and Language, UC Berkeley Cognitive Science Department
Summer 2015	Grader, L105/C101: Language and Mind, UC Berkeley Linguistics Department
	Grader, C147: Language Disorders, UC Berkeley Linguistics Department
Summer 2014	Grader, C146: Language Acquisition, UC Berkeley Linguistics Department
Summer 2013	Grader, C146: Language Acquisition, UC Berkeley Linguistics Department
Spring 2013	Co-facilitator, Construction Grammar DeCal UC Berkeley Linguistics Department

## FELLOWSHIPS, HONORS AND AWARDS

Spring 2017	Cognitive and Information Sciences Travel Fellowship, UC Merced
2016-2018	Eugene Cota Robles graduate fellowship, UC Merced
Spring 2015	Departmental Honors, Department of Linguistics, UC Berkeley

## VOLUNTEER ACTIVITIES AND ACADEMIC SERVICE

Oct 2015	Volunteer Assistant Presented Karuk online dictionary to conference goers. California Indian Conference (CIC) 30, Berkeley, CA
Feb 2015	Volunteer Assistant Helped with registration of presenters and guests. Berkeley Linguistics Society (BLS) 41, Berkeley, CA
Spring 2013	Volunteer Co-Facilitator Taught a Construction Grammar DeCal course in Spring 2013 semester. UC Berkeley Linguistics Department, Berkeley, CA
April 2013	Volunteer Assistant Helped with registration of presenters and guests as well as cleanup of event. Workshop on Structure and Constituency in the Languages of the Americas (WSCLA) 18, Berkeley, CA

## EDUCATION

Fall 2016 - Fall 2019	Ph.D., Cognitive and Information Sciences University of California, Merced Graduate Research: <a href="#">Bias, Language, Social Group Dynamics</a> (Did Not Finish)
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Fall 2011- Spring 2015    B.A. Linguistics (with distinction)  
Department of Linguistics  
University of California, Berkeley  
Honors Thesis: [\*The Polyfunctionality of -ara in Karuk: its form, meaning, and function\*](#)  
Undergraduate Research: [MetaNet](#), [Karuk Language Project](#)

## LANGUAGES & SOFTWARE

Spoken: English (native), Spanish (beginner), Karuk (fieldwork)

Programming: Python, R, SQL, HTML5, CSS, JS, Bash, Spark

Cloud: AWS Solutions (IAM, KMS, VPC, S3, RS, RDS, Athena, Glue, QuickSight, CloudWatch, CloudTrail, SNS, Budget); Google BigQuery

SPSS, Praat, ELAN, Audacity

## SKILLS

Natural Language Understanding: Web Scraping, Multilingual Text Generation, Extraction, Annotation, Parsing & Classification, NER, Semantic Similarity & Disambiguation, Sentiment & Emotion Analysis, Multimodal Conversation Analysis

Database Management: Git, ETL/ELT, API Integration, CI/CD

Data Analysis: Correlation, Classification (KNN; SVM), Clustering (K-Means; Agglomerative), Topic Modeling (LDA; TF-IDF), Non-Linear Regression (GLMM; HLM; SEM), Time-Series Analysis, Causal Inference

Data Visualization: R (Markdown; Shiny), Python (Jupyter; Dash), BI (QuickSight; Tableau; Kibana)

Human Cognition & Behavior Research: Replicable A/B Experiment Design, Rigorous Hypothesis Testing (MTurk, Qualtrics, MatLab, R, SPSS)

Testing Strategies: Development, Validation & Optimization of QA/QC Procedures, Model, Service, & Customer Performance Metrics; Reliable Root-Cause Analysis, Interpretable & Scalable Solutions