

ELISA KREISS, PHD

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Academic Employment

Assistant Professor, University of California, Los Angeles Nov 2023 –
Department of Communication

Google, People + AI Research (PAIR) July 2022 – Sept 2022
Research Internship
Mentor: Meredith Ringel Morris

Education

Stanford University, Linguistics, USA Sept 2018 – Sept 2023
Doctor of Philosophy
Dissertation topic: The Pragmatics of Image Description Generation
Advisor: Christopher Potts

Osnabrück University, Cognitive Science, Germany Sept 2014 – Dec 2017
Bachelor of Science
Thesis: Modeling Natural Language in the RSA Framework: Typicality Effects
in Overinformative Referring Expressions
Advisors: Judith Degen and Eleni Gregoromichelaki

Publications

Preprints

- [1] N. Naik, C. Potts, and **E. Kreiss**. “CommVQA: Situating Visual Question Answering in Communicative Contexts”. Under Review. 2024.
- [2] A. Zur, **E. Kreiss**, C. Potts, and A. Geiger. “When Interpretability Enhances Accessibility: Training CLIP to Prefer Descriptions Over Captions”. Manuscript. 2023.

Conference Publications

Note: Conferences are the primary publication medium in computer science, comparable to journals in other disciplines.

- [3] **E. Kreiss**^{*}, E. Zelikman^{*}, C. Potts, and N. Haber. “ContextRef: Evaluating Referenceless Metrics For Image Description Generation”. In: *International Conference on Learning Representations (ICLR)*. 2024.
- [4] A. Cao^{*}, A. Geiger^{*}, **E. Kreiss**^{*}, T. Icard, and T. Gerstenberg. “A semantics for causing, enabling, and preventing verbs using structural causal models”. In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. Vol. 45. 2023.
- [5] **E. Kreiss**, C. Bennett, S. Hooshmand, E. Zelikman, M. R. Morris, and C. Potts. “Context Matters for Image Descriptions for Accessibility: Challenges for Referenceless Evaluation Metrics”. In: *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing*. 2022, pp. 4685–4697.

- [6] **E. Kreiss**, F. Fang, N. Goodman, and C. Potts. “Concadia: Towards Image-Based Text Generation with a Purpose”. In: *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing*. 2022, pp. 4667–4684.
- [7] F. Fang, K. Sinha, N. D. Goodman, C. Potts, and **E. Kreiss**. “Color Overmodification Emerges from Data-Driven Learning and Pragmatic Reasoning”. In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. Vol. 44. 2022.
- [8] A. Geiger, Z. Wu, H. Lu, J. Rozner, **E. Kreiss**, T. Icard, N. Goodman, and C. Potts. “Inducing causal structure for interpretable neural networks”. In: *International Conference on Machine Learning*. PMLR. 2022, pp. 7324–7338.
- [9] Z. Wu, A. Geiger, J. Rozner, **E. Kreiss**, H. Lu, T. Icard, C. Potts, and N. Goodman. “Causal Distillation for Language Models”. In: *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*. 2022, pp. 4288–4295.
- [10] Z. Wu^{*}, **E. Kreiss**^{*}, D. Ong, and C. Potts. “ReaSCAN: Compositional Reasoning in Language Grounding”. In: *Thirty-fifth Conference on Neural Information Processing Systems Datasets and Benchmarks Track (Round 1)*. 2021.
- [11] **E. Kreiss** and J. Degen. “Production expectations modulate contrastive inference.” In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. Vol. 42. 2020.
- [12] **E. Kreiss**^{*}, Z. Wang^{*}, and C. Potts. “Modeling Subjective Assessments of Guilt in Newspaper Crime Narratives”. In: *Proceedings of the 24th Conference on Computational Natural Language Learning*. 2020, pp. 56–68.
- [13] **E. Kreiss**, M. Franke, and J. Degen. “Uncertain evidence statements and guilt perception in iterative reproductions of crime stories.” In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. Vol. 41. 2019.

Journal Articles

- [14] J. Degen, R. D. Hawkins, C. Graf, **E. Kreiss**, and N. D. Goodman. “When redundancy is useful: A Bayesian approach to “overinformative” referring expressions.” In: *Psychological Review* 127.4 (2020), p. 591.

Lightly Reviewed Publications

- [15] **E. Kreiss**, J. A. Hermsillo, K. Srinivasan, C. Bennett, T. Piccardi, M. S. Bernstein, M. R. Morris, and C. Potts. “Characterizing Image Accessibility on Wikipedia across Languages”. In: *Wiki Workshop*. 2023.
- [16] **E. Kreiss**, S. Venugopalan, S. Kane, and M. R. Morris. “Practical Challenges for Investigating Abbreviation Strategies”. In: *CHI Conference on Human Factors in Computing Systems: The Second Workshop on Intelligent and Interactive Writing Assistants*. 2023.
- [17] N. Naik, C. Potts, and **E. Kreiss**. “Context-VQA: Towards Context-Aware and Purposeful Visual Question Answering”. In: *Proceedings of the International Conference on Computer Vision (ICCV): 5th Workshop On Closing The Loop Between Vision And Language*. 2023.
- [18] S. Hooshmand, **E. Kreiss**, and C. Potts. “Intuitive Image Descriptions are Context-Sensitive”. In: *NeurIPS Workshop: Meaning in Context*. 2021.
- [19] **E. Kreiss**, R. X. Hawkins, J. Degen, and N. Goodman. “Mentioning atypical properties of objects is communicatively efficient”. In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. Vol. 39. 2017.

Awards & Grants

Generating Descriptions of Data Visualizations to Improve Accessibility and Learning Outcomes in STEM Education

2023 – 2024

PI (with Co-PIs Judith Fan and Christopher Potts)

Stanford Human-Centered AI & Accelerator for Learning Seed Grant

Tackling Image Accessibility with Descriptive Texts and Context PI (with Co-PIs Christopher Potts and Noah D. Goodman) Google Research Award	2021 – 2024
NeurIPS Top Reviewers Award	2023
Stanford Community Impact Award For profound dedication to the university and overall Stanford community	2022
Stanford Linguistics Department Research Grant	May 2019

Teaching

(upcoming) Instructor: Communication and Cognition , UCLA	Mar 2024 – June 2024
Guest Lecture: Inclusive Design (Thomas Brinck), University of Maryland	September 2023
Guest Lecture: Human-Centered NLP (Diyi Yang), Stanford	May 2023
TA (Teaching Assistant): Introduction to Linguistics (Katherine Hilton), Stanford	Sept 2021 – Dec 2021
TA: Introduction to Semantics and Pragmatics (Christopher Potts), Stanford	Jan 2021 – Mar 2021
TA: Cognitive Modeling (Michael Franke), Osnabrück	Feb 2018 – Sept 2018
TA: Introduction to Computational Linguistics (Eleni Gregoromichelaki), Osnabrück	April 2017 – July 2017
TA: Introduction to Computational Linguistics (Peter Bosch), Osnabrück	April 2016 – July 2016

Mentoring

Dash, Akankshita (Stanford Master's student)	2022 –
Naik, Nandita (Stanford co-term student)	2022 –
Sinha, Kunal (Stanford undergraduate student)	2021 –
Cao, Angela (University of Edinburgh Master's student → PhD student at University of Rochester)	2022
Chia, Bryan (Stanford Master's student)	2022 – 2023
Dias, Matheus (Stanford Master's student → Software engineer at Orby AI)	2022 – 2023
Fang, Fei (Stanford co-term student → Software engineer at Glean)	2021 – 2022
Hooshmand, Shayan (CSLI intern, Columbia undergraduate student)	2021
Kapur, Rhea (Stanford undergraduate student)	2022 – 2023
Wu, Zhengxuan (Stanford Master's student → PhD student at Stanford)	2021 – 2022

Invited Talks

(upcoming) CVPR: VizWiz Grand Challenge Workshop , <i>Seattle</i>	June 2024
(upcoming) CVPR: NICE Workshop , <i>Seattle</i>	June 2024
(upcoming) UCLA Social Psychology Colloquium , <i>UCLA</i>	May 2024
(upcoming) Communication Science Futures , <i>Michigan State University</i>	May 2024
(upcoming) Wikimedia Research Showcase , <i>virtual</i>	April 2024
University of Michigan School of Information , <i>University of Michigan</i> Making the visual, non-visually accessible: Towards human-centered AI systems for accessibility	Feb 2024
UCLA Dept. of Psychology's Cognitive Forum , <i>UCLA</i> Using vision-language models to describe the visual world: A communicative problem	Feb 2024
MIT Computational Psycholinguistics Lab , <i>MIT</i> Towards pragmatic visual description generation	Dec 2023

Berkeley AI Research (BAIR) Workshop , <i>virtual</i> How communicative goals (should) shape image-based text generation	Oct 2023
Allen Institute for AI , <i>virtual</i> Image-based natural language generation for increasing equitable access to visual content	June 2023
ELLIS Institute, Tübingen , <i>virtual</i> Communicating in a visual world: A challenge and opportunity for AI	Mar 2023
UCLA Department of Communication , <i>UCLA</i> Communicating in a visual world: A challenge and opportunity for AI	Jan 2023
Tübingen University Colloquium , <i>virtual</i> Towards context-sensitive image descriptions with a purpose	Jan 2022
AI4All , Stanford Chapter, <i>virtual</i> Computational models of language comprehension	July 2020

Service

Reviewer for Conference on Language Modeling (COLM)	2024
Reviewer for Transactions of the Association for Computational Linguistics (TACL)	2023 –
Reviewer for Psychonomic Bulletin & Review	2023 –
Reviewer for Annual Conference of Cognitive Science (CogSci)	2022, 2024
Reviewer for PNAS	2023
Reviewer for Association for Computational Linguistics (ACL)	2020 – 2023
Reviewer for NeurIPS: Datasets and Benchmarks	2022 – 2023
Reviewer for Neural Information Processing Systems (NeurIPS)	2023
Reviewer for Journal of Pragmatics	2023
Reviewer for Empirical Methods in NLP (EMNLP)	2022
Member of the Summer research program internship committee CSLI, Stanford	2020 – 2022
Reviewer for Annual Conference of Cognitive Science (CogSci)	2022
Member of the Stanford NLP group application program CLiPS	Aug 2020 – Jan 2022
Reviewer for NeurIPS: Meaning in Context	2021
Graduate student representative, Linguistics, Stanford	Oct 2020 – Sept 2021
Linguistics Lab TA, Stanford	Sept 2019 – July 2020
Member of the faculty search committee, Osnabrück University	June 2017 – July 2018

Talks and Posters

ICLR 2024 , Vienna, Austria Poster on “ContextRef: Evaluating Referenceless Metrics for Image Description Generation” Kreiss, E.*; Zelikman, E.*; Potts, C.; Haber, N.	June 2024
ICCV 2023 CLVL Workshop , Paris, France Poster on “Context-VQA: Towards Context-Aware and Purposeful Visual Question Answering” Naik, N. (presenting); Potts, C.; Kreiss, E.	Sept 2023
CogSci 2023 , Sydney, Australia Poster on “A semantics for causing, enabling, and preventing verbs using structural causal models” Cao, A.* (presenting); Geiger, A.*; Kreiss, E.*; Icard, T.; Gerstenberg, T.	July 2023
CHI 2023 Workshop on Writing Assistants , Hamburg, Germany Talk on “Practical Challenges for Investigating Abbreviation Strategies” Kreiss, E. (presenting); Venugopalan, S.; Kane, S.; Ringel Morris, M.	April 2023

EMNLP 2022 , <i>virtual</i>	Dec 2022
Poster on "Context matters for image descriptions for accessibility: Challenges for referenceless evaluation metrics."	
Kreiss, E. (presenting), Bennett, C., Hooshmand, S., Zelikman, E., Ringel Morris, M., Potts, C.	
EMNLP 2022 , <i>virtual</i>	Dec 2022
Poster on "Concadia: Towards image-based text generation with a purpose."	
Kreiss, E. (presenting), Fang, F., Goodman, N., Potts, C.	
CogSci 2022 , <i>virtual</i>	July 2022
Talk on "Color overmodification emerges from data-driven learning and pragmatic reasoning".	
Fang, F. & Kreiss, E. (presenting jointly), Sinha, K., Goodman, N., Potts, C.	
NeurIPS: Datasets and Benchmarks Track , <i>virtual</i>	Dec 2021
Talk on "ReaSCAN: Compositional reasoning in language grounding".	
Wu, Z.* (presenting), Kreiss, E.*, Ong, D., Potts, C.	
NeurIPS workshop: Meaning in Context 2021 , <i>virtual</i>	Nov 2021
Talk on "Intuitive image descriptions are context-sensitive".	
Hooshmand, S. (presenting), Kreiss, E., Potts, C.	
CoNLL 2020 , <i>virtual</i>	Nov 2020
Talk on "Modeling subjective assessments of guilt in newspaper crime narratives".	
Kreiss, E.* (presenting), Wang, Z.*, Potts, C.	
CogSci 2020 , Toronto, Canada, <i>virtual</i>	July 2020
Talk on "Production expectations modulate contrastive inference".	
Kreiss, E. (presenting), Degen, J.	
CUNY 2020 , Amherst, USA, <i>virtual</i>	March 2020
Poster on "Production expectations modulate contrastive inference".	
Kreiss, E. (presenting), Degen, J.	
CAMP3 2019 , Santa Cruz, USA	October 2019
Talk on "Production expectations modulate contrastive inferences".	
Kreiss, E. (presenting), Degen, J.	
CogSci 2019 , Montreal, Canada	July 2019
Poster on "Uncertain evidence statements and guilt perception in iterative reproductions of crime stories".	
Kreiss, E. (presenting), Franke, M., Degen, J.	
CogSci 2017 , London, UK	July 2017
Poster on "Mentioning atypical properties of objects is communicatively efficient".	
Kreiss, E. (presenting), Degen, J., Hawkins, R.X.D., and Goodman, N.D.	
XPRAG 2017 , Cologne, Germany	June 2017
Poster on "Mentioning atypical properties of objects is communicatively efficient".	
Kreiss, E. (presenting), Degen, J., Hawkins, R.X.D., and Goodman, N.D.	
CUNY 2017 , MIT, USA	Mar 2017
Poster on "Mentioning atypical properties of objects is communicatively efficient".	
Degen, J. (presenting), Kreiss, E., Hawkins, R.X.D., and Goodman, N.D.	