

# KANISHKA MISRA

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## Academic Positions

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2025–current	<b>The University of Texas at Austin</b> Assistant Professor of Linguistics Donald D. Harrington Faculty fellow (2025-26)
2024–2025	<b>Toyota Technological Institute at Chicago</b> Research Assistant Professor ( <i>Endowed research faculty position for up to 3 years</i> ) Courtesy Affiliation from 2025–current.
2023–2024	<b>The University of Texas at Austin</b> Postdoctoral Research Fellow, Department of Linguistics <b>Advisor:</b> Dr. Kyle Mahowald

## Education

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**Purdue University**, West Lafayette, USA

Ph.D. in Computer Information Technology, 2018–2023

**Dissertation:** *On Semantic Cognition, Inductive Generalization, and Language Models*

**Advisor:** Dr. Julia Taylor Rayz

**Committee:** Dr. Allyson Ettinger, Dr. Victor Raskin, Dr. Jin Wei Kocsis, Dr. John Springer

**Purdue University**, West Lafayette, USA

M.S. in Computer Information Technology, 2020 (work performed alongside PhD requirements)

**Thesis:** *Exploring Lexical Sensitivities in Word Prediction Models: A case study on BERT*

**Advisor:** Dr. Julia Taylor Rayz

**Note:** Work performed alongside requirements for Ph.D.

**Purdue University**, West Lafayette, USA

B.S. *with distinction*. Computer Information Technology, 2014–2018

Minor in Statistics

## Industry Experience

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Fall 2022	<b>Google Research - Research Intern</b> <b>Project:</b> Triggering Multi-Hop Reasoning in LLMs with Soft-prompts. <b>Host(s):</b> Siamak Shakeri and Cicero Nogueira dos Santos.
Summer 2021	<b>Pythonic AI - NLP Engineering/Research Intern</b> <b>Project:</b> Integrating Biomedical Commonsense into Language Models. <b>Host:</b> Baoqiang Cao, CTO and Co-founder.

## Work In Progress and Preprints

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- 2025 Lalchand Pandia, Allyson Ettinger, **Kanishka Misra**. On Diversity vs. Difficulty for Data Selection. *In prep*.
- 2025 Sanghee Kim, **Kanishka Misra**. Hey, wait a minute: On at-issue sensitivities in Language Models. *In prep*.
- 2025 Yulu Qin,<sup>\*</sup> Dheeraj Varghese,<sup>\*</sup> Adam Dahlgren Lindström, Lucia Donatelli, **Kanishka Misra**,<sup>†</sup> Najoung Kim.<sup>†</sup> [Vision-and-Language Training Helps Deploy Taxonomic Knowledge but Does Not Fundamentally Alter It](#). *Under Review*. <sup>\*</sup>,<sup>†</sup>: Equal Contribution.
- 2024 **Kanishka Misra**, Najoung Kim. [Generating novel experimental hypotheses from language models: A case study on cross-dative generalization](#). *Preprint*.
- 2022 **Kanishka Misra**. [minicons: Enabling Flexible Behavioral and Representational Analyses of Transformer Language Models](#). Software Paper. *Preprint/Demo*.

## Peer-reviewed Publications

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- 2025 Sriram Padmanabhan, **Kanishka Misra**, Kyle Mahowald, Eunsol Choi. [On language models' sensitivity to suspicious coincidences](#). *PragLM Workshop at COLM 2025* (to appear).
- 2025 Qing Yao, **Kanishka Misra**, Leonie Weissweiler, Kyle Mahowald. [Both Direct and Indirect Evidence Contribute to Dative Alternation Preferences in Language Models](#). *COLM 2025* (to appear).
- 2025 William Sheffield, **Kanishka Misra**, Valentina Pyatkin, Ashwini Deo, Kyle Mahowald, Jessy Li. Is It *JUST* Semantics? A Case Study of Discourse Particle Understanding in LLMs. *Findings of ACL 2025* (to appear).
- 2024 Juan Diego Rodriguez, Aaron Mueller, **Kanishka Misra**. [Characterizing the Role of Similarity in the Property Inferences of Language Models](#). *NAACL 2025* (To appear).
- 2024 **Kanishka Misra**, Allyson Ettinger, and Kyle Mahowald. [Experimental Contexts Can Facilitate Robust Semantic Property Inference in Language Models, but Inconsistently](#). *EMNLP 2024*.
- 2024 **Kanishka Misra** and Kyle Mahowald. [Language Models Learn Rare Phenomena from Less Rare Phenomena: The Case of the Missing AANNs](#). *EMNLP 2024*. **Recipient of an Outstanding Paper Award (Top 0.4%)**.
- 2023 **Kanishka Misra**, Cicero Nogueira dos Santos, Siamak Shakeri. [Triggering Multi-hop reasoning in language models using soft-prompts and random walks](#). *Findings of ACL 2023*
- 2023 Koustuv Sinha<sup>\*</sup>, Jon Gauthier<sup>\*</sup>, Aaron Mueller<sup>†</sup>, **Kanishka Misra**<sup>†</sup>, Keren Fuentes, Roger Levy, Adina Williams. [Language model acceptability judgments are not always robust to context](#). *ACL 2023*. **Recipient of an Outstanding Paper Award (Top 1%)**. <sup>\*</sup>,<sup>†</sup>: Equal Contribution
- 2023 Freda Shi<sup>\*</sup>, Xinyun Chen<sup>\*</sup>, **Kanishka Misra**, David Dohan, Ed Chi, Nathan Scharli, Denny Zhou. [Large Language Models Can Be Easily Distracted by Irrelevant Context](#). *ICML 2023*. <sup>\*</sup>: Equal Contribution

- 2023 **Kanishka Misra**, Julia Taylor Rayz, Allyson Ettinger. [COMPS: Conceptual Minimal Pair Sentences for Testing Robust Property Knowledge and its Inheritance in Pre-trained Language Models](#). *EACL 2023*. **Recipient of the Best Paper Award (Top 0.1%)**.
- 2022 **Kanishka Misra**, Julia Taylor Rayz, Allyson Ettinger. [A Property Induction Framework for Neural Language Models](#). *44th Annual Conference of the Cognitive Science Society*.
- 2022 **Kanishka Misra**, Julia Taylor Rayz. [LMs Go Phishing: Adapting Pre-trained Language Models to Detect Phishing Emails](#). *IEEE/ACM Web Intelligence Conference*.
- 2022 **Kanishka Misra**. [On Semantic Cognition, Inductive Generalization, and Language Models](#). *AAAI 2022 Doctoral Consortium*, Vancouver, Canada.
- 2021 **Kanishka Misra**, Allyson Ettinger, Julia Taylor Rayz. [Do Language Models learn typicality judgments from text?](#) *43rd Annual Conference of the Cognitive Science Society*.
- 2021 **Kanishka Misra**, Julia Taylor Rayz. [Finding fuzziness in Neural Network models of Language Processing](#). *Annual Meeting of the North American Fuzzy Information Processing Society 2021*. **Honorable Mention for Best Student Paper**.
- 2020 **Kanishka Misra**, Allyson Ettinger, Julia Taylor Rayz. [Exploring BERT's Sensitivity to Lexical Cues using Tests from Semantic Priming](#). *Findings of the Association for Computational Linguistics: EMNLP 2020*.
- 2020 Qingyuan Hu, Yi Zhang, **Kanishka Misra**, Julia Taylor Rayz. [Exploring Lexical Irregularities in Hypothesis-Only Models of Natural Language Inference](#). *2020 IEEE 19th International Conference on Cognitive Informatics & Cognitive Computing (ICCI\* CC)*.
- 2020 **Kanishka Misra**, Julia Taylor Rayz. [An Approximate Perspective on Word Prediction in Context: Ontological Semantics meets BERT](#). *Annual meeting of the North American Fuzzy Information Processing Society 2020*. Online.
- 2019 **Kanishka Misra**, Hemanth Devarapalli, Tatiana Ringenberg, Julia Taylor Rayz. [Authorship Analysis of Online Predatory Conversations using Character Level Convolution Neural Networks](#). *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Bari, Italy.
- 2019 Tatiana Ringenberg, **Kanishka Misra**, Julia Taylor Rayz. [Not So Cute but Fuzzy: Estimating Risk of Sexual Predation in Online Conversations](#). *2019 IEEE International Conference on Systems, Man and Cybernetics (SMC)*, Bari, Italy. **(joint first author)**
- 2019 Tatiana Ringenberg, **Kanishka Misra**, Kathryn C. Seigfried-Spellar, Julia Taylor Rayz. [Exploring Automatic Identification of Fantasy-Driven and Contact-Driven Sexual Solicitors](#). *2019 Third IEEE International Conference on Robotic Computing (IRC)*, Naples, Italy.
- 2019 Kathryn C. Seigfried-Spellar, Marcus K Rogers, Julia T Rayz, Shih-Feng Yang, **Kanishka Misra**, Tatiana Ringenberg. [Chat analysis triage tool: Differentiating contact-driven vs. fantasy-driven child sex offenders](#). *Forensic Science International*, 2019.

## Peer-reviewed Abstracts

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- 2025 Jwalanthi Ranganathan, Rohan Jha, **Kanishka Misra**, Kyle Mahowald. semantic-features: A User-Friendly Tool for Studying Contextual Word Embeddings in Interpretable Semantic Spaces. *SCiL 2025*. Oregon, USA.
- 2023 **Kanishka Misra** and Najoung Kim. [Abstraction via exemplars? A representational case study on lexical category inference in BERT](#). *BUCLD 48*. [poster]
- 2020 **Kanishka Misra**, Allyson Ettinger, Julia Taylor Rayz. [Exploring BERT's lexical relations using Semantic Priming](#). *CogSci 2020* [poster]
- 2019 **Kanishka Misra**, Hemanth Devarapalli, Julia Taylor Rayz. [L1 Influence on Content Word errors in Learner English Corpora: Insights from Distributed Representation of Words](#). *CogSci 2019*, Montréal, Canada. [poster]

## Presentations and Invited Talks

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| Spring 2025 | <i>Linguistic and Conceptual Generalization From Language Exposure</i><br>UW Madison, Department of Psychology (Colloquium)<br>UT Austin, Department of Linguistics (Colloquium)<br>Boston University, Department of Linguistics (Colloquium) |
| Spring 2025 | <i>Similarity and Category Membership in the Property Inferences of LMs</i><br>Keynote at Structure & Generalization in Multimodal Language Understanding (SAGE-MLU), VU Amsterdam  |
| Spring 2025 | <i>Minicons: A tool for behavioral analysis of neural language models</i><br>Online Colloquium Talk, Conference on Human Sentence Processing  |
| Fall 2024   | <i>Language Models Learn Rare Phenomena from Less Rare Phenomena: The Case of the Missing AANNs</i><br>EMNLP 2024, Main conference (November).  |
| Fall 2024   | <i>Generalization from Indirect Evidence in Language Models</i><br>Guest lecture for UChicago course: <i>Do LLMs Generalize?</i> (taught by Ari Holtzman)<br>Research @ TTIC Series.  |
| Summer 2024 | <i>Controlled Rearing of Language Models can reveal Linguistic Insight</i> (Invited Talk)<br>Princeton Psychology of Language Lab (Adele Goldberg's group)  |
| Spring 2024 | <i>Controlled Rearing of Language Models can reveal Linguistic Insight</i><br>SynSem Seminar, UT Austin Linguistics.<br>South by Semantics Workshop, UT Austin (Invited Talk)   |
| Spring 2024 | <i>Large Language Models and You!</i> (Guest Lecture)<br>Intro to Ling class (taught by Kristie Denlinger, UT Austin)   |

Fall 2023	<i>Analyzing Robust Conceptual Knowledge and Property Inheritance in Language Models</i> (Invited Talk) Guest lecture for <i>Topics in Natural Language Processing</i> (taught by Eunsol Choi) Toyota Technological Institute at Chicago - Research Series. C.Psyd Lab (Marten van Schijndel's lab), Cornell University.
Fall 2023	<i>Language model acceptability judgments are not always robust to context</i> UT Austin NLL Reading Group.
Spring 2023	<i>COMPS: Conceptual Minimal Pair Sentences for testing Robust Property Knowledge and its Inheritance in Pre-trained Language Models</i> EACL 2023, Main Conference
Spring 2023	<i>On the synthetic semantic cognition of language models</i> (Invited Talk) EvLab and LINGO lab. MIT. Toyota Technological Institute at Chicago.
Fall 2022	<i>Conceptual Minimal Pairs for testing Robust Property Knowledge and its Inheritance in Pre-trained Language Models</i> (Invited Talk) CompLing Lab, University of Chicago Human and Machine Learning Lab. New York University Computation and Psycholinguistics Lab. New York University CompLang/Ev Lab joint meeting. MIT Language Evolution, Acquisition and Processing Workshop. University of Chicago
Fall 2022	<i>Triggering Multi-Hop Reasoning in LLMs using Soft-Prompts</i> Prompt-tuning sync. Google Research.
Spring 2022	<i>On Semantic Cognition, Inductive Generalization, and Language Models</i> AAAI 2022 Doctoral Consortium. Vancouver (held online).
Fall 2021	<i>Finding fuzziness in Neural Network Models of Language Processing</i> NAFIPS 2021 (held online).
Summer 2021	<i>Do Language Models Learn Typicality Judgments from Text?</i> CogSci 2021 Main Conference (held online).

## Honors and Awards

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- 2025 **Donald D. Harrington Faculty Fellowship.** *Research Fellowship at the Department of Linguistics, UT-Austin. Amount:* \$75,000 in research funds.
- 2024 **Outstanding Paper Award.** *EMNLP 2024.*
- 2024 **Google Cloud Credits. Co-PI along with Najoung Kim.** *Google. Amount:* \$5000.
- 2023 **Paula Menyuk Travel Award.** *BUCLD 48. Amount:* \$385.
- 2023 **Outstanding Paper Award.** *ACL 2023.*

- 2023 **Best Paper Award**. *EACL 2023*. **Amount:** \$1000.
- 2023 **Bilsland Fellowship**. *Purdue University*. **Amount:** \$25,000 + Tuition (1 year).
- 2022 **Best Student Poster (runner-up)** *PPI Holistic Safety and Security Research Impact area*. **Amount:** \$250.
- 2022 **Fellow**, *Purdue Graduate Student Mentoring Fellows Program*. **Amount:** \$5,000 in research funds.
- 2021 **Honorable Mention for Best Student Paper**, *North American Fuzzy Information Processing Society*. **Amount:** \$100.
- 2019 **Holistic Safety and Security Research Travel Grant**, *Purdue Polytechnic Institute*. **Amount:** \$500.
- 2019 **CIT Research Travel Grant Award**, *Purdue CIT*. **Amount:** \$1200 (CogSci 2019), \$600 (IEEE-SMC 2019).
- 2019 **Best HSS Poster Presentation**, *CERIAS Symposium*. Award presented by committee on Holistic Safety and Security (HSS) research impact area. [[link](#)].
- 2019 **Conference Travel Award**, *Chicago R Unconference*. **Amount:** \$150.
- 2018 **PRF Fellowship**, *Purdue Research Foundation*. Covered two semesters worth of graduate school, in addition to stipend.
- 2018 **Best Poster Award - PPI**, *Purdue Office of Undergraduate Research Expo*. **Amount:** \$250. [[link](#)]
- 2018 **Research Scholarship**, *Purdue Office of Undergraduate Research*. **Amount:** \$500.
- 2017 **First Place**. *Indy Civic Hackathon*. **Amount:** \$2000 split across 4 team members.

## Teaching

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### **Guest Lecturer - *Natural Language Technologies* (CNIT 519)**

**Timeline:** Fall 2019, Fall 2020, Spring 2022

**Course Professor:** Dr. Julia Taylor Rayz

- Two lectures on Neural Network models of Natural Language Processing
- Developed two assignments on language model interpretability and evaluation.

### **Teaching Assistant - *Database Fundamentals* (CNIT 272)**

**Timeline:** Fall 2019, Spring 2020, Fall 2020

**Course Professor:** Dr. Dawn D. Laux

Developed lecture videos and taught fundamentals of relational databases and SQL to three lab sections ( $\approx$  70 students on average across three semesters).

**Instructor Rating:** 4.8 (on average across three semesters)

## Mentorship

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- 2024–** **Yulu Qin** (PhD Student at BU, advised by Dr. Najoung Kim). **Topic(s):** *Role of Vision in Language Models’ Linguistic Representations and Use.*
- 2024–** **Shester Guewou** (PhD Student at TTIC, advised by Dr. Greg Shakhnarovich and Karen Livescu). **Topic(s):** *Targeted Linguistic Analysis of Sign Language Models.*
- 2024–** **Tianyang Xu** (PhD Student at TTIC, advised by Dr. Karen Livescu). **Topic(s):** *Multimodal signals to learning linguistic generalizations.*
- 2024–** **Qing Yao** (PhD Student at UT Austin, advised by Dr. Kyle Mahowald). **Topic(s):** *Learning global psycholinguistic preferences.*
- 2024–** **Lalchand Pandia** (PhD Student at the University of Chicago). **Topic(s):** *Investigating distributional signals of Category Knowledge in Language Models.*
- 2023–** **William Sheffield** (PhD Student at UT Austin, advised by Dr. Jessy Li). **Topic(s):** *Discourse-sensitive properties of Language Models*
- 2023–** **Juan Diego Rodriguez** (PhD Student at UT Austin, advised by Dr. Greg Durrett and Dr. Katrin Erk). **Topic(s):** *Conceptual Organization and Inference in Language Models*
- 2023–** **Sriram Padmanabhan** (Undergraduate at UT Austin). **Topic(s):** *Sampling sensitivity in Language Models*
- 2023–25** **Jwalanthi Ranganathan** (Undergraduate at UT Austin). **Topic:** *Projecting Contextualized Word Embeddings onto Interpretable Semantic Spaces.*
- 2023–** **Daniel Brubaker** (Undergraduate at UT Austin). **Topic:** *Exploring pragmatic inference in LMs with Discourse Connectives.*
- 2020** **Qingyuan “Carol” Hu and Yi Zhang** (Undergraduates). **Topic:** *Exploring Lexical Irregularities in Hypothesis-only Models of Natural Language Inference.* **Outcome:** Publication in *IEEE ICC\* CI 2020*, and a presentation at *PURC 2020*, which was awarded second place across all students from the Purdue Polytechnic Institute.
- 2018–19** **John Phan** (Undergraduate). **Topic:** *Gender Bias in Word Embeddings.* Awarded NSF REU scholarship. **Outcome:** Two poster presentations.

## Reviewing

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<b>Grants</b>	US National Science Foundation - SBE directorate (2024); Panel Member for NSF CISE/IIS (2025)
<b>Journal</b>	<i>Brain and Behavioral Sciences</i> (2025); <i>Open Mind</i> (2025); <i>Journal of Memory and Language</i> (2024); <i>Computational Linguistics</i> (2024); <i>PNAS Nexus</i> (2024); <i>Cognitive Science</i> (2023); <i>Open Mind</i> (2023)
<b>Conference</b>	CogSci (2024); EMNLP (2023); CoNLL (2023); ACL (2023); EACL (2023); CogSci (2020, 2021, 2022); CoNLL (2021, 2022); ARR (2021, 2022); *SEM 2022; EMNLP 2020; IJCAI 2020; *SEM 2019; IEEE-IRC 2019.
<b>Workshop</b>	Blackbox NLP (2023); ICML Workshop on Large Language Models and Cognition (2024)

**Book** Chapman & Hall/CRC Press Statistics Series (2020, 2021).

## Service

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- **Co-organizer**, UChicago and TTIC Joint NLP Seminar Series (2024–2025).
- **Area Chair/Meta Reviewer**, ACL Rolling Review (ARR) 2024 (Feb, April, June, October); 2025 (Feb - *emergency*, May).
- **Area Chair**, *Linguistic Theory, Cognitive Modeling, and Psycholinguistics*. LREC-COLING 2024.
- **Session Chair**, *Linguistic Theory, Cognitive Modeling, and Psycholinguistics*. ACL 2023 (on-site).
- **Organizer**, *Neural Nets for Cognition*. Discussion group at CogSci 2022.
- **Local Arrangements Chair**, *Annual Meeting of the North American Fuzzy Information Processing Society 2021 (NAFIPS 2021) held at Purdue University*.
- **Program Committee**: CoNLL (2021, 2022).
- **Volunteer**, *36th AAAI Conference on Artificial Intelligence*.
- **Graduate Student Advisor**, *Purdue CIT Student Council*.
- **Organizer**, *Undergraduate Research Panel*, Purdue CIT.

## Skills

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<b>Programming</b>	Python, R, pytorch, SQL, $\text{\LaTeX}$
<b>Natural Languages</b>	English (near-native), Hindi (near-native), Gujarati, Odiya

## Software Developed

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**minicons** A toolkit to facilitate behavioral and representational analyses of transformer-based language processing models. [[github](#)]

## Professional Affiliations

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- Association of Computational Linguistics (ACL)
- Cognitive Science Society (CogSci)
- Society for Mathematical Psychology (MathPsych)