

Ashley (Ash) Lewis

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Research Interests

- My research focuses on mitigating hallucinations in interactive dialogue systems through efficient, data-driven approaches. I investigate scalable methods such as knowledge distillation, self-training, and synthetic data generation to improve the factual accuracy and reliability of domain-specific models. Additionally, I develop robust evaluation frameworks to better quantify hallucinations in dialogue settings, combining automated metrics with human evaluation for more effective assessment. My work aims to enhance the usability of AI-driven dialogue systems, particularly in resource-constrained environments, by optimizing training and evaluation methodologies to reduce misinformation while maintaining system efficiency.

Education

- 2019 – May 2026 (expected)  **The Ohio State University** Ph.D. in Computational Linguistics
- 2010 – 2013  **University of Kentucky** B.A. in Linguistics, B.A. in English, minor in Spanish.

Invited Talks

- May 2026  Speaker at the Huntington National Bank's 2026 Analytics & Data Expo
- February 2026  Speaker at the [Big Ten Academic Alliance – Love Data Week](#)
- December 2025  Speaker at Dublin City University's NLP group meeting
- October 2025  Speaker at the [DataConnect Conference 2025](#)
Hallucination in AI Dialogues: Detection and Mitigation
- September 2025  Speaker for the Center for Cognitive and Brain Sciences Fall Retreat
Introducing VISTA Score: Verification in Sequential Turn-Based Assessment
- June 2025  Speaker for [Columbus Data Analytics Wednesdays](#)
Hallucination in the Wild: A Field Guide for LLM Users
Spotting, Understanding, and Reducing AI Mistakes

Awards and Recognitions

- October 2025  Best Reviewer for the [18th International Natural Language Generation \(INLG\) Conference](#)

Awards and Recognitions (continued)

- April 2025 ■ Ilse Lehiste Memorial Fund Graduate Research Award
- Center for Cognitive and Brain Sciences (CCBS) Summer Graduate Award
- March 2025 ■ 1st place in the [Buckeye Language Network \(BLN\) Research Symposium Graduate Student Poster Competition](#)
- July 2023 ■ Best Poster – RISC Capstone Research Symposium
- June 2022 ■ 3rd place in the [Amazon AlexaPrize Taskbot Challenge](#)

Publications

- 1 A. Lewis, A. Perrault, E. Fosler-Lussier, and M. White, *Vista score: Verification in sequential turn-based assessment*, Under review, 2025. arXiv: [2510.27052 \[cs.CL\]](https://arxiv.org/abs/2510.27052).  URL: <https://arxiv.org/abs/2510.27052>.
- 2 A. Lewis, M. White, J. Liu, T. Koike-Akino, K. Parsons, and Y. Wang, “Winning big with small models: Knowledge distillation vs. self-training for reducing hallucination in QA agents,” in *Proceedings of the Fourth Workshop on Generation, Evaluation and Metrics (GEM²)*, O. Arivu, M. Clinciu, K. Dhole, *et al.*, Eds., Vienna, Austria and virtual meeting: Association for Computational Linguistics, Jul. 2025, pp. 705–727, ISBN: 979-8-89176-261-9.  URL: <https://aclanthology.org/2025.gem-1.62/>.
- 3 A. Allen, A. Lewis, Y.-C. Lin, T. Kaumenova, and M. White, “OSU CompLing at the GEM’24 data-to-text task,” in *Proceedings of the 17th International Natural Language Generation Conference: Generation Challenges*, S. Mille and M.-A. Clinciu, Eds., Tokyo, Japan: Association for Computational Linguistics, Sep. 2024, pp. 100–111.  URL: <https://aclanthology.org/2024.inlg-genchal.11/>.
- 4 R. Hase, M. R. U. Rashid, A. Lewis, *et al.*, “Smoothed embeddings for robust language models,” in *Safe Generative AI Workshop*, 2024.  URL: <https://arxiv.org/abs/2501.16497>.
- 5 A. Lewis, L. Mo, M.-C. de Marneffe, H. Sun, and M. White, “Insights of a usability study for KBQA interactive semantic parsing: Generation yields benefits over templates but external validity remains challenging,” in *Proceedings of the Fourth Workshop on Human Evaluation of NLP Systems (HumEval) @ LREC-COLING 2024*, S. Balloccu, A. Belz, R. Huidrom, E. Reiter, J. Sedoc, and C. Thomson, Eds., Torino, Italia: ELRA and ICCL, May 2024, pp. 47–62.  URL: <https://aclanthology.org/2024.humeval-1.5>.
- 6 A. Lewis and M. White, “Mitigating harms of LLMs via knowledge distillation for a virtual museum tour guide,” in *Proceedings of the 1st Workshop on Taming Large Language Models: Controllability in the era of Interactive Assistants*, Prague, Czech Republic: Association for Computational Linguistics, UNDER REVIEW, Sep. 2023.  URL: <https://aclanthology.org/2023.tllm-1.4/>.
- 7 L. Mo, S. Chen, Z. Chen, *et al.*, “Roll up your sleeves: Working with a collaborative and engaging task-oriented dialogue system,” in *Proceedings of the 24th Meeting of the Special Interest Group on Discourse and Dialogue*, S. Stoyanchev, S. Joty, D. Schlangen, O. Dusek, C. Kennington, and M. Alikhani, Eds., Prague, Czechia: Association for Computational Linguistics, Sep. 2023, pp. 197–201.  DOI: [10.18653/v1/2023.sigdial-1.19](https://doi.org/10.18653/v1/2023.sigdial-1.19).
- 8 S. Chen, Z. Chen, X. Deng, *et al.*, “Bootstrapping a user-centered task-oriented dialogue system,” in *Alexa Prize TaskBot Challenge 1 Proceedings*, 2022.  URL: <https://www.amazon.science/alexaprize/proceedings/bootstrapping-a-user-centered-task-oriented-dialogue-system>.

- 9 L. Mo, A. Lewis, H. Sun, and M. White, "INSPIRED: A large-scale dataset and simulation framework for exploring interactive learning in knowledge-based question answering," in *Proceedings of the Second Workshop on Interactive Learning for Natural Language Processing*, 2022.  URL: <https://internlp.github.io/2022/documents/2022/papers/14.pdf>.
- 10 L. Mo, A. Lewis, H. Sun, and M. White, "Towards transparent interactive semantic parsing via step-by-step correction," in *Findings of the Association for Computational Linguistics: ACL 2022*, S. Muresan, P. Nakov, and A. Villavicencio, Eds., Dublin, Ireland: Association for Computational Linguistics, May 2022, pp. 322–342.  DOI: [10.18653/v1/2022.findings-acl.28](https://doi.org/10.18653/v1/2022.findings-acl.28).

Research Projects

- 2025  **VISTA Score: Verification in Sequential Turn-based Assessment**
- Designed a dialogue-level factuality metric for detecting hallucinations in multi-turn AI systems.
 - Decomposes conversations into atomic claims and tracks verified, contradicted, and subjective statements across turns.
 - Demonstrated improved accuracy over FActScore on multiple conversational RAG benchmarks.
 - Presented preliminary results at DataConnect 2025.
- Summer 2024  **Trustworthy Generative AI Internship** at Mitsubishi Electric Research Lab. Boston, MA. See Publications (1, 3).
- Focus on confabulation (hallucination) reduction in an LLM question-answering system over product user manuals.
 - Evaluation of LLM jailbreak-prevention models.
 - Building internal ethics guidelines for AI/LLM use.
- 2022 –  **COSI Museum Tour Guide**, Creating a virtual museum tour guide for the COSI museum in Columbus, Ohio. See Publications (5).
- Design of system pipeline for a document-grounded dialogue agent in which the documents can be updated without needing to retrain the system models.
 - Design and implementation of the generation model, which takes the user question, the conversational context, and a related document to generate a response in real time.
 - Experimentation with LLMs for generation and evaluation.
- 2019 –  **Conversational Interactive Semantic Parsing** See Publications (4, 8, 9)
- Designing an interactive framework by which a non-expert human user can explore a knowledge base via a natural-language dialogue.
 - Designing a crowdsourcing task on Amazon Mechanical Turk for the creation of a dataset intended for interactive semantic parsing research. Focus on ethical and fair payment and interaction with workers.
 - Collecting, annotating, and analyzing collected data.
 - Developing the generation component by implementing a pragmatics-inspired approach to reduce confabulation/hallucination and increase semantic fidelity.
 - Conducting a user study on AMT to test the viability of our system for real use.

Research Projects (continued)

Summer 2023

■ RISC Internship

- Research for Intelligence & Security Challenges (RISC) program through the Applied Research Laboratory for Intelligence and Security (ARLIS).
- Led a small team on an NLP-focused project for identifying author personality characteristics from written texts.
- Selected as best poster in final capstone event. Presented work to high-level security/DoD officials.

2021-2022

■ Amazon AlexaPrize Taskbot Challenge

Awarded 3rd Place. See Publications (6, 7)

- Participated in an international competition to develop a taskbot for Amazon Alexa that will dynamically and interactively help users walk through a DIY or cooking task.
- Developed a content filtration system to prevent the taskbot from accepting inappropriate tasks.
- Improved methods by which the taskbot explains instructions to a user in a sensible way, balancing brevity and clarity.

Skills

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| Languages | ■ English, Spanish (Intermediate), Korean (High Beginner), Polish (Beginner) |
| Coding | ■ Python, R, L ^A T _E X, SPARQL, SQL |
| Systems | ■ Machine Learning, PyTorch, Huggingface, etc. |

Community Involvement

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| 2025 | ■ Program Committee. Served on the program committee for the 18th International Natural Language Generation (INLG) Conference |
| 2023 – | ■ Graduate Studies Committee. Formulating the policies and requirements for degrees in linguistics, ensuring students in the program are making reasonable progress towards the requirements, making policies around the admission process to the program. |
| 2023 | ■ Department Culture Working Group. Designed to address graduate student issues as it relates to diversity, inclusion, conflicts, etc. within the Linguistics department. |
| 2022 – | ■ Mentorship Program Committee. Co-founder and organizer of a peer mentoring program for graduate students in the Linguistics department. |
| | ■ Peer Mentor. Mentoring a 1st/2nd year Linguistics Ph.D. student. |
| 2020 – 2021 | ■ Undergraduate Mentor. Mentor to three undergraduate students in the Linguistics department. |
| 2019 – 2021 | ■ Development Committee. Fundraising, program building, and newsletter publishing for the Linguistics Department. |
| 2019 – 2020 | ■ Speakers' Committee. Organizing and coordinating guest speaker visits in the Linguistics Department. |
| 2019 – 2021 | ■ Social Media Administrator. Maintaining social media presence for the Linguistics Department. |

Previous Employment History

- 2017 – 2019  **English Teacher**, Budnae Public Elementary School. Daejeon, South Korea.
- 2015 – 2017  **Student Affairs Officer**. University of Kentucky, College of Health Sciences. Lexington, KY.
- 2014 – 2015  **English Teacher**. Kids&Co Kindergarten. Warsaw, Poland.