

# Ashley (Ash) Lewis

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## Research Interests

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- 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

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- 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

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- May 2026   **Women in Tech Global Conference 2026**
- Huntington National Bank's 2026 Analytics & Data Expo**
- February 2026   **AI Ethics Workshop at Tsukuba University**  
(Tsukuba, Japan)
- Linguistics and Generative AI: Ethical and Social Perspectives**  
(Tsukuba, Japan)
- Big Ten Academic Alliance – Love Data Week**
- December 2025   **Dublin City University's NLP group meeting**
- October 2025   **DataConnect Conference 2025**  
*Hallucination in AI Dialogues: Detection and Mitigation*
- September 2025   **Center for Cognitive and Brain Sciences Fall Retreat**  
*Introducing VISTA Score: Verification in Sequential Turn-Based Assessment*

## Invited Talks (continued)

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- June 2025  [Columbus Data Analytics Wednesdays](#)  
*Hallucination in the Wild: A Field Guide for LLM Users*  
*Spotting, Understanding, and Reducing AI Mistakes*

## Awards and Recognitions

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- January 2026  Nominated for the College of Arts and Sciences Graduate Student Award for Mentoring Excellence (pending)  
Nominated by: Linguistics Faculty
- October 2025  Best Reviewer for the [18th International Natural Language Generation \(INLG\) Conference](#)
- 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

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-  A. Lewis, A. Perrault, E. Fosler-Lussier, and M. White, *Vista score: Verification in sequential turn-based assessment*, Under review, 2025. arXiv: [2510.27052](https://arxiv.org/abs/2510.27052) [cs.CL].  URL: <https://arxiv.org/abs/2510.27052>.
-  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 (GEM<sup>2</sup>)*, O. Arviv, 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/>.
-  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/>.
-  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>.
-  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/](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](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](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.

## Research Projects (continued)

- 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.
- 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

- Languages **English**, Spanish (Intermediate), Korean (High Beginner), Polish (Beginner)
- Coding **Python**, R,  $\LaTeX$ , SPARQL, SQL
- Systems **Machine Learning**, PyTorch, Huggingface, etc.

## Community Involvement

- 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.

## Community Involvement (continued)

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- 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

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- 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.