Wesley G. Morris

Nashville, TN | +1 470 808 8774 | wesley.g.morris@gmail.com
wesleygmorris.github.io | https://github.com/wesleygmorris/

Research Summary

Ph.D. candidate specializing in the application of transformer-based large language models and multimodal machine learning to educational tools and assessment. Expertise includes automated text evaluation, question generation, and the analysis of natural speech prosody and pragmatics. Proficient in psychometric and advanced statistical methods, including Multi-Level Modeling, Item Response Theory, and Structural Equation Modeling, to solve complex problems of inter-rater reliability in both research and operational settings.

Education

- **Ph.D., Cognition in Context (In Progress)** | Vanderbilt University, Nashville, TN.
  GPA: 3.9. Coursework in multi-level modeling, item response theory, neural networks, and transformers.
- **M.A., Applied Linguistics and TEFL (2013)** | Georgia State University, Atlanta, GA
- **B.A., Psychology (2011)** | Charter Oak State College, New Britain, CT
  Graduated cum laude (GPA: 3.78). Member, Alpha Sigma Lambda Honor Society.

Highlights & Awards

- **Grand Prize Winner**, NAEP Math Automated Scoring Challenge (2023)
- **NSF National I-Corps Grant ($50,000)** for commercialization of academic tools (2026)
- **Owen School of Business Chancellor's Launch Grant ($23,889)** for the iTELL startup (2026)
- **NSF Mid-South Regional I-Corps Pitch Competition Award ($2,500)** for iTELL customer discovery (2025)
- **AMI Montessori Teacher Certification** (Association Montessori International, 2016)

Technical Skills

- **Machine Learning & NLP:** Transformers, LLMs, Recurrent Neural Networks, Multimodal Models, Sequence Classification, Hugging Face, SpaCy.
- **Statistics & Modeling:** Multi-Level Modeling, Item Response Theory, Structural Equation Modeling, Rasch Measurement.
- **Programming & Tools:** Python (PyTorch, data analysis/visualization libraries), R, JavaScript (Express.js, NextJS, REST APIs).

Research Experience

- **Research Assistant** | Vanderbilt University (2022 – Present)
  Advisor: Prof. Scott Crossley (sacrossley@gmail.com)
  - Led analysis for the Feedback Competition, developing an AI tool for discourse-level essay annotation using Python and R.
  - Co-developed and served as CEO of iTELL, an intelligent textbook framework that generates interactive content from provided texts.
- **21st Century World Track Lead, Tools Competition** | The Learning Agency (2022 – Present)
  Directed the Schmidt Futures-funded grant competition to advance educational technologies in assessment and learning science.
  - Meg Benner, Competition Director (meg@the-learning-agency.com)
- **Graduate Research Assistant** | Georgia State University (2011 – 2013)
  Advisor: Prof. Scott Crossley.
  - Supported data analysis, transcription, and research on text quality. Performed essay rating using analytic rubrics.

Teaching Experience

- **Teaching Assistant, Graduate NLP Course** | Vanderbilt University (2023 – Present)
  Prof. Scott Crossley (scott.crossley@vanderbilt.edu)
    - Lead lecture sessions and design curriculum on tokenization, embeddings, transformer architectures, and LLM fine-tuning.
    - Mentor students on implementing and debugging Python-based NLP projects (SpaCy, Hugging Face).
- **Grammar & Writing Instructor** | CMCH Middle School (2020 – 2022)
  Developed and delivered a functional grammar curriculum to improve students' analytical writing across genres.
    - Elaine Padron, Academic Director (epadron@chayamushka.org)
- **Upper Primary Teacher** | International Montessori School of Hong Kong (2015 – 2020)
  Led a Montessori classroom and delivered professional development courses on English grammar and EAL instruction.
    - Adam Broomfield, Principal (adam.broomfield@ims.edu.hk)
- **Head of English** | Montessori School of Beijing (2013 – 2015)
  Coordinated the English department, developed a Communicative Language Teaching curriculum for ages 6-12, and created a reading instruction program. Trained teachers as a certified "How Language Works" tutor.
    - Shahir Shahidian, Lead Teacher (shahirhahidian@msb.edu.cn)

Grants

- NSF National I-Corps Grant ($50,000) – 2026
- Owen School of Business Chancellor's Launch Grant ($23,889) – 2026
- NSF Mid-South Regional I-Corps Pitch Competition ($2,500) – 2025

Selected Conference Presentations & Service

- **Session Organizer:** "Capturing Students' Metacognitive Study Strategies using NLP," AERA, 2025 (with C. Zepeda).
- **Presenter:** "Word probability predictions using LLM," AAAL, 2023 (with L. Holmes).
- **Reviewer:** *Computers & Education: AI*, *Intl. J. of AI in Education*, *Behavior Research Methods*, *J. of Second Language Writing* (2024).

Publications

1. Morris, W., Crossley, S. A., Langdon, H., & Trumbore, A. (2023). Using Transformer Language Models to Validate Peer-Assigned Essay Scores in Massive Open Online Courses (MOOCs). In *Proceedings of the Thirteenth International Conference on Learning Analytics & Knowledge* (LAK '23), Arlington, Texas, March 13–17, 2023.
2. Morris, W., Crossley, S., Holmes, L., Ou, C., McNamara, D., & Dascalu, M. (2023). Using Transformer Language Models to Provide Formative Feedback in Intelligent Textbooks. In *Proceedings of the Twenty-Fourth International Conference on Artificial Intelligence in Education* (AIED '23), Tokyo, Japan, July 3–6, 2023.
3. Holmes, L., Crossley, S., Morris, W., Sikka, H., & Trumbore, A. (2023). Deidentifying Student Writing with Rules and Transformers. In *Proceedings of the Twenty-Fourth International Conference on Artificial Intelligence in Education* (AIED '23), Tokyo, Japan, July 3–6, 2023.
4. Holmes, L., Crossley, S., Morris, W., & Sikka, H. (2023). PILLO: An Open-Source System for Personally Identifiable Information Labeling and Obfuscation. *Information and Learning Science*, 124(9/10), 285–305. https://doi.org/10.1108/ILS-03-2023-0023
5. Crossley, S. A., Tian, Y., Baffour, P., Franklin, A., Kim, Y., Morris, W., Benner, B., Picou, A., & Boser, U. (2023). Measuring Second Language Proficiency Using the English Language Learner Insight, Proficiency and Skills Evaluation (ELLIPSE) Corpus. *International Journal of Learner Corpus Research*, 9(2), 248–271. https://doi.org/10.1075/ijlcr.22013.cro
6. Coscia, A., Holmes, L., Morris, W., Choi, J., Crossley, S., & Endert, A. (2024). iScore: Visual Analytics for Interpreting How Language Models Automatically Score Summaries. In *Proceedings of the 29th ACM Conference*

on Intelligent User Interfaces (IUI '24), Greenville, SC, USA, March 18–21, 2024. https://doi.org/10.1145/3640543.3645150

7. Morris, W., Crossley, S., Holmes, L., Ou, C., Dascalu, M., & McNamara, D. (2024). Formative Feedback on Student-Authored Summaries in Intelligent Textbooks Using Large Language Models. *International Journal of Artificial Intelligence in Education*, 34(3), 1276–1310. https://doi.org/10.1007/s40593-023-00361-4
8. Morris, W., Holmes, L., Choi, J. S., & Crossley, S. (2024). Automated Scoring of Constructed Response Items in Math Assessment Using Large Language Models. *International Journal of Artificial Intelligence in Education*, 34(4), 1551–1582. https://doi.org/10.1007/s40593-023-00379-8
9. Morris, W., Choi, J. S., Holmes, L., & Gupta, V. (2024). Automatic Question Generation and Constructed Response Scoring in Intelligent Texts. In *Proceedings of the 17th International Conference on Educational Data Mining* (EDM '24), Atlanta, Georgia, July 14–17, 2024.
10. Kim, M., Kim, J., Bae, Y., Morris, W., Holmes, L., & Crossley, S. (2024). How AI Evaluates Learner Comprehension: A Comparison of Knowledge-Based and Large Language Model (LLM)-Based AI Approaches. Submitted to the *18th International Conference of the Learning Sciences* (ICLS 2024), Buffalo, New York: International Society of the Learning Sciences.
11. Crossley, S., Tian, Y., Choi, J. S., Holmes, L., & Morris, W. (2024). Plagiarism Detection Using Keystroke Logs. In *Proceedings of the 17th International Conference on Educational Data Mining* (EDM '24), Atlanta, Georgia, July 14–17, 2024 (pp. 476–483).
12. Crossley, S., Choi, J. S., Morris, W., Holmes, L., & Gupta, V. (2024). Using Intelligent Texts in a Computer Science Classroom: Findings from an iTELL Deployment. In *Proceedings of the Educational Data Mining in Computer Science Education Workshop* (CSEDM '24), Atlanta, Georgia, USA, July 14, 2024.
13. Choi, J. S., Morris, W., Holmes, L., & Crossley, S. (2024). Focus Time and Writing Performance in an Intelligent Textbook. In *Selected Papers of the Educational Data Mining in Writing and Literacy Instruction Workshop*, Atlanta, Georgia, USA, July 14, 2024.
14. Morris, W., Holmes, L., Choi, J. S., & Crossley, S. (2025). Distinguishing Effective Writing Styles in the PERSUADE Corpus. *Journal of Writing Research*, 16(3). https://doi.org/10.17239/jowr-2025.16.03.05
15. Morris, W., Holmes, L., Choi, J. S., & Crossley, S. (2025). Uncovering Differential Sensitivity Toward Linguistic Features of Cohesion in Large Language Models. In *Proceedings of the Twenty-Sixth International Conference on Artificial Intelligence in Education* (AIED '25), Palermo, Italy, July 22–26, 2025.
16. Crossley, S., Morris, W., Choi, J. S., & Holmes, L. (2025). Assessing Learning in an Intelligent Text Framework. In *Proceedings of the 18th International Conference on Educational Data Mining* (EDM '25), Palermo, Italy, July 20–23, 2025.
17. Crossley, S., Choi, J. S., Morris, W., Holmes, L., & Joyner, D. (2025). AI Enhanced Intelligent Texts and Learning Gains. In *Proceedings of the Sixth Workshop on Intelligent Textbooks* (iTextbooks '25), Palermo, Italy, July 26, 2025.
18. Morris, W., Vitale, J., & Arvelo, I. (2025). Using Whisper Embeddings for Audio-Only Latent Token Classification of Classroom Management Practices. In *Proceedings of the Artificial Intelligence in Measurement and Education Conference* (AIME '25), Pittsburgh, USA, October 27–29, 2025.
19. Holmes, L., Morris, W., Crossley, S., & Choi, J. S. (2026). Assessing Fairness in Finetuned Scoring Models with Demographically Restricted Training Data. *Assessing Writing*, 68, 101032. https://doi.org/10.1016/j.asw.2026.101032
20. Holmes, L., Morris, W., Choi, J. S., & Crossley, S. A. (2026). Word Predictability as a Measure of Second Language Proficiency. *Language Learning*, 76(1). https://doi.org/10.1111/lang.12650
21. Crossley, S. A., Choi, J. S., Holmes, L., Morris, W., Rus, V., & Lintean, M. (2026). The Use of Large Language Models in an Intelligent Text Framework. In A. M. Sinatra, V. Rus, A. C. Graesser, & P. M. Lawton (Eds.), *Design Recommendations for Intelligent Tutoring Systems: Volume 12 — Generative Artificial Intelligence* (pp. 119–134). Orlando, FL: US Army Combat Capabilities Development Command – Soldier Center. ISBN 978-0-9977258-7-2.

22. Morris, W., Holmes, L., & Crossley, S. (2026). Psychometric Analysis of LLM Differential Sensitivity to Word Predictability Using Explanatory MFRM. In *Proceedings of the Sixteenth International Conference on Learning Analytics & Knowledge* (LAK '26), Bergen, Norway, April 27–30, 2026.