

ORION WELLER

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EDUCATION

Johns Hopkins University

Ph.D. in Computer Science

Center for Language and Speech Processing

Advisors: Benjamin Van Durme and Dawn Lawrie

08/2021 – 05/2026 (expected)

GPA: 4.0/4.0

Brigham Young University

Bachelor of Science, Summa Cum Laude (Top 1%)

Majors: Computer Science, Statistics; Minor in Mathematics

08/2017 – 04/2021

GPA: 4.0/4.0

AWARDS

- NSF Graduate Research Fellowship, 2022
- DoD NDSEG Fellowship (declined), 2022
- CRA Outstanding Undergraduate Researcher in North America Award, 2021
- Goldwater Scholarship, 2020

INDUSTRY EXPERIENCE

Google DeepMind	with Jinhyuk Lee, Michael Boratko, Iftekhar Naim	2025
Samaya AI	with Jack Hessel, Ashwin Paranjape, Yuhao Zhang	2024
Allen Institute for AI (AI2)	with Luca Soldaini, Kyle Lo, Arman Cohan	2023
Apple	with Matthias Sperber	2020, 2021
Allen Institute for AI (AI2)	with Matt Gardner, Matt Peters	2020

PUBLICATIONS

- [1] **Orion Weller**, Kathryn Ricci, Eugene Yang, Andrew Yates, Dawn Lawrie, Benjamin Van Durme, “Rank1: Test-time compute for reranking in information retrieval,” 2025.
- [4] **Orion Weller**, Benjamin Chang, Mahsa Yarmohammadi, Sam Barham, Sean MacAvaney, Arman Cohan, Luca Soldaini, Benjamin Van Durme, Dawn Lawrie, “mFollowIR: a Multilingual Benchmark for Instruction Following,” *ECIR*, 2025 **Honorable Mention Award (Top 4)**.
- [5] Benjamin Warner, Antoine Chaffin, Benjamin Clavié, **Orion Weller**, Oskar Hallström, Said Taghadouini, Alexis Gallagher, Raja Biswas, Faisal Ladhak, Tom Aarsen, Nathan Cooper, Griffin Adams, Jeremy Howard, Iacopo Poli, “Harder, Better, Faster, Longer: A Modern Bidirectional Encoder for Fast, Memory Efficient, and Long Context Finetuning and Inference,” *ACL*, 2025.
- [6] Kenneth Enevoldsen, Isaac Chung, Imene Kerboua, Márton Kardos, ... Sara Hooker, Chenghao Xiao, Vaibhav Adlakha, **Orion Weller**, Siva Reddy, Niklas Muennighoff, “MMTEB: Massive Multilingual Text Embedding Benchmark,” *ICLR*, 2025.
- [8] Nathaniel Weir, Bhavana Dalvi, **Orion Weller**, Oyvind Tafjord, Sam Hornstein, Alexander Sabol, Peter Jansen, Benjamin Van Durme, Peter Clark, “From Models to Microtheories: Distilling a Model’s Topical Knowledge for Grounded Question Answering,” *ICLR*, 2025.

- [9] **Orion Weller**, Benjamin Van Durme, Dawn Lawrie, Ashwin Paranjape, Yuhao Zhang, Jack Hessel, “Promptriever: Instruction-Trained Retrievers Can Be Prompted Like Language Models,” *ICLR*, 2025.
- [10] Abe Bohan Hou, **Orion Weller**, Guanghui Qin, Eugene Yang, Dawn Lawrie, Nils Holzenberger, Andrew Blair-Stanek, Benjamin Van Durme, “CLERC: A Dataset for Legal Case Retrieval and Retrieval-Augmented Analysis Generation,” *NAACL*, 2025.
- [11] Dongwei Jiang, Jingyu Zhang, **Orion Weller**, Nathaniel Weir, Benjamin Van Durme, Daniel Khashabi, “Self-[In]correct: LLMs Struggle with Refining Self-Generated Responses,” *AAAI*, 2025.
- [12] **Orion Weller**, Benjamin Chang, Sean MacAvaney, Kyle Lo, Arman Cohan, Benjamin Van Durme, Dawn Lawrie, Luca Soldaini, “FollowIR: Evaluating and Teaching Information Retrieval Models to Follow Instructions,” *NAACL*, 2025.
- [13] Jeffrey Cheng, Marc Marone, **Orion Weller**, Dawn Lawrie, Daniel Khashabi, Benjamin Van Durme, “Dated Data: Tracing Knowledge Cutoffs in Large Language Models,” *Conference on Language Models (CoLM)*, 2024 **Outstanding Paper Award (one of top 4)**.
- [14] Nathaniel Weir, Muhammad Khalifa, Linlu Qiu, **Orion Weller**, Peter Clark, “Learning to Reason via Program Generation, Emulation, and Search,” *NeurIPS*, 2024.
- [15] Brennon Brimhall, **Orion Weller**, Matthew Green, Ian Miers, “A Waterlog for Detecting and Tracing Synthetic Text from Large Language Models,” *Cryptology ePrint Archive*, 2024.
- [16] James Mayfield, Eugene Yang, Dawn Lawrie, Sean MacAvaney, Paul McNamee, Douglas W Oard, Luca Soldaini, Ian Soboroff, **Orion Weller**, Efsun Kayi, Kate Sanders, Marc Mason, Noah Hibbler, “On the Evaluation of Machine-Generated Reports,” *SIGIR*, 2024.
- [17] Nathaniel Weir, Kate Sanders, **Orion Weller**, Shreya Sharma, Dongwei Jiang, Zhengping Zhang, Bhavana Dalvi Mishra, Oyvind Tafjord, Peter Jansen, Peter Clark, “Enhancing Systematic Decompositional Natural Language Inference Using Informal Logic,” *EMNLP*, 2024.
- [18] **Orion Weller**, Dawn Lawrie, Benjamin Van Durme, “NevIR: Negation in Neural Information Retrieval,” *EACL*, 2024.
- [19] **Orion Weller**, Kyle Lo, David Wadden, Dawn Lawrie, Benjamin Van Durme, Arman Cohan, Luca Soldaini, “When do Generative Query and Document Expansions Fail? A Comprehensive Study Across Methods, Retrievers, and Datasets,” *Findings of EACL*, 2024.
- [20] **Orion Weller**, Marc Marone, Nathaniel Weir, Dawn Lawrie, Daniel Khashabi, Benjamin Van Durme, ““According to...” Prompting Language Models Improves Quoting from Pre-Training Data,” *EACL*, 2024.
- [21] **Orion Weller**, Aleem Khan, Nathaniel Weir, Dawn J Lawrie, Benjamin Van Durme, “Defending Against Disinformation Attacks in Open-Domain Question Answering,” *EACL*, 2024.
- [22] James Mayfield, Eugene Yang, Dawn Lawrie, Samuel Barham, **Orion Weller**, Marc Mason, Suraj Nair, Scott Miller, “Synthetic Cross-language Information Retrieval Training Data,” *ArXiv*, 2023.
- [23] Samuel Barham, **Orion Weller**, Michelle Yuan, Kenton Murray, Mahsa Yarmohammadi, Zhengping Jiang, Siddharth Vashishtha, Alexander Martin, Anqi Liu, Aaron Steven White, “MegaWika: Millions of Reports and their Sources across 50 Diverse Languages,” *ArXiv*, 2023.
- [24] Kangda Wei, Dawn J Lawrie, Benjamin Van Durme, Yunmo Chen, **Orion Weller**, “When Do Decompositions Help for Machine Reading?” *EMNLP*, 2023.
- [25] **Orion Weller**, Marc Marone, Vladimir Braverman, Dawn Lawrie, Benjamin Van Durme, “Pre-trained Models for Multilingual Federated Learning,” *NAACL*, 2022.

- [26] **Orion Weller**, Kevin Seppi, Matt Gardner, “When to Use Multi-Task Learning vs Intermediate Fine-Tuning for Pre-Trained Encoder Transfer Learning,” *ACL*, 2022.
- [27] **Orion Weller**, Matthias Sperber, Telmo Pires, Hendra Setiawan, Christian Gollan, Dominic Telaar, Matthias Paulik, “Speech Translation for Code-Switched Speech,” *Findings of the ACL*, 2022.
- [28] Wilson Fearn, **Orion Weller**, Kevin Seppi, “Exploring the Relationship Between Algorithm Performance, Vocabulary, and Run-Time in Text Classification,” *NAACL*, 2021.
- [29] **Orion Weller**, Matthias Sperber, Christian Gollan, Joris Kluivers, “Streaming Joint Speech Translation and Transcription,” *EACL*, 2021.
- [30] **Orion Weller**, Luke Sagers, Carl Hanson, Quinn Snell, Michael Barnes, Shannon Tass, “Predicting Suicidal Thoughts and Behavior among Adolescents using the Risk and Protective Factor Framework: a Large-Scale Machine Learning Approach,” *Plos One*, 2021.
- [31] **Orion Weller**, Nicholas Lourie, Matt Gardner, Matthew Peters, “Learning from Task Descriptions,” *EMNLP*, 2020.
- [32] **Orion Weller**, Jordan Hildebrandt, Ilya Reznik, Christopher Challis, E. Shannon Tass, Quinn Snell, Kevin Seppi, “You Don’t Have Time to Read This: an Exploration of Document Level Reading Time Prediction,” *ACL*, 2020.
- [33] **Orion Weller**, Nancy Fulda, Kevin Seppi, “Can Humor Prediction Datasets be used for Humor Generation? Humorous Headline Generation via Style Transfer,” *FigLang @ ACL*, 2020.
- [34] **Orion Weller**, Kevin Seppi, “The rJokes Dataset: a Large Scale Humor Collection,” *LREC*, 2020.
- [35] **Orion Weller**, Kevin Seppi, “Humor Detection: a Transformer Gets the Last Laugh,” *EMNLP*, 2019.

SKILLS

Languages	English (native), Portuguese (intermediate), French (basic)
Programming Languages	Main: Python, Basic: C++, R, Javascript, Golang, SQL
Frameworks & Tools	PyTorch, Linux, Mechanical Turk, Django, VueJS

SERVICE

Workshop Organizer

- Scholarly Document Processing (SDP) Workshop at ACL, 2024
- Mid-Atlantic Student Colloquium on Speech, Language and Learning, 2022-2025

Teaching

- EN.500.111: Reasoning with ChatGPT, Johns Hopkins University, Fall 2023
- After School Coding Instructor for Elementary School with Code in the Schools, 2021-2022

Program Committee Member

- **2025** Reviewer: CoLM, ARR. Area Chair: ARR
- **2024** Reviewer: NeurIPS, CoLM, LLM4Eval, ARR, ICLR. Area Chair: ARR
- **2023** Reviewer: ACL, EMNLP, ARR, NeurIPS
- **2022** Reviewer: ACL Rolling Review (ARR)
- **2021** Reviewer: ACL Rolling Review, ACL, EMNLP, NAACL (secondary)
- **2020** Reviewer: Meta-Learning@NeurIPS