ORION WELLER

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EDUCATION

Johns Hopkins University 2021 - Present
Ph.D. in Computer Science
Center for Language and Speech Processing

Brigham Young University 2017 - 2021
Bachelor of Science, Summa Cum Laude (Top 1%) GPA: 4.0/4.0
Majors: Computer Science, Statistics; Minor in Mathematics

AWARDS

- CRA Outstanding Undergraduate Researcher in North America Award, 2021
- Fulbright Fellowship Semi-Finalist, 2021
- NSF Gradate Research Fellowship Honorable Mention, 2021
- Goldwater Scholarship, 2020
- BYU Scholarships: Wessel/Marshall Memorial (2019), Juanita Miller Nelson (2018)
- BYU Dean's List (all semesters)

PUBLICATIONS

[1] Wilson Fearn, **Orion Weller**, Kevin Seppi, "Exploring the Relationship Between Algorithm Performance, Vocabulary, and Run-Time in Text Classification," in *North American Chapter of the Association for Computational Linguistics (NAACL)*, 2021.

[2] **Orion Weller**, Matthias Sperber, Christian Gollan, Joris Kluivers, "Streaming Joint Speech Translation and Transcription," in *European Chapter of the Association for Computational Linguistics (EACL)*, Apr. 2021.

[3] **Orion Weller**, Nicholas Lourie, Matt Gardner, Matthew Peters, "Learning from Task Descriptions," in *Empirical Methods in Natural Language Processing (EMNLP)*, Nov. 2020.

[4] **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," in *Association of Computational Linguistics (ACL)*, Jul. 2020.

[5] **Orion Weller**, Nancy Fulda, Kevin Seppi, "Can Humor Prediction Datasets be used for Humor Generation? Humorous Headline Generation via Style Transfer," Jul. 2020.

[6] **Orion Weller**, Luke Sagers, Carl Hanson, Quinn Snell, Michael Barnes, Shannon Tass, "Predicting Mental Health and Suicidal Ideation Among Adolescents Using the Risk and Protective Factor Framework (Abstract Only)," *Society for Prevention Research Conference*, Jun. 2020.

[7] **Orion Weller**, Kevin Seppi, "The rJokes Dataset: a Large Scale Humor Collection," in *Language Resources and Evaluation (LREC)*, Mar. 2020.

[8] **Orion Weller**, Kevin Seppi, "Humor Detection: a Transformer Gets the Last Laugh," in *Empirical Methods in Natural Language Processing (EMNLP)*, Nov. 2019.

RESEARCH EXPERIENCE

Apple AI/ML Research June 2020 - Sept 2020; May 2021 - Aug 2021

- Researching machine translation. Mentor: Matthias Sperber.
- Developed an end-to-end speech translation model that is comparable to standard cascading approaches but has half the number of parameters, designed to reduce inference costs. Work presented at WeCNLP'20 and published at EACL'21 [2].

Allen Institute for Artificial Intelligence Jan 2020 - June 2020

- Worked with the AllenNLP team to research transfer learning, generalization, and robustness for question answering. Mentors: Matt Gardner and Sameer Singh.
- Developed a framework to push models towards general language understanding, by learning to solve tasks from their description instead of by examples. Created a benchmark dataset to instantiate this framework. Work published at ENNLP'20 [3].

Applied Machine Learning Lab at BYU Dec 2018 - Dec 2019; Sept 2020 - May 2021

- Researched natural language understanding, meta-learning, and language generation. Advisors: Kevin Seppi and Nancy Fulda.
- Researched computational humor, gathering a dataset of more than half a million jokes. Developed models to identify and understand humor, showing improved results via transfer learning. Work published at EMNLP'19 [8] and LREC'20 [7].
- Performed initial research into generating jokes automatically, showing jokes that were rated by crowdsourcers as equal to human-created jokes in a blind experiment. Work published at the FigLang@ACL workshop [5].

Computational Health Lab at BYU Sept 2018 - Dec 2019

- Studied psychological predictors of suicidal ideation. Advisors: Quinn Snell and Shannon Tass.
- Improved early classification of at-risk individuals. Work presented at the Society of Prevention Research Conference [6] and to the Utah State Prevention Department.

Undergraduate Capstone Project with Adobe Sept 2018 - Apr 2019

- Researched NLP modeling of humans (psycholinguistics). Advisors: Ilya Reznik and Chris Challis.
- Developed a novel study to analyze reading time and model human behavior. Used this to predict human reading time of document-sized text. Work published at ACL'20 [4].

ENGINEERING EXPERIENCE

Qualtrics Apr 2019 - Aug 2019

- Responsible for prototyping a new system for handling edits on the Data Pipeline team.

Digi International Oct 2017 - Jan 2019

- Worked on building firmware for wireless networking modules on the Zigbee standard.

SKILLS

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

ACADEMIC SERVICE

Program Committee Member

- 2021: ACL, EMNLP, NAACL (secondary)
- 2020: Meta-Learning@NeurIPS