

ORION WELLER

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EDUCATION

Brigham Young University, Provo

Sept 2017 - April 2021

Bachelor of Science

GPA: 4.0/4.0

Majors: Computer Science and Statistics

Minor: Mathematics

Selected Courses: Natural Language Processing (graduate), Information Retrieval (graduate), Deep Learning, Data Science Capstone, Machine Learning, Computer Vision, Ethics in CS

AWARDS

- CRA Outstanding Undergraduate Researcher in North America Award, 2021
- Fulbright Fellowship Semi-Finalist, 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

- Researched machine translation, developing more efficient methods. 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

Dec 2018 - Dec 2019; Sept 2020 - Present

- 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

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.

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, managing data ingestion, flow, and storage. Used RabbitMQ, Galera, and MongoDB.

Digi International

Oct 2017 - Jan 2019

- Worked on building firmware for wireless networking modules on the Zigbee standard. Improved and standardized the way our radio modules sample I/O on the 802.15.4 protocol.

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

Reviewing

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

Group Mentoring Moderator

Helped manage and set up group mentoring sessions at ACL 2020.