

Michael Hanna

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1 EDUCATION:

- University of Trento, Trento, Italy** (expected July 2022)¹
MA, Cognitive Science (specialization in computational linguistics, GPA: (ongoing))
- Charles University, Prague, Czech Republic** (expected July 2022)¹
MSc, Computer Science (specialization in computational linguistics, GPA: A)
- University of Chicago, Chicago, IL** (June 2020)
BSc with Honors, Computer Science (specialization in machine learning, GPA: 3.95)
BA with Honors, Linguistics (GPA: 3.96)
Honors Thesis: Measuring the Interpretability of Latent-Space Representations of Sentences from Variational Autoencoders. Advised by Allyson Ettinger

2 PUBLICATIONS:

- (Forthcoming) Michael Hanna and Ondrej Bojar. 2021. **A Fine-Grained Analysis of BERTScore**. In *Proceedings of the Sixth Conference on Machine Translation*. Punta Cana, Dominican Republic (Online). Association for Computational Linguistics
- (Forthcoming) Michael Hanna and David Marecek. 2021. **Analyzing BERT's Knowledge of Hypernymy via Prompting**. In *Proceedings of the Fourth BlackboxNLP Workshop on Analyzing and Interpreting Neural Networks for NLP*. Punta Cana, Dominican Republic. Association for Computational Linguistics

3 EXPERIENCE:

- Research Assistant, Charles University, Institute of Formal and Applied Linguistics** (October 2021 – ongoing)
- Researching the use of high-quality reference translations with automated machine translation metrics
- Research Assistant, University of Chicago, Department of Linguistics** (Winter 2019 – Spring 2020)
- Used unsupervised clustering to test if ELMo embeddings of polysemous words were embedded in distinct clusters in the embedding space; this could allow for unsupervised learning of word senses
 - Used zero-shot probing tasks to explore the relationship between BERT's (masked) language modeling abilities / pre-training and its high performance on down-stream tasks
- Software Engineering Intern, Orbital Insight (Boston)** (Summer 2019)
- As part of a transition between geodata providers, used Python / scikit-learn to detect inaccurate geo-datapoints from the new data provider. This reduced by 10x the median error for datapoints.
 - Wrote monitors in Python that both tracked and plotted trends in data, and sent alerts when anomalies were detected. Wrote Dockerfiles for easy deployment to Kubernetes
- Grader, University of Chicago, Department of Computer Science** (Fall 2018 – Summer 2020)
- Graded student projects, provided feedback regarding errors and areas for improvement

¹ These degrees are part of the Erasmus Mundus Language and Communication Technologies (LCT) dual-degree program. The 2020-2021 academic year took place at Charles University, and the 2021-2022 academic year, at the University of Trento. Both degrees are expected in July 2022.

Research assistant, Pompeu Fabra University (Barcelona)

(June 2018 - Aug. 2018)

- Studied topics in natural language processing and machine and deep learning
- Used deep learning and other ML techniques to classify text based on sentiment

Student Programmer, University of Chicago STEM Education

(Feb. 2018 - June 2018)

- Developed projects in Scratch to teach students (grades K-8) math and CS fundamentals

4 SKILLS:

- **Programming and Markup Languages:** Python, C, LaTeX, Elm, Scratch
- **Human Languages:** English (native), Spanish (fluent), Korean (conversational)
- **Machine Learning Frameworks:** PyTorch, Tensorflow 2.0, scikit-learn

5 SCHOLARSHIPS & HONORS:

- **LCT Master's Scholarship:** \$60,000 scholarship for master's study of computational linguistics in the EU
- **Phi Beta Kappa:** academic achievement honors fraternity (top 5% of undergraduate class)