TESSA MASIS

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EDUCATION

Ph.D. in Computer Science, University of Massachusetts Amherst, 2020 – 2026 (Expected)
- Advisor: Brendan O'Connor

B.A. in Computational Linguistics, University of Massachusetts Amherst, 2018 – 2020
- GPA: 3.94; Dean's List all semesters; Phi Kappa Phi member; Eta Sigma Phi member

Prospective B.S. in Computer Science Engineering and Linguistics, Cornell University, 2015 – 2017

Relevant Coursework: Machine Learning, Neural Networks, Natural Language Processing, Algorithms, Computer Systems Principles, Multivariable Calculus, Probability, Linear Algebra, Differential Equations, Computational Linguistics, Cognitive Modeling, Syntax, Phonetics and Phonology, Theories of Learning, Data Visualization and Exploration

RESEARCH EXPERIENCE

Graduate Research Assistant, University of Massachusetts Amherst, Fall 2020 – Present
- Natural language processing and computational social science research
- Conducted analysis and experiments for understanding variation in African American Language from social text corpora
- Supervised by Dr. Brendan O'Connor

Undergraduate Research Assistant, University of Massachusetts Amherst, Spring 2019 – Spring 2020
- Implemented language models for linguistic probe task assessing the ability of deep context-sensitive neural network language models to acquire deictic knowledge from text
- Designed and implemented data-processing and morphological parsing scripts
- Supervised by Dr. Carolyn Anderson and Dr. Gaja Jarosz

Analytics and Machine Intelligence Intern, Raytheon BBN Technologies, Cambridge, MA, Summer 2019
- Implemented multilingual predictive word error rate classifiers using KNN, SVM, logistic regression, and random forests
- Designed and ran experiments on predicting word error rate from raw audio and speech recognition output
- Created synthetic transcribed code-switching speech corpora from monolingual ones

PUBLICATIONS & PRESENTATIONS

1 Investigating grammatical variation in African American English on Twitter. **Tessa Masis**, Chloe Eggleston, Lisa Green, Taylor Jones, Meghan Armstrong, and Brendan O'Connor. Presented at the *International Conference on Computational Social Science (IC2S2)*. 2023.

2 Investigating Morphosyntactic Variation in African American English on Twitter. **Tessa Masis**, Chloe Eggleston, Lisa Green, Taylor Jones, Meghan Armstrong, and Brendan O'Connor. In *Proceedings of the Society for Computation in Linguistics (SCiL)*. 2023.

3 Exploring morphosyntactic variation in low-resource English varieties. **Tessa Masis**. Lightning talk presentation at CRA-IDEALS Grad Cohort Workshop. 2023.

4 A large-scale Twitter-based exploration of morphosyntactic geographic variation in African American English. **Tessa Masis**, Chloe Eggleston, Anissa Neal, Lisa Green, and Brendan O'Connor. Presented at *New Ways of Analyzing Variation (NWAV) 50*. 2022.

5 Corpus-Guided Contrast Sets for Morphosyntactic Feature Detection in Low-Resource English Varieties. **Tessa Masis**, Anissa Neal, Lisa Green, and Brendan O'Connor. In *Proceedings of the First Workshop on NLP Applications to Field Linguistics at COLING.* 2022.

6 ProSPer: Probing Human and Neural Network Language Model Understanding of Spatial Perspective. **Tessa Masis** and Carolyn Jane Anderson. In *Proceedings of the Fourth BlackboxNLP Workshop on Analyzing and Interpreting Neural Networks for NLP at EMNLP*. 2021.

7 Can neural network language models learn spatial perspective from text alone? Carolyn Jane Anderson and **Tessa Masis**. Paper presented at the *Bridging AI and Cognitive Science Workshop (BAICS) at ICLR*. 2020.

8 The Poetics of Gender Devaluation in Homeric Heroism. **Tessa Masis**. Paper accepted at the *Scholarship for Undergraduate Literary Studies Conference*, cancelled due to COVID-19. 2020.

9 Predictive Word Error Rate Metrics (WERMs). **Tessa Masis**. Presented work completed over the course of internship at Raytheon BBN Technologies. 2019.

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Massachusetts Amherst, Spring 2022
- Co-designed and lead weekly discussion sections, graded assignments, and proctored exams for Programming Methodology course
- Held weekly office hours and helped lead review sessions for exams

Machine Learning Club Team Leader, University of Massachusetts Amherst, Fall 2020
- Designed and led weekly meetings introducing NLP and Data Science concepts to undergraduate students

Undergraduate Teaching Assistant, University of Massachusetts Amherst, Fall 2019
- Graded assignments and proctored exams for Programming Methodology course
- Mentored students via office hours and digital media

ESL Instructional Tutor, Jones Library, Amherst, MA, Spring 2019 – Fall 2019
- Volunteered in a local program giving biweekly individualized lessons to adult immigrants

GUEST LECTURES

- "Exploring morphosyntactic variation in low-resource English varieties". Mount Holyoke College, COMSC 341NL: Natural Language Processing. 2023.
- _____. Wellesley College, CS 333: Natural Language Processing. 2022.

SERVICE

- Program Committee Member, Workshop on NLP Applications to Field Linguistics at EACL 2023

HONORS AND AWARDS

- NSF Graduate Research Fellowship, 2023
- Ford Foundation Predoctoral Fellowship Honorable Mention, 2023
- CRA-Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (IDEALS) Grad Cohort Workshop Participant (fully funded travel & arrangements), 2023
- Anuradha and Hanuma Kodavalla Graduate Scholarship in Computer Science, 2022
- Scholarship of Undergraduate Literary Studies Conference Travel Award, cancelled due to COVID-19
- Out For Undergrad Tech Conference Participant (fully funded travel & arrangements), 2019
- Alexander Rebelo DeSerpa Prize for Excellence in Beginning Greek, 2018
- Out in STEM Annual Conference Travel Award, 2018

SKILLS

- Programming languages: Python, Java, JavaScript, MATLAB, C, Perl
- Specialized software: NumPy, PyTorch, scikit-learn, TensorFlow, NLTK
- Languages: Proficient in French, Ancient Greek; Prior experience in Armenian, Mandarin