MARIE GRACE

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PROFILE

As a first-year PhD student in Computer Science, I bring a robust foundation in both Computer Science and Linguistics, with a keen focus on their intersection. My research projects have centered on student-AI teaming and offensive language error analysis, demonstrating my proficiency in addressing complex language-related challenges. With a dedicated focus on creating reliable, explainable, and safe AI models, I am committed to using Natural Language Processing for human-centered applications.

EDUCATION

University of Colorado Boulder | 2027
Ph.D. Student in Computer Science

University of Colorado Boulder | 2023
Master of Science in Computational Linguistics

Georgia Institute of Technology | 2021
Bachelor of Science in Computer Science, French Minor

SKILLS

Python, R, MATLAB, Git, PyTorch, TensorFlow, SQL, Hadoop, Spark

CONCEPTS

Natural language Processing, Data Center Scale Computing, Neuro-Symbolic Approaches to NLP Machine Learning, Artificial Intelligence, Computational Models of Discourse, Algorithms, Linguistics, Database Systems, Probability and Statistics, Computer Organization and Programming, Combinatorics,
Linear Algebra

EXPERIENCE

May 2021-May 2022
Research and Development Intern | Autonomy Team| Sandia National Labs
Used machine learning to predict a vehicle's intended terminal location, evaluated various model types, conducted hyperparameter optimization, determined training data requirements, and assessed computational burdens during training and testing.

August 2023- Present
Teaching Assistant | Intro to Computational Thinking | CU Boulder
Instructing two sections of 40 students each, creating course materials.

RESEARCH PROJECTS

May 2022-May 2023
Graduate Researcher | **NSF National Institute for Student-AI Teaming (iSAT)**
Designed and implemented an annotation scheme for students' classroom speech to evaluate key linguistic features that are predictive of positive collaboration behavior.

May 2022-August 2022
Graduate Researcher | Offensive Language Error Analysis (OLEA)
Designed and developed a tool for evaluating model performance on offensive and hateful language classification and researched current model performance and limitations to provide meaningful linguistic insights.

May 2019- May 2021
Undergraduate Researcher | **Dynamic Adaptive Robotic Technologies (DART)**
Used Dynamic Time Warping and Hidden Markov Models in recognition algorithms to identify flightpaths in a flight simulator and implemented control arbitration to create a shared control system between the pilot and an autonomous agent that leads to smoother and more accurate flying.

PAPERS

OLEA: Tool and Infrastructure for Offensive Language Error Analysis in English
Grace, M, Seabrum, J , Srinivas, D, Palmer, A. 2023.
Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics: System Demo (EACL- System Demo)

Dependency Dialogue Acts -- Annotation Scheme and Case Study.
Cai, Jon Z., Brendan King, Margaret Perkoff, Shiran Dudy, Jie Cao, Marie Grace, Natalia Wojarnik, et al. 2023.
The 13th International Workshop on Spoken Dialogue Systems Technology (IWSDS)

Designing an AI Partner for Jigsaw Classrooms.
Cao, J., Dickler, R., Grace, M., Bush, J. B., Roncone, A., Hirshfield, L. M., Walker, M. A., & Palmer, M. S.
Proceedings of the Workshop on Language-Based AI Agent Interaction with Children (AIAIC'2023)

Intent Recognition on Fixed-Wing Aircraft
Grace, M. (2021). [Undergraduate Research Option Thesis, Georgia Institute of Technology].