

Alexandria Leto

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Research Interests

natural language processing, artificial intelligence, computational social science, social computing

Education

Ph.D. in Computer Science | 2023 - 2028

University of Colorado Boulder

Master of Science in Computer Science | 2021 - 2022

University of Denver

Bachelor of Science in Computer Science | 2017 - 2020

Colorado School of Mines

Technical Skills

Coding languages: Python, C/C++, SQL, Java, JavaScript, HTML, CSS

Other: training machine learning models, large language models, data analysis

Publications

Peer-Reviewed Conference and Workshop Publications

Framing in the Presence of Supporting Data: A Case Study in U.S. Economic News - 2024

Alexandria Leto, Elliot Pickens, Cohen D. Needell, David Rothschild, Maria Leonar Pacheco

Proceedings of The 62nd Annual Meeting of the Association for Computational Linguistics (ACL)

<https://aclanthology.org/2024.acl-long.24/>

A First Step towards Measuring Interdisciplinary Engagement in Scientific Publications: A Case Study on NLP + CSS Research - 2024

Alexandria Leto, Shamik Roy, Alexander Hoyle, Daniel E. Acuna, Maria Leonor Pacheco

Proceedings of the Sixth Workshop on Natural Language Processing and Computational Social Science (NLP+CSS)

<https://aclanthology.org/2024.nlpccs-1.11/>

Using Markov Chain Text Generators to Facilitate Found Poetry Creation - 2021

Alex Leto, Toni Lefton, Tom Williams

Proceedings of Educational Advances in Artificial Intelligence: Model AI Assignments Track

Peer-Reviewed Workshop and Conference Papers/Abstracts without Published Proceedings

Toward Optimal Search and Retrieval for RAG - 2024

Alexandria Leto, Cecilia Aguerrebere, Ishwar Bhati, Ted Willke, Mariano Tepper, Vy Ai Vo

2nd Workshop on Attributing Model Behavior at Scale (ATTRIB 2024@NeurIPS, under review)

Selecting Facts and Frames: Misinforming About the Economy Without Telling a Lie - 2024

Elliot Pickens, Alexandria Leto, Maria Leonar Pacheco, David Rothschild

International Conference on Computational Social Science (Abstract)

A Computational Model of Selection and Framing in News about the U.S. Economy - 2023

Alexandria Leto, Elliot Pickens, Cohen D. Needell, David Rothschild, Maria Leonar Pacheco

New Directions in Analyzing Text as Data (Abstract)

Recognition

- “Best Work in Progress Award” at 2024 University of Colorado Boulder Computer Science Annual Research Expo for work entitled “Framing in the Presence of Supporting Data: A Case Study in U.S. Economic News”

Research Experience

AI Research Intern | Intel Labs | June - September 2024

Worked on a self-directed research initiative exploring new avenues for optimal information retrieval for a Retrieval-Augmented Generation (RAG) pipeline

Submitted a workshop paper (under review) focused on studying a large language model’s ability to attribute generated content to a source document in a RAG pipeline

Graduate Researcher | University of Colorado - Boulder | August 2023 - present

Taking a leadership role and working with collaborators on several research projects aimed at developing state of the art frameworks for large-scale computational social science studies

Research Assistant | University of Denver | June 2022 - August 2023

Awarded funding to conducting Natural Language Processing research to develop new techniques to automate qualitative coding

Worked with a cross-disciplinary research team to conduct an analysis of meeting minutes and faculty interviews in the context of diversity, equity and inclusion issues

Graduate Researcher | University of Denver | January 2021 - December 2022

Performed a sentiment and frequency analysis of eight-thousand novels from the Project Gutenberg Library to identify and quantify gender inequality and explored novel data visualization techniques to create a portfolio of computer art communicating the results

Presented research findings at SLSA academic conference

Undergraduate Researcher | Colorado School of Mines | August 2019 - December 2022

Awarded funding by the Mines Undergraduate Research Fellowship to conduct cross-disciplinary research that included creating a natural language generation tool for writing poetry and creating an experimental poetry portfolio

Created a set of educational resources aimed at providing an opportunity for practitioners from both the artistic and computer science communities to simultaneously achieve learning outcomes which resulted in a conference invitation

Talks

Using Computational Analysis to Quantify Author Sentiment Toward Female Characters

Alex Leto and Scott Leutenegger

Invited to the Midwest Modern Language Association 2022 annual conference (MMLA-22) hosted virtually

Humanizing Computational Literature Analysis through Art-Based Visualizations

Alex Leto and Scott Leutenegger

Invited to the Society for Science, Literature and the Arts 2022 annual conference (SLSA-22) hosted by Purdue

Bias in Facial Recognition Systems (Round Table Invitation)

Alex Leto, Terran Mott, Autumn McMillan and Tom Williams

Invited to participate in round table at IEEE International Conference on Robot and Human Interactive Communication 2022 (RO-MAN 22) following submission of artwork exploring gender and racial bias in facial recognition systems embedded in robots

Teaching Experience

Teaching Assistant | University of Colorado - Boulder | August 2023 - May 2024

Assisted in teaching Human Computer Interaction, including preparing materials, grading assignments, hosting office hours and conducting recitation.

Mentored students, providing guidance and support in understanding course content and assignments.

Adjunct Professor | University of Denver | January 2023 - March 2023

Contributed to shaping overhauled computer science curriculum by helping to design an introductory computer science course

Delivered lectures, designed assignments, hosted office hours and managed teaching assistants, resulting in positive course feedback from students

Teaching Assistant | University of Denver | January 2021 - June 2023

Assisted in teaching courses including Database Management, Systems Programming, and Introductory Java and Python courses

Responsibilities included timely grading and hosting office hours, which resulted in lasting relationships with professors and students