Xiaomeng (Miranda) Zhu

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Education

2019 – Expected May 2023

Wellesley College – Wellesley, MA
Candidate for Bachelor of Arts
Double Major in Computer Science and Cognitive and Linguistic Sciences (Linguistics concentration)
GPA: 3.95/4

Relevant coursework: Natural Language Processing, Machine Learning, Phonetics and Phonology, Semantics and Pragmatics, Algorithms

Publications

2022

XiaoshuoNLP: A Natural Language Processing Pipeline for Chinese Literary Texts *(In Progress)*
Meng Hui Liu*, **Xiaomeng Zhu***, Carolyn Jane Anderson

Research experience

May 2022 – Present

Wellesley College Cognitive and Linguistic Sciences Honors Thesis
Advisor: Angela Carpenter
Review literature on bilingualism, code-switching, and phonetic transfer, design experiments to elicit code-switched data, and run statistical models on collected vowel formants

May 2022 – Present

Wellesley College Science Center Summer Research Program
Advisor: Carolyn Anderson
Evaluate existing NLP tools on literary works, design and train a neural network for character cluster merging, and implement a pipeline for processing Chinese literary texts

Jan 2022 – Present

Wellesley College Sociolinguistics Lab
Advisor: Sabriya Fisher
Implement a Python script that extracts sociolinguistic features of interest through text processing techniques, organize and code phonetic data from the CORAAL corpus in Praat, and analyze relevant vowel qualities

Feb 2021 – May 2022

MIT Experimental Syntax and Semantics Lab
Faculty Advisor: Martin Hackl. Direct Advisor: Elizabeth Rosenstein
Designed experimental interface and collected data on PCIbex farm, conducted statistical analysis with R Studio, and assisted with data interpretation

Dec 2021 – March 2022

MIT Department of Linguistics
Advisor: Danfeng Wu
Planned in-person recording sessions with participants, introduced quiet room and experimental settings, monitored participants' behavior and the recording quality, and annotated and edited recording files in Audacity

Jun – Aug 2020

MIT Media Lab
Faculty Advisor: Alex Pentland, Direct Advisor: Mohsen Bahrami
Built interactive dashboard components that visualized mobility behavior and economic growth using react.js, designed color schemes for the map and accompanying widgets, and communicated with team members to improve dashboard design and revised based on collective feedback

Teaching experience

Spring 2022, Fall 2022

Teaching assistant, CS 240: Foundations of Computer Systems (Wellesley College)
Instructors: Andrew Davis, Franklyn Turbak

Fall 2020 Term 2

Teaching assistant, CS 204: Introduction to Front-End Web Development (Wellesley College)
Instructor: Scott Anderson

Industry experience

Summer 2021

Shanghai Baosight Software Co., Ltd. (Data Science Intern) – Shanghai, China
Advisor: Yuzhu Chen
Retrieved steel production data using IBM Db2 Toad, analyzed steel defect patterns using decision tree, clustering, and PCA algorithms, and summarized and presented results to the team

Presentations

Nov 2022

Project XiaoshuoNLP: Combining Literary and Computational Interests
Tanner Conference, Wellesley College

Oct 2022

XiaoshuoNLP: A Natural Language Processing Pipeline for Chinese Literary Texts
Wellesley College Science Complex Opening Celebration Poster Session

Aug 2022

XiaoshuoNLP: A Natural Language Processing Pipeline for Chinese Literary Texts
Wellesley College Science Center Summer Research Program Poster Fair

Projects

Oct - Dec 2021

Tense in Mandarin Chinese
Reviewed existing literature on the existence of Tense in Mandarin Chinese, summarized main issues of controversy, explored the possibility of having Tense undefined in the Deep Structure, and presented work to the class

Feb - Apr 2021 **Phonetics and Phonology of Korean**
Worked with a native Korean speaker to conduct recordings of phonetic and phonological phenomena, analyzed waveforms and spectrograms in Praat, validated results against existing theories, and presented work to the class

Oct - Dec 2020 **Social Variation of Words and Sounds in American Dialect**
Collected sociolinguistic data using crowd-sourced survey, evaluated social variation patterns of words and phonemes in North American English, identified dialect regions using isoglosses, and verified results against William Labov's first principle on language change

Technical skills

Programming languages
Proficient in: Python, R
Familiar with: C, Java, Racket, SML
Web Development: HTML, CSS, JavaScript, React.js

Software
Praat, Audatiy, LaTeX, Git

Languages
English and Mandarin Chinese (native proficiency), Spanish (working proficiency)