Xiaomeng (Miranda) Zhu

xz2@wellesley.edu xiaomeng-zhu.github.io

EDUCATION

Wellesley College, Wellesley, MA — Expected May 2023
Candidate for Bachelor of Arts — GPA: 3.95/4.00
Double Major in Computer Science and Cognitive and Linguistic Sciences (Linguistics concentration)

Massachusetts Institute of Technology, Cambridge, MA
Cross-registered Student

Relevant Courses: Natural Language Processing, Machine Learning, Algorithms, Semantics, Syntax, Logic

PUBLICATIONS

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

RESEARCH EXPERIENCE

Science Center Summer Research Program — May 2022 - Present
Advisor: Carolyn Anderson — Wellesley, MA
Implement an NLP pipeline for processing Chinese literary texts, enhance the accuracy of coreference resolution results by merging character clusters based on BERT embeddings, and evaluate existing Chinese NLP tools on an original literary dataset

Cognitive and Linguistic Sciences Honors Thesis — May 2022 - Present
Advisor: Angela Carpenter — Wellesley, MA
Examine the shift in Chinese vowel quality in Chinese-English insertional code-switching environments, design speech production tasks to elicit code-switched speech from subjects, and run statistical models on collected vowel formants

Wellesley College Sociolinguistics Lab — Feb 2022 - Aug 2022
Advisor: Sabriya Fisher — Wellesley, MA
Designed and implemented a Python script that extracts morphosyntactic features from texts, examined the frequency distribution of phonetically-similar auxiliaries, and coded phonetic data from the CORAAL corpus

MIT Experimental Syntax and Semantics Lab — Feb 2021 - May 2022
Faculty Advisor: Martin Hackl, Direct Advisor: Leo Rosenstein — Cambridge, MA
Investigated felicity differences between determiners using an experimental approach, implemented experimental interface on PCIbex, analyzed data in R Studio using a mixed-effect model, and assisted with data interpretation

MIT Department of Linguistics — Dec 2021 - Mar 2022
Advisor: Danfeng Wu — Cambridge, MA
Conducted in-person experiments with participants to examine the prosodic pattern in either/or constructions, monitored subjects' behavior and recording qualities, and annotated recording files to facilitate prosody extraction

MIT Media Lab — Jun 2020 - Aug 2020
Faculty Advisor: Alex Pentland, Direct Advisor: Mohsen Bahrami — Cambridge, MA
Implemented an interactive dashboard that visualized mobility behavior and economic growth using react.js

PRESENTATION

XiaoshuoNLP: A Natural Language Processing Pipeline for Chinese Literary Texts
Tanner Conference, Wellesley College — Nov 2022

*Equal contribution

Wellesley College Science Complex Opening Celebration Poster Session Oct 2022
Wellesley College Science Center Summer Research Program Poster Fair Aug 2022

TEACHING EXPERIENCE

CS 240: Foundations of Computer Systems Spring 2022, Fall 2022
Teaching Assistant Wellesley College
Instructor: Andrew Davis, Franklyn Turbak

CS 204: Front-End Web Development Term 2, Fall 2020
Teaching Assistant Wellesley College
Instructor: Scott Anderson

AWARDS

Provost's Office Student Research Grant, Wellesley College Dec 2022

CLASS PROJECTS

Whisper Fine-tuning Event Fall 2022
CS 333: Natural Language Processing
Fine-tuned the pre-trained Automatic Speech Recognition model Whisper on the Common Voice dataset for Mandarin Chinese

Syntactic Tense in Mandarin Chinese Fall 2021
LING 244: Language: Form and Meaning
Analyzed main issues of controversy regarding the existence of a syntactic T node in Mandarin Chinese and proposed a theory where tense is undefined in the deep structure

Phonetics and Phonology of Korean Spring 2021
LING 240: The Sounds of Language
Designed and held recording sessions with a native Korean speaker to examine Korean phonetics and phonology, analyzed waveforms and spectrograms in Praat, and validated results against existing theories

Social Variation of Words and Sounds in American Dialect Fall 2020
LING 238: Sociolinguistics
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

INDUSTRY EXPERIENCE

Shanghai Baosight Software Co., Ltd. Jun 2021 - Aug 2021
Machine Learning Intern Shanghai, China
Analyzed and predicted steel defects using machine learning algorithms such as decision tree, clustering, and PCA

LANGUAGES AND TECHNICAL SKILLS

Programming Languages: Python, R, C, Java, Racket, SML
Web Development: HTML, CSS, JavaScript, React.js
Machine Learning: TensorFlow, PyTorch
Software: Praat, Audacity
Languages: English and Mandarin Chinese (native proficiency), Spanish (working proficiency)