Jacqui Wang

wang.15663@buckeyemail.osu.edu — Columbus, OH — (614)-271-7627 — Github: kumaya24

RESEARCH INTERESTS

Computational Linguistics, Syntax-Semantics Interface, Learnability Theory, Neural Grammar Induction, Machine Translation.

EDUCATION

The Ohio State University, Columbus, OH — Expected graduation: May 2026

B.S. Dual degree: **Computer and Information Science** (AI) | **Linguistics** (Comp Ling) — GPA: 3.8

RESEARCH EXPERIENCE

OSU Student Research Assistant, Columbus, OH

Advisor: William Schuler — January 2024 - Present

- Annotated Penn Treebank syntax to develop generalized categorial grammar for better unbounded dependency recovery
- Designed a Python data pipeline to restructure linguistic corpora, providing the high-quality, specialized input necessary for LLM Distillation and improving model efficiency through precise morphosyntactic knowledge transfer
- Developed and analyzed a Probabilistic Context-Free Grammar model for the Dyck language using a recurrent neural network, applying Principal Component Analysis to visualize and interpret the hidden state's learned structural balance

OSU Student Research Assistant, Columbus, OH

Advisor: Wynne Wong — October 2024 - June 2025

- Conducted English&Mandarin experiments, designed data quality protocols, and collaborated on team data analysis methods

OSU Student Research Assistant, Columbus, OH

Advisor: Cynthia Clopper — August 2025 - Present

- Performed manual phonetic labeling and corrected forced alignment boundaries in Praat

SELECTED ACADEMIC PROJECTS

LLM Cultural Adaptation Benchmark, CSE5525, Columbus, OH

Co-authors: Jialing Wu, Yingyu Cheng; Advisor: Sachin Kumar — September 2025 - present

- Designed a 3x3 factorial experiment evaluating GPT-5, Gemini-2.5, and Llama-3.1 on cultural semantic fidelity, finding that context-augmented prompting significantly reduces cultural hallucinations.
- Developed CSI-Match, a novel fuzzy-matching metric using Levenshtein distance to quantify the preservation of Culture-Specific Items against commercial gold standards.
- Conducted Two-Way ANOVA analysis (N=729), validating Skopos Theory by demonstrating that narrative context drives four translation strategies.

Emergent Strategy in Wordle via Reinforcement Learning, LING 8800, Columbus, OH

Advisor: Michael White — October 2025 - present

- Fine-tuned Llama with PPO and custom reward shaping to drive emergent, expert-level information maximization strategies.
- Developed a Shannon Entropy "Expert Solver" to benchmark the agent against a theoretical optimal upper bound.
- Demonstrated mastery of advanced tactics (without explicit instruction) using First-Guess Entropy and Trap-Set analysis.

Boogaloo AI model, HackOhio 12, Columbus, OH

Teammates: Tina Wang, Gary Ding, Jonathan Goshima — October 2024

- Fine-tuned a RAG model for comment analysis, achieving 80-90% accuracy with manually tagged test data
- Developed a Streamlit dashboard to visualize dataset outputs and analyze safety issue trends by risk level and year

TECHNICAL SKILLS & LANGUAGES

- **Programming Languages:** Python, Java, C, SQL, JavaScript, Scheme/Lisp
- **AI/NLP Frameworks:** PyTorch, TensorFlow, Hugging Face Transformers, NumPy, Pandas, WandB
- **Development Tools:** Git, Docker, MongoDB, Flask, Next.js, PyTest
- **Languages:** Chinese (Native), English (Professional), Japanese (Advanced), German (Beginner)

SERVICE

Department-Referred Phonetics Tutor, Columbus, OH — March 2025 - April 2025

- Tutored students in IPA, articulatory phonetics, and acoustic analysis with Praat, enhancing their understanding of concepts and practical application.

OSU AI Club, Columbus, OH

Committee for OHI/O HackAI, front-end & back-end Developer — January 2023 - February 2023

- Developed a dynamic HTML website for the Hack AI competition, integrating content, design, and interactive functionality