Jingni Wu

wujingni930@gmail.com ◇ (571) 309-6176 ◇ GitHub ◇ LinkedIn

Technical Skills

NLP Tools: Pytorch, TensorFlow, Pandas, NumPy, Scikit-learn, NLTK, SpaCy, HuggingFace
Programming: Python, R, SQL
Tools & Frameworks: Github, AWS

Professional Experience

BlackBoiler Washington, D.C.
Computational Linguistics Research & Development Intern 06/2024 - 08/2024

- Built a **retrieval-augmented generation (RAG) chatbot** for contract editing software, building a **legal-domain** retrieval system by fine-tuning domain-specific embedding models, creating a vector database (**Chroma DB**), and implementing a multi-step query process (**LangChain**, **Streamlit**).
- Evaluated and optimized chatbot performance using a combination of **traditional metrics (e.g., BLEU scores)** and **emerging benchmarks (e.g., RAGAS)**, improving answer accuracy from **87% to 95%**.
- Conducted **prompt engineering** and fine-tuned **LLM hyperparameters** to enhance model performance, directly contributing to customer success and product usability.
- Collaborated with **cross-functional teams** (contract analysts, software engineers, and marketing teams) to integrate the chatbot into the product, ensuring alignment with user needs and business goals.

Project Experience

Code Generation with Large Language Models 11/2024 - 12/2024

- Fine-tuned the code-T5 model on Q&A datasets from Stack Overflow to generate code from natural language instructions, enhancing the model's ability to answer programming questions in the data science field.
- Implemented Parameter Efficient Parameter Tuning (PEFT) techniques in training to optimize the model's performance, improving the accuracy in code generation tasks.
- Evaluated the model using OpenAI' s human evaluation framework, achieving a 92.5% accuracy rate in code generation tasks.

Explainable Implicit Hate Speech Detection 04/2024 - 05/2024

- Trained and fine-tuned **DistilBERT** and **SVM models** for fine-granied implicit hate speech detection, optimizing multi-class classification performance through feature engineering and hyperparameter tuning.
- Evaluated model performance using **F1-score,precision, recall, and AUC**, ensuring high accuracy and fairness in hate speech detection tasks.
- Employed **LIME (local interpretable model-agnostic explanation)** to explain predictions, providing insights into influential features and improving model transparency.

Baby Language Model Shared Task 03/2024 - 05/2024

- Trained the **LTG-BERT** model from scratch on 10M and 100M datasets of child and child-directed speech, achieving significant improvements over traditional BERT models.
- Evaluated the model on **GLUE** and **BLiMP benchmarks**, testing its capabilities on various natural language understanding (NLU) tasls.
- Fine-tuned the model on downstream tasks, including **sentiment analysis**, **text entailment**, and **question answering**, to further probe its language understanding capabilities.

Data Augmentation for Gender-Bias Mitigation in Coreference Models 02/2024 - 03/2024

- Designed and implemented a **gender-neutral augmented dataset** by replacing gender pronouns with 'they', utilizing **AllenNLP** and **spaCy** for preprocessing tasks like antecedent clustering, tokenization, and POS tagging.
- Evaluated coreference models(AllenNLP, Stanza, FCoref) on the augmented dataset using **F1-score, precision, and recall** to measure gender bias, identifying areas for improvement in model fairness, and presented the dataset as a **benchmark for future model training and evaluation.**

Education

Georgetown University Washington, D.C.
M.S. Computational Linguistics 08/2023 - 05/2025

Beihang University Beijing, China
M.A. Translation and Interpreting & B.A. Translation and Interpreting 09/2016 - 06/2022

Relevant Coursework

Machine Learning for Linguistics, Neural Networks and Deep Learning, Empirical Methods in Natural Language Processing, Computational Discourse Modeling, Advanced Semantic Representation, Advanced Python with Computational Linguistics, Statistics and R in Analyzing Language Data, Computational Corpus Linguistics, Syntax, Semantics, Phonology.