Jonathan Zheng

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EDUCATION

Georgia Institute of Technology Atlanta, GA

Bachelor of Science in Computer Science – 4.0 GPA *Aug. 2019 – May 2023 (Expected)*

Specification: Intelligence-Theory

GPA: 4.0 / 4.0

GRE: 163 / 170 V, 169 / 170 Q, 5.5/6.0 W

Featured Coursework: Natural Language, Computer Vision, Machine Learning, Introduction to Graduate Algorithms
Linear Algebra, Database Systems, Algorithm Design, Automata and Complexity, Introduction to Artificial Intelligence

RESEARCH EXPERIENCE

Broad-coverage Multi-culture Stance Classification *Aug. 2020 - Jun. 2022*

Georgia Institute of Technology

Advisors: Wei Xu, Alan Ritter

- Conducted a study on misinformation claims and its prevalence on Twitter for English
- Expanded on the limitations and lack of generalizability of previous datasets by selecting a set of 250 multilingual and multicultural misinformation and valid claims from fact-checking websites in English, Arabic, and Hindi
- Annotated Twitter posts labeled with explicit and implicit stance with respect to a claim in the dataset
- Built baseline models by finetuning BERT with Pytorch for pairwise text classification to label for stance
- Employed domain adaptation and cross-lingual transfer to address the issue of limited data for individual claims and in low-resource languages
- Trained baseline architectures with class-balanced focal loss to mitigate stance imbalance and improve stance classification performance
- **Accepted to EMNLP 2022 [1]**

Neologisms and Data Drift *April. 2022 - Present*

Georgia Institute of Technology

Advisors: Wei Xu

- Conducted a study on neologisms occurring on social media and obtained a set of neologisms that became popular in usage starting from 2020
- Collected noisy sentences from Twitter and Reddit that naturally contains a neologism and analyzed the performance of machine translation systems to adequately translate new words in these contexts
- Collected long passages from news article and created queries to test the capability of question-answering systems and GPT-3 to process passages containing new words adequately

PUBLICATIONS

[1] Broad-coverage Multi-culture Stance Classification

Jonathan Zheng, Ashutosh Baheti, Tarek Naous, Wei Xu, Alan Ritter

- Proceedings of EMNLP 2022 (long paper)
- Links: [paper]

The paper can be found on my webpage.

TEACHING

Introduction to Artificial Intelligence (CS 3600) August 2021 – December 2021

Teaching Assistant Georgia Institute of Technology

- Helped to teach the largest introductory AI course of over 300 students by managing the Piazza forum
- Held bi-weekly office hours to assist students in course concerns, course logistics, and course concepts
- Organized bi-monthly review sessions to go over course concepts for every project and exam
- Worked under Professor Mark Riedl

Experience

Software Engineering Intern   May 2021 – August 2021
XPO Logistics   *Marietta, GA*
- Built an LSTM and RNN deep neural network to forecast work orders for individual market hubs and companies
- Built data pipelines to validate data forecasts and upload them to BigQuery for data visualization
- Conducted ablation studies and feature engineering to improve forecast performance of deep learning models

Exchange Student   Sydney, Australia
Bachelor of Science in Computer Science   *Aug. 2022 – Dec. 2022*
Concentration: Artificial Intelligence
- Cultural Experience by doing an exchange program to the University of New South Wales in Sydney, Australia

Projects

Financial Sentiment Analysis | *Python, Jupyter Notebook, TensorFlow, scikit-learn*   May 2020 – Aug. 2020
- Trained Natural Language Processing machine learning models to conduct financial sentiment analysis on the Financial PhraseBank dataset
- Built Logistic Regression, Convolutional, and Recurrent Neural Network models based on previous research

Awards

Academic: President's Undergraduate Research Award 2022
Fellowship: NSF GRFP 2023 (Applied)

Technical Skills

Languages: English, Mandarin (limited working proficiency), Japanese (limited working proficiency)
Programming: Python, Java, JavaScript, C, HTML, CSS, R, LaTeX, Assembly, SQL
Libraries: Pandas, NumPy, Matplotlib, SciPy, Scikit-learn, PyTorch, TensorFlow, HuggingFace, Transformers
Frameworks: React, Node.js, JUnit
Developer Tools: Git, VS Code, Visual Studio, IntelliJ, Jupyter Notebook, PyCharm, BigQuery, Google Cloud
Related Coursework: Database Systems, Deep Learning

References

Professor Wei Xu   *Georgia Institute of Technology*
- wei.xu@cc.gatech.edu

Professor Alan Ritter   *Georgia Institute of Technology*
- alan.ritter@cc.gatech.edu

Professor Mark Riedl   *Georgia Institute of Technology*
- riedl@cc.gatech.edu