Xing Yi (Peter) Liu

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EDUCATION

Columbia University, New York, NY, United States — Feb 2023
M.S. in Computer Science, Machine Learning Track

University of California, Los Angeles, Los Angeles, CA, United States — Jun 2021
B.A.Sc. in Applied Mathematics (with Specialization in Computing) and Business Economics

PROFESSIONAL EXPERIENCE

Columbia University, New York, NY, United States — Jan 2022 – Dec 2022
Head Teaching Assistant, COMS W3203, Discrete Mathematics, Fall 2022, Prof. Tony Dear
Teaching Assistant, COMS W4701, Artificial Intelligence, Summer 2022, Prof. Tony Dear
Teaching Assistant, COMS W4701, Artificial Intelligence, Spring 2022, Prof. Tony Dear

Bedrock Industries, Shanghai, China — Dec 2019
Data Analyst Intern
- Implemented algorithms in R to extract transaction data from Platts financial reports and article titles
- Wrote three reports on product and futures pricing and collaborated in analyzing time series data of pricing combinations involving eight ferrous metals and seven Chinese ports

CITIC Securities, Beijing, China — Aug 2018 – Sep 2018
Investment Banking Intern
- Engaged in the Health Services group and analyzed industry strategies, equipment, and key suppliers
- Contributed on-site at Novogene Corporation for IPO, investigating all three financial statements and ledger accounts, more than a hundred contracts, shareholding structure, and management interviews

PUBLICATIONS

[1] **Xing Yi Liu** and Homayoon Beigi. "Efficient Ensemble Architecture for Multimodal Acoustic and Textual Embeddings in Punctuation Restoration using Time-Delay Neural Networks." Recognition Technologies Technical Report 2023 and in review for Interspeech 2023.

[2] Anqi Cui, Guangyu Feng, Borui Ye, Kun Xiong, **Xing Yi Liu**, and Ming Li. "UWNLP at the NTCIR-12 Short Text Conversation Task." Proceedings of the 12th NTCIR Conference on Evaluation of Information Access Technologies 2016.

UNPUBLISHED RESEARCH

Peptide Quantification — Jul 2022 – Current
Supervisor: Prof. Ming Li, University of Waterloo
- Determining relative abundance of specific peptides in biological samples using machine learning
- Aggregating varying peptide amounts detected in different replicates of the same dilution sample
- Adopting PointIso for peptide feature detection from liquid chromatography mass spectrometry maps

Improving the Efficiency of Multimodal Punctuation Restoration — Mar 2023 – Current
Supervisor: Prof. Homayoon Beigi, Columbia University
- Extending our work in publication [1] by performing ablation studies and further shrinking model size
- Experimenting with linear discriminant analysis for dimensionality reduction of multimodal features
- Studying the effect of jointly training multimodal fusion layers with acoustic and/or text encoders

Descriptive Semantic Image Translation with FlexIT — Mar 2022 – May 2022
Supervisor: Prof. Iddo Drori, Columbia University
- Proposing a novel framework for translating objects in images using natural language descriptors
- Extending FlexIT (CVPR 2022) by introducing MDETR component for multimodal object detection
- Achieving an LPIPS similarity score of 10.4 on the COCO-Stuff dataset, superior to FlexIT's 24.7