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

POSITIONS HELD

Tsinghua University, Beijing, China
Research Intern, Institute for AI Industry Research — Mar 2023 – Current

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

Bedrock Industries, Shanghai, China
Data Analyst Intern — Dec 2019

CITIC Securities, Beijing, China
Investment Banking Intern, Health Services Group — Aug 2018 – Sep 2018

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UNPUBLISHED RESEARCH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