XU Zixin

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EDUCATION

City University of Hong Kong August 2020 - Present
Bachelor of Science in Data Science, minor in Computing - cGPA: **3.80/4.30**
Dean's List (2021-2023 SemA)
Smart Decision | SimpleCredit Scholarships (2022)
Course Highlight
Fundamentals of Machine Learning, Statistical Methods and Data Analysis, Advanced Statistics, Big Data: the Arts and Science of Scaling, Foundation of Reinforce Learning, Coursera: Deep Learning Specialization (Underline: A/A+, Other: A-)

RESEARCH INTERESTS

I am interested in designing and implementing advanced deep learning strategies for image processing, such as object recovery from X-ray coherent diffraction patterns. I am also interested in applications and improvements of Implicit Neural Representation.

PUBLICATION

In Review (* equal contribution)

1. T. Li*, **Z. Xu***, Y. S. Chu, X. Huang, J. Li, "Coordinate-based Neural Network for Fourier Phase Retrieval," *ICASSP*, 2023.
2. R. Wang, S. Yang, Z. Liu, Y. Zhang, X. WANG, **Z. Xu**, J. Wang, S. LI "PhageScope: a well-annotated bacteriophage database with automatic analyses and visualizations," *Nucleic Acids Research*, 2023

RESEARCH EXPERIENCE

Coordinate-based Neural Network for Fourier Phase Retrieval
Technical Assistant

- Developed a coordinate-based neural network for Fourier phase retrieval
- Reproduced different methods, including classical iterative methods and deep learning methods, and compared their performances under noise-free and noise conditions
- Did ablation study of different model structures and loss functions
- Reviewed Fourier phase retrieval problem and the applications: coherent diffraction imaging, ptychography, Bragg coherent diffraction imaging, and Bragg ptychography

PhageScope

- Used d3 to design and implement interactive data visualization graphs, such as a combination of piecharts and heatmap to present protein functional class distributions
- Used Vue and Tailwind css to code common widgets

COURSE PROJECT

Deep Reinforcement Learning for Car Racing **Project Leader**

- Reviewed Deep Q-learning network and several implementations of Proximal Policy Optimization
- Applied Proximal Policy Optimization to solve the OpenAI Gym CarRacing-v0 Environment and reached a mean score of 735.16/1000
- Wrote a report and discussed the results of Deep Q-learning network and Proximal Policy Optimization

Restaurant Recommendation System for Yelp Dataset **Project Leader**

- Pre-processed data and filtered out needed data, such as user ID and restaurant ID
- Trained Neural Collaborative Filtering Model to predict the recommendations. The test accuracy is around 0.91
- Wrote a technical report and presented results during an oral presentation

OTHER EXPERIENCE

Department of Computer Science Feb -May 2023
Student Helper

- Authored questions and explanations on Data Structures and Algorithms.
- Developed a randomization feature for data in questions and established a uniform function API.

EF Academy, *Summer Intern* Jun -Aug 2020
Sales and Marketing Assistant

- Analysed rival programs and promotion tactics in the mainland market to better understand the market
- Associated with others to publish engaging original articles and video clips on social platforms

SPECIAL Talks Team, Student Residence Sep 2021-Feb 2022

- Moderated meetings to better connect guests and audiences online.

SKILLS

Language: English, Mandarin (Native)
Programming Language: C++, Python, SQL, Latex, HTML, CSS, Javascript, R, Matlab, SPSS
Packages: Pytorch, TensorFlow
Databases: Hadoop, Spark, Apache Pig, Apache Hive
Software & Tools: Excel, Tableau, Weight&Bias
Operating Systems: Windows, Linux