Shengjie Ma

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EDUCATION

PEKING UNIVERSITY Beijing, China 09/2019–present
School of Electronics Engineering and Computer Science
- Major in Computer Science and Technology, GPA: **3.775**/ 4, Ranking: **24**/200
- Programming & Software: Python, C/C++, Java, HTML/CSS/JavaScript, Latex, Git
- English Proficiency: TOEFL 109, GRE 331

Main Course and Score

Introduction to Database Systems (Honor Track)	96	Operating Systems (Honor Track)	91
Algorithm Design and Analysis	94.5	Game Theory	97
Practice of Programming in C&C++	95	Web Data Mining	92
Learning Data Science with Python	99	Computer Networking	91
Java Programming	98	Computer Architectures	90

Awards and Honors

China Merchants Securities Scholarship	09/2022
Shenzhen Stock Exchange Scholarship	09/2021
1st Prize in National Olympiad in Informatics in Provinces	11/2017

PUBLICATIONS & MANUSCRIPTS

- **Shengjie Ma**, Weishuai Wang, Yuxin Peng, Yang Liu: Semantic-guided Novel Category Discovery. Submitted to the *2023 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. Under review.

RESEARCH EXPERIENCE

Research on Semantic-guided Novel Category Discovery 05/2022-11/2022
Independent Research, Supervised by Assistant Prof. Yang Liu, Wangxuan Institute of Computer Technology, Peking University
- Proposed a new setting of Semantic-guided Novel Category Discovery which extended Novel Category Discovery by introducing semantic labels for categories of interest to enable recognition of unseen categories
- Built a cross-modal dynamic memory bank to perform a zero-shot recognition task, in addition to the clustering task
- Designed a mutual information knowledge transfer mechanism allowing the two tasks to benefit each other

Research on Unsupervised Open Domain Recognition 08/2021-04/2022
Independent Research, Supervised by Assistant Prof. Yang Liu, Wangxuan Institute of Computer Technology, Peking University
- Designed a structure regularization for visual prototypes to preserve semantic relationships among classes
- Adopted progressive pseudo-labeling to bridge the domain gap and alleviate negative transfer

Studying Similarity Graph Fusion 03/2021-06/2021
Course Research Project, Supervised by Prof. Haiyan Zhao, Software Engineering Institute, Peking University
- Mastered the paradigm of similarity graph fusion and similarity-based clustering by reading relevant papers
- Implemented 3 different graph fusion approaches with Python and PyTorch
- Applied graph fusion algorithms to cluster cancer patients into subtypes combining DNA, mRNA, and microRNA data

SELECTED COURSE PROJECT

Question Answering on Chinese Riddles
- Built a model for riddle question answering based on ERNIE, a BERT-like model pretrained on Chinese corpora
- Fine-tuned word embeddings by BiLSTM with Attention to better represent n-gram entities

PKU YouMing BBS
- Built and deployed a bulletin board website where users log in to open threads and post comments
- Implemented the frontend with HTML/CSS/JavaScript, backend with Python flask and MySQL

PintOS
- Implemented priority scheduling, system calls, and virtual memory for an instructional operating system

EXTRACURRICULAR ACTIVITIES

Member of Student Union in the School of Electronics Engineering and Computer Science	09/2019- 07/2020