Yuzhou Nie

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Education

Renmin University of China(RUC), Beijing, China   **Sept.2019–June.2023(Expected)**

Bachelor of Science, School of Statistics, Major in Data Science and Big Data Technology

- **GPA:** Major GPA 3.92/4.00(Ranking: 2/52), Cumulative GPA 3.80/4.00(Ranking: 6/52)
- **Selected Courses:**
    - **Computer Science courses**: C&C++ Programming, Data Structure and Algorithm, Machine Learning, Deep Learning, Parallel Computing
    - **Math and Statistics courses**: Mathematical Analysis, Advanced Algebra, Probability, Mathematical Statistics, Optimization, Time Series Analysis, Stochastic Process

Publications

* indicates equal contribution

- **Yuzhou Nie***, Fengjiao Gong* and Hongteng Xu, *Gromov-Wasserstein Multi-modal Alignment and Clustering*, accepted by The Conference on Information and Knowledge Management (CIKM) 2022.
- **Yuzhou Nie***, Chengyue Huang*, Hailun Liang and Hongteng Xu, *Adversarial and Implicit Modality Imputation with Applications to Depression Early Detection*, accepted by CAAI International Conference on Artificial Intelligence (CICAI) 2022.

Working Experience

Amazon Web Services AI Lab, Shanghai, China   **Aug.2022–Present**

Internship, advised by senior applied scientist Da Zheng, AWS Deep Learning group, United States

- **Graphical Structure for Electronic Health Records (In preparation)**
    - Many features in EHR datasets are strongly related with domain knowledge, can we make better use of EHR data by treating it as a graphical structure with specific prior knowledge than as a flat-structured bag-of-features?

Research Experience

Structured Data Science Lab, Beijing, China   **May.2021–June.2022**

Member, advised by Associate Professor Hongteng Xu, Gaoling School of Artificial Intelligence, RUC

- **Optimal Transport for Multi-View Alignments (Published)**   **Feb.2022–June.2022**
    - Developed a novel multi-modal clustering method Gromov-Wasserstein Multi-modal Alignment and Clustering (**GWMAC**) based on the Gromovization of optimal transport distance, which proved to be applicable to totally-unaligned multi-modal data.
    - Provided the theoretical and numerical guarantees that our method featured a significantly lower computational complexity in complicated multi-modal learning scenarios.
    - Showed an increased accuracy and normalized mutual information jointly compared to SOTA via numerical experiments on various dataset.
- **Adversarial Multi-view Imputation for Disease Prediction (Published)**   **June.2021–Jan.2022**
    - Resolved the modality-missing issue by proposing a novel and robust multi-modal data imputation approach called Adversarial Modality Implicit Imputation (**AMII**), which introduce an implicit imputation mechanism to generate the missing modalities in the learning of multi-modal predictive models.
    - Demonstrated the effectiveness and superiority of our method on the early detection of depression based on the UK Biobank dataset.

Selected Projects

- **Spatial and Temporary Domain Adaptation for Clinical Data (In preparation)**   **Oct.2022–Present**
    Internship, working with Zhenbang Wu, UIUC; Postdoctoral Scholar Huaxiu Yao, Stanford
    - Working on solving domain adaptation problems for time-series data in both spatial and temporary domains.

- **Satellite Imagery Object Detection Project, Beijing, China** **Nov.2020–Mar.2021**
  - Tested baselines including DeepLab and Faster R-CNN on adjusted Dataset Sen1Floods11
  - Gave an oral presentation reviewing the principles of convolutional neural network and its applications for computer vision
- **Individual Projects Implemented by C++**
  - Developed a tower defence game with QT. (`https://github.com/rucnyz/TowerDefense`)
  - Developed a five steps Chess game using min-max algorithm (`https://github.com/rucnyz/FIR`)

Skills

Proficient: Python (PyTorch,Scikit-learn,etc.), C/C++, Java, SQL, Git/Terminal, LaTeX, R
Familiar: MATLAB, PySpark, Linux/Unix

Awards

College Scholarship (Top 8%)	2019-2020&2020-2021
National Second Prize in China Undergraduate Mathematical Contest in Modeling (Top 4%)	2020
Meritorious Winner in Mathematical Contest In Modeling (Top 7%)	2021