Chengyue Huang

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Education

Georgia Institute of Technology — Atlanta, USA
Ph.D. in Machine Learning, advised by Prof. ***Zsolt Kira*** — *08/2023 - Present*

Renmin University of China — Beijing, China
Bachelor of Science, School of Statistics, Major in Applied Statistics — *09/2019 - 06/2023*

- **GPA:** 3.82/4.00 **WES GPA:** 3.94/4.00 **Rank:** Top 8% in 121
- **Coursework:** 1) Math and Statistics: Mathematical Analysis, Advanced Algebra, Probability, Mathematical Statistics, Regression Analysis, Time Series Analysis, Stochastic Process, Convex Optimization; 2) Computer Science: C&C++ Programming, Data Structure and Algorithm, Machine Learning, Data Science Practice, Database System
- **Honors and Awards:** Second Prize Scholarship (2019 - 2022), Merit Student (2020 - 2022), First Prize in Chinese Mathematics Competitions (2020), First Prize (Beijing Region) in China Undergraduate Mathematical Contest in Modeling (2021), Honorable Mention in Mathematical Contest In Modeling (2022)

Publications

** indicates equal contribution*

- **C. Huang***, Y. Nie*, H. Liang, and H. Xu. Adversarial and implicit modality imputation with applications to depression early detection. In *Artificial Intelligence: Second CAAI International Conference, CICAI 2022, Beijing, China, August 27–28, 2022, Revised Selected Papers, Part II*, page 230–241, Berlin, Heidelberg, 2023. Springer-Verlag.[Paper]
- N. T. Huang, S. Villar, C. Priebe, D. Zheng, **C. Huang**, L. Yang, and V. Braverman. From local to global: Spectral-inspired graph neural networks. In *NeurIPS 2022 Workshop: New Frontiers in Graph Learning*, 2022.[Paper]

Internships & Research Experience

Virus Discovery via Large Language Models — Microsoft Research AI4Science
Research Intern, Mentor: Doctor ***Chuan Cao*** — *02/2023 - 07/2023*

- **Description:** virus sequence prediction, classification and annotation using Large Language Models.
- **My role:** developed a hierarchical multi-label network for the virus classification task, utilizing a pairwise masked language model to analyze protein & DNA sequences and taxonomy information; mastered various skills related to large model training, parameter tuning, and efficient use of computing resources.

From Local to Global: Spectral-Inspired Graph Neural Networks — AMS, JHU (Remote)
Research Assistant, advised by Prof. ***Carey Priebe*** *and Ph.D. student Teresa Huang* — *06/2022 - 09/2022*

- **Description:** mitigated over-smoothing and over-squashing issues in deep Graph Neural Networks by proposing a normalization technique in message-passing algorithms to encode global spectra information.
- **My role:** performed comprehensive studies on real-world graph benchmark datasets and simulated random graphs, with respect to different methods, graph topology, graph density, and the number of layers of the methods.

Study on GNN Models for Multi-modal Social Network Data — STAT, RUC
Member, advised by Prof. ***Xiaoling Lu*** — *02/2022 - 04/2023*

- **Description:** proposed a self-supervised learning-based multi-modal recommendation system to capture user's fine-grained preferences on different modalities and cross-modality interaction dependency.
- **My role:** proposed the model and conducted extensive experiments on four benchmark public datasets with baseline comparisons and visualization to verify the superiority and robustness of our method.

Adversarial Multi-modal Imputation for Disease Prediction — GSAI & SPAP, RUC
Member, advised by Prof. ***Hongteng Xu*** *and Prof.* ***Hailun Liang*** — *06/2021 - 05/2022*

- **Description:** resolved the modality-missing issue by proposing an implicit imputation method with multi-modal representation learning via auto-encoding and adversarial networks, and applied it to depression early detection task.
- **My role:** proposed the model and investigated the competitiveness and stability of it by comparing it with various typical multi-modal data imputation baselines under different missing rates.

Interests, Skills, and Community Involvement

- **Conference:** Attended the 2022 CAAI International Conference on Artificial Intelligence and presented our poster.
- **Volunteering:** Remote volunteer math teacher of 7th graders in Yuji Middle School, Liaocheng, Shandong, China.
- **Sports:** School Female Volleyball Team, main player; College 10km Challenge, 56min13s (women top 70)
- **Music:** Performed street music as the vocal of *Fishes in Carnegie*.
- **Programming Skills:** Python (PyTorch, Scikit-learn, etc.), C/C++, SQL, LaTeX, R
- **Language:** TOEFL 105 (R29+L26+S24+W26); GRE V152+Q170+AW3.5