YI ZHANG

Minneapolis, MN, 55414 ⋄ (612) · 286 · 5318 ⋄ Email: yi.zhang@vanderbilt.edu ⋄ Website: yizhan2854.github.io

EDUCATION

Vanderbilt University
PhD in Computer Science   **Starting Aug. 2022**
Supervisor: Dr. Tyler Derr [Profile Link]
Research Group: Network and Data Science (NDS) [Group Link]
Research Interest: Artificial Intelligence | Graph Neural Networks | NLP | Recommender Systems
Awards: Russell G. Hamilton Scholar | Engineering Graduate Fellowship | Dean's Graduate Fellowship

University of Minnesota, Twin Cities (UMTC)
Bachelor in Computer Science   **May 2022 (Conferred)**
Awards: Maroon Global Excellence Scholarship | Distinction
CS Major GPA: 3.97/4
CS Major Courses: Calculus | Linear Algebra and Differential Equations | Multi-Variable Calculus | Applied Linear Algebra | Analysis of Numerical Algorithms | Sparse Matrix Computations | Probability and Statistics | Machine Learning | Computational Genomics | C/C++ | Intro to Algorithms and Program Development | Discrete Structures | Machine Architecture and Organization | Algorithm and Data Structure | User Interface Design | Operating Systems | Program Design and Development | Advanced Programming Principles | CS Research | Directed Math Research | Directed CS Research

PUBLICATIONS AND PAPERS

1. **Zhang, Y.**, Boley, D., Harwell, J., & Gini, M. (2022) A Correlated Random Walk Model to Rapidly Approximate Hitting Time Distributions in Multi-Robot Systems. *17th International Conference on Intelligent Autonomous Systems*

2. **Zhang, Y.**, & Boley, D. (Under Revision). Nonlinear Multi-Objective Flux Balance Analysis of the Warburg Effect. *arXiv*. https://arxiv.org/abs/2111.12145

3. **Zhang, Y.** (2021). An In-depth Summary of Recent Artificial Intelligence Applications in Drug Design. *arXiv*. https://arxiv.org/abs/2110.05478v1

RESEARCH EXPERIENCE

Department of Mathematics, UMTC   May 2021 – Jan. 2022
Supervisor: Dr. Jeff Calder
Keywords: Semi-Supervised Learning, Graph Neural Networks, Stochastic Processes, Network, Active Learning

- Proposed Poisson Learning with Discounted Return (DR-PoiLea) that consistently outperformed the current state of art, vanilla PoiLea, by 1-2% classification accuracy using 3 common datasets (FashionMNIST, MNIST, PUBMED).

Department of Computer Science and Engineering, UMTC   Apr. 2021 – Feb. 2022
Supervisors: Dr. Daniel Boley, Dr. Maria Gini
Keywords: Swarm Robot, Stochastic Processes, Network, Sparse Matrix

- Developed a computation model that can efficiently approximate the HT distributions for multi-robot searching processes.

Department of Computer Science and Engineering, UMTC   Nov. 2020 – June 2021
Supervisor: Dr. Daniel Boley
Keywords: Biological Modeling, Nonlinear Programming, Multi-Objective Optimization

- Developed a multi-objective non-linear flux balance analysis model of a significant biological phenomenon, Warburg Effect, in different cell types.