Pingbang Hu

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EDUCATION

University of Michigan – College of Literature, Science, and the Arts Ann Arbor, Michigan
Bachelor of Computer Science; Majored GPA – 4.0/4.0 Aug. 2021 - May. 2023

University of Michigan – College of Literature, Science, and the Arts Ann Arbor, Michigan
Bachelor of Honor Math (Honor Program); GPA – 3.751/4.0 Aug. 2021 - May. 2023

Shanghai Jiao Tong University – UM-SJTU Joint Institute Shanghai, China
Bachelor of Electrical and Computer Engineering; GPA – 3.6/4.0 Aug. 2019 - May. 2023

RESEARCH EXPERIENCE

Deep Learning Foundation CoE, UMich, Ann Arbor, Michigan
Undergraduate Researcher Mar. 2022 - Present
- **General**: Fundamental Understanding of Deep Neural Network with Theoretical Analysis supported by SURE Program.
- **Intrinsic Dimension**: Characterizing the effect of dimensionality and the hardness of estimation which.

Graph Neural Network Theory SI, UMich, Ann Arbor, Michigan
Undergraduate Researcher Feb. 2022 - Present
- **General**: Theoretical analysis on generalization ability of non-i.i.d. semi-supervised node-level tasks.
- **Success of GNN**: Toward understanding the success of GNN and pitfalls of using GCN (graph convolution network).

Fast Graph Algorithm CoE, UMich, Ann Arbor, Michigan
Undergraduate Researcher Mar. 2022 - Present
- **General**: Analysis on the size of the network failure detection set on different graph and various constraints.
- **Data Structure**: Understanding the compact min-cuts representation and their implication.
- **Finding Balanced Separator**: Improve the 15 years barrier of finding small balanced separator in almost linear time.

Travel the Same Path: A Novel Approach CoE, UMich, Ann Arbor, Michigan
Undergraduate Researcher Jan. 2022 - Apr. 2022
- **General**: Using imitation learning to speed up deterministic algorithm while maintaining the exactness of the solution.
- **Derandomization**: Demonstrate a potential next step of using AI to solve combinatorial optimization.

TEACHING EXPERIENCE

EECS572 Randomness and Computation CoE, UMich, Ann Arbor, Michigan
Instructional Aide Aug. 2022 - Dec. 2022
- **General**: Collaborated with the teaching staff as an instructional aide of an 80+ student course on the theory CS track.
- **Discussion Course**: Taught discussion sections to reinforce conceptual understanding and review course material.
- **Office Hours**: Offered weekly office hours to ensure the student experience was as smooth as possible.

VV285 Honor Mathematics III UM-SJTU JI, SJTU, Shanghai, China
Instructional Aide Mar. 2021 – Aug. 2021
- **General**: Collaborated with the teaching staff as an instructional aide of a 150+ student course on the main ECE track.
- **Discussion Course**: Taught discussion sections to reinforce conceptual understanding and review course material.
- **Office Hours**: Offered weekly office hours to ensure the student experience was as smooth as possible.
- **Competition**: Hold the 1st UM-SJTU JIntegration Bee competition

VV186 Honor Mathematics II UM-SJTU JI, SJTU, Shanghai, China
Instructional Aide Sep. 2020 – Dec. 2020
- **General**: Collaborated with the teaching staff as an instructional aide of a 200+ student course on the main ECE track.
- **Discussion Course**: Taught discussion sections to reinforce conceptual understanding and review course material.
- **Office Hours**: Offered weekly office hours to ensure the student experience was as smooth as possible.

HONORS AND AWARDS

Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship SJTU, Shanghai, China
First Price (Ranked 2) among all HK, MC and TW students in SJTU Oct. 2021

Undergraduate Excellent Scholarship SJTU, Shanghai, China
Third Price among all students in UM-SJTU JI Nov. 2020

Bao Gang Excellent Scholarship SJTU, Shanghai, China
Ranked 3 among all Taiwan students in SJTU Jun. 2020

Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship SJTU, Shanghai, China
Ranked 1 among all HK, MC and TW students in UM-SJTU JI Dec. 2019