Pingbang Hu

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Research Interest

Machine Learning
- *Algorithmic fairness, graph learning, trustworthy machine learning, statistical learning theory*

Theoretical Computer Science
- *Fast graph algorithm, approximation algorithm, computational complexity, hardness of approximation*

Education

University of Illinois Urbana-Champaign — **Illinois**
- *Ph.D. Student in Information Science, School of Information Science* — *Aug. 2023 – Present*
  - ○ **Advisor**: Jiaqi Ma ❂

University of Michigan — **Michigan**
- *B.Sc. in Computer Science, College of Engineering* — *Aug. 2021 – May 2023*
  - ○ Graduate with **Summa Cum Laude**
  - ○ **Minor**: Mathematics, College of Literature, Science, and the Arts

National Yang Ming Chiao Tung University — **Hsinchu, Taiwan**
- *Visiting Scholar* — *Jan. 2020 – Jul. 2020*

Shanghai Jiao Tong University — **Shanghai, China**
- *B.Eng. in Electrical and Computer Engineering, UM-SJTU Joint Institute* — *Aug. 2019 – Aug. 2023*
  - ○ **Minor**: Computer Science, UM-SJTU Joint Institute

Research and Industry Experience

Theory of Computation Laboratory ❂ , University of Michigan — **Michigan**
- *Undergraduate Researcher* — *Mar. 2022 – Present*
  - ○ **Advisor**: Thatchaphol Saranurak ❂
  - ○ Design the first almost linear time algorithm on finding minimal balanced separator.

SURE Program ❂ , University of Michigan — **Michigan**
- *Undergraduate Researcher* — *May 2022 – Apr. 2023*
  - ○ **Advisor**: Wei Hu ❂
  - ○ Theoretical analysis on intrinsic dimension under isoperimetry assumptions.

FORESEER Research Group ❂ , University of Michigan — **Michigan**
- *Undergraduate Research Assistant* — *Dec. 2021 – Jan. 2023*
  - ○ **Advisor**: Jiaqi Ma ❂
  - ○ Prove the asymptotic separability of a 1-layer GCN on node classification tasks.

Chief Noob — **Shanghai, China**
- *Backend Developer* — *Oct. 2020 – Jun. 2021*

Pre-prints and Technical Reports   (* denotes equal contribution)

[P1] **Pingbang Hu**, Thatchaphol Saranurak, "Finding Minimal Balanced Separators with Detection Sets". *Manuscript*

[P2] **Pingbang Hu**, "Travel the Same Path: A Novel TSP Solving Strategy". *Preprint* ❂

Teaching Experience

Instructional Aide, University of Michigan — **Michigan**
- *Hold discussion and office hour weekly, design assignment and exam problems, grade and guide projects.*
  - ○ **Introduction to Cryptography ❂** : An upper-level course on the main undergraduate CS track. — *Winter 2023*
  - ○ **Randomness and Computation ❂** : A graduate-level course on the M.S. CS theory track. — *Fall 2022*

Teaching Assistant, Shanghai Jiao Tong University — **Shanghai, China**
- *Hold discussion and office hour weekly, design and grade assignments and exams.*
  - ○ **Honor Mathematics III ❂** : An undergraduate-level course on the main B.Eng. ECE track. — *Summer 2021*
    - ∗ **Competition**: Hold the 1st UM-SJTU JIntegration Bee competition ❂ .
  - ○ **Honor Mathematics II ❂** : An undergraduate-level course on the main B.Eng. ECE track. — *Fall 2020*

Honors and Awards

Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship   **Shanghai, China**
- *First Prize (Ranked #2) among all HK, MC and TW students in* Shanghai Jiao Tong University   *Oct. 2021*

Undergraduate Excellent Scholarship   **Shanghai, China**
- *Third Prize among all students in* UM-SJTU Joint Institute   *Nov. 2020*

Bao Gang Excellent Scholarship   **Shanghai, China**
- *Second Prize (Ranked #3) among all Taiwan students in* Shanghai Jiao Tong University   *Jun. 2020*

Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship   **Shanghai, China**
- *First Prize (Ranked #1) among all HK, MC and TW students in* UM-SJTU Joint Institute   *Dec. 2019*

Professional Activities

IEEE International Conference on Big Data (IEEE BigData)
- *Conference Reviewer*   *2023*