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 1^{st} 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*