Pingbang Hu

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EDUCATION

- **University of Michigan – College of Engineering** — Michigan, U.S.A.
  Bachelor of Computer Science; Majored GPA – 4.0/4.0 — *Aug. 2021 - May. 2023*
- **University of Michigan – College of Literature, Science, and the Arts** — Michigan, U.S.A.
  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

- **Network Failure Detection** — CoE, UMich, Michigan, U.S.A.
  Undergraduate Researcher — *Mar. 2022 - Present*
  - **General**: Understanding the compact cuts representation and their implication on network failure detection.
  - **Balanced Separator**: An improved algorithm on finding small balanced separator in almost linear time.
- **A Universal Law of Separability via GCN** — SI, UMich, Michigan, U.S.A.
  Undergraduate Researcher — *Feb. 2022 - Present*
  - **General**: Theoretical analysis on linear separability ability of non-i.i.d. semi-supervised node-level tasks.
  - **The Success GNN**: Toward understanding the success of GNN with general data assumption.
- **Deep Learning Foundation** — CoE, UMich, Michigan, U.S.A.
  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.
- **Travel the Same Path: A Novel Approach** — CoE, UMich, Michigan, U.S.A.
  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

- **EECS475 Introduction to Cryptography** — CoE, UMich, Michigan, U.S.A.
  Instructional Aide — *Jan. 2023 - May. 2023*
  - **General**: Collaborated with the teaching staff as an instructional aide of an 70+ student course on the theory CS track.
  - **Discussion & Office Hour**: Hold discussion sections and weekly OH to reinforce conceptual understanding and review course material.
- **EECS572 Randomness and Computation** — CoE, UMich, Michigan, U.S.A.
  Instructional Aide — *Aug. 2022 - Dec. 2022*
  - **General**: Collaborated with the teaching staff as an instructional aide of an 70+ student course on the theory CS track.
  - **Discussion & Office Hour**: Hold discussion sections and weekly OH to reinforce conceptual understanding and review course material.
- **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 & Office Hour**: Hold discussion sections and weekly office hours to reinforce conceptual understanding and review course material.
  - **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 & Office Hour**: Hold discussion sections and weekly office hour to reinforce conceptual understanding and review course material.

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*