Pingbang Hu

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EDUCATION

University of Illinois Urbana-Champaign — School of Information Science, Illinois
Ph.D. Student in Information Science — Aug. 2023 - Present
- **Advisor**: Jiaqi Ma
- **Research Area**: AI Theory on Graphs & Theoretical Computer Science

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

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

SELECTED RESEARCH EXPERIENCE

Network Failure Detection — College of Engineering, Michigan
Undergraduate Researcher — Mar. 2022 - Sep. 2022
- **General**: An improved algorithm on finding small balanced separator in almost linear time.

Deep Learning Foundation — College of Engineering, Michigan
Undergraduate Researcher — Mar. 2022 - Jan. 2023
- **General**: Theoretical analysis on intrinsic dimension under isoperimetry assumptions, supported by SURE Program.

TEACHING EXPERIENCE

EECS475 Introduction to Cryptography — College of Engineering, Michigan
Instructional Aide — Jan. 2023 - May. 2023
- **General**: Hold discussion & office hour weekly for an upper-level 100+ student course on the main CS track.
- **Topics**: Focuses on historic ciphers, symmetric encryption (pseudo-random generators, stream ciphers, pseudo-random functions/permutations), message authentication, cryptographic hash functions, and public key encryption.

EECS572 Randomness and Computation — College of Engineering, Michigan
Instructional Aide — Aug. 2022 - Dec. 2022
- **General**: Hold discussion & office hour weekly for a graduate-level 70+ student course on the M.S. theory CS track.
- **Topics**: Focuses on randomized algorithm and complexity, pseudo-random generator, applications in cryptography.

VV285 Honor Mathematics III — UM-SJTU Joint Institute, Shanghai, China
Instructional Aide — Mar. 2021 – Aug. 2021
- **General**: Hold discussion & office hour weekly for a 150+ student rigorous analysis course on the main B.S. ECE track.
- **Topics**: Focuses on linear algebra theory, topology, potentials and vector fields, higher derivatives, Riemann integral in $\mathbb{R}^n$, integration on curves and surfaces, Green, Stokes and Gauß theorem.
- **Competition**: Hold the 1st UM-SJTU JIntegration Bee competition.

VV186 Honor Mathematics II — UM-SJTU Joint Institute, Shanghai, China
Instructional Aide — Sep. 2020 – Dec. 2020
- **General**: Hold discussion & office hour weekly for a 200+ student rigorous analysis course on the main B.S. ECE track.
- **Topics**: Focuses on one-variable real analysis, e.g., set theory, construction of $\mathbb{R}$, ϵ-δ definitions, uniform continuity, etc.

SELECTED 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