

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.
Math Minor; Real/Complex/Stochastic Analysis, Optimization Theory, Algebraic Topology, etc. 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 toward understanding the success of non-i.i.d. semi-supervised node-level tasks.
 - Separability:** Identify the separating condition of a 1-layer GCN on worst case real-world data the very first time.
- 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.
 - Manifold Hypothesis:** Characterizing the interplay between intrinsic dimension and the isoperimetry assumptions.
- Travel the Same Path: A Novel Approach** CoE, UMich, Michigan, U.S.A.
Independent Researcher Jan. 2022 - Apr. 2022
 - General:** Using imitation learning to speed up deterministic algorithm while maintaining the exactness of the solution.
 - Derandomized:** Demonstrate a potential next step of using AI to solve combinatorial optimization without approximation.

TEACHING EXPERIENCE

- EECS475 Introduction to Cryptography** CoE, UMich, Michigan, U.S.A.
Instructional Aide Jan. 2023 - May. 2023
 - General:** Hold discussion & office hour weekly for an upper-level 70+ 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** CoE, UMich, Michigan, U.S.A.
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 JI, SJTU, 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 JI, SJTU, 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.

HONORS AND AWARDS

- Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship** SJTU, Shanghai, China
First Prize (Ranked 2) among all HK, MC and TW students in SJTU Oct. 2021
- Undergraduate Excellent Scholarship** SJTU, Shanghai, China
Third Prize among all students in UM-SJTU JI Nov. 2020
- Bao Gang Excellent Scholarship** SJTU, Shanghai, China
Second Prize (Ranked 3) among all Taiwan students in SJTU Jun. 2020
- Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship** SJTU, Shanghai, China
First Prize (Ranked 1) among all HK, MC and TW students in UM-SJTU JI Dec. 2019