WEN-HORNG SHEU

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Research Experience

Graduate Research Assistant 2023 - Present
University of California, Davis *Davis, CA*

- Research area: distributed algorithms, streaming algorithms.
- Studied the maximum matching problem in distributed and streaming settings.

Research Assistant 2021 - 2023
National Tsing Hua University *Hsinchu, Taiwan*

- Research area: parameterized algorithms, computational biology.
- Proposed new algorithms for problems that have applications in cancer genomics and phylogenetic analysis.
- Created problems for the International Collegiate Programming Contest (ICPC).

Publications

Following the convention in theoretical computer science, author names are ordered alphabetically (unless stated otherwise).

1. **A Framework for Boosting Matching Approximation: Parallel, Distributed, and Dynamic**
   with Slobodan Mitrović
   SPAA 2025 (ACM Symposium on Parallelism in Algorithms and Architectures)

2. **Faster MPC Algorithms for Approximate Allocation and Matching in Uniformly Sparse Graphs**
   with Jakub Łącki, Slobodan Mitrović, and Srikkanth Ramachandran
   SPAA 2025 (ACM Symposium on Parallelism in Algorithms and Architectures)

3. **Faster Semi-streaming Matchings via Alternating Trees**
   with Slobodan Mitrović, Anish Mukherjee, Piotr Sankowski
   ICALP 2025 (EATCS International Colloquium on Automata, Languages, and Programming)

4. **Kernelization and Approximation Algorithms for Finding a Perfect Phylogeny from Mixed Tumor Samples**
   Wen-Horng Sheu and Biing-Feng Wang (contribution order)
   TCBB (IEEE Transactions on Computational Biology and Bioinformatics), in press

5. **New Algorithms for Constructing Frequency Difference Consensus Trees**
   Biing-Feng Wang, Chih-Yu Li, and Wen-Horng Sheu (contribution order)
   TCBB (IEEE Transactions on Computational Biology and Bioinformatics), in press

6. **Parameterized Complexity for Finding a Perfect Phylogeny from Mixed Tumor Samples**
   Wen-Horng Sheu and Biing-Feng Wang (contribution order)
   SIDMA 2023 (SIAM Journal on Discrete Mathematics)

Education

PhD in Computer Science at the University of California, Davis *2023-Present*
GPA: 4.0/4.0

Master of Computer Science at National Tsing Hua University *2019-2021*
GPA: 3.9/4.0

Bachelor of Computer Science at National Tsing Hua University *2015-2019*
GPA: 3.85/4.0

Professional Activities

External Reviewer for conferences and journals
- Conferences: SOSA 2025, SODA 2025, ICALP 2025.
- Journal: Distributed Computing (2025).

Teaching Assistant at University of California, Davis
- Algorithm Design and Analysis (Winter 2025 and Summer Session I 2024)
- Special Topics in Theoretical Computer Science (Winter 2024)

Teaching Assistant at National Tsing Hua University
- Computational Geometry (Spring 2022 and Spring 2020)
- Parallel Algorithm Design (Spring 2022 and Fall 2019)
- Design and Analysis of Algorithms (Fall 2021, Fall 2020, and Fall 2019)

Honors and Awards

- **Contributed Talk** at *Workshop on Local Algorithms, 2024*
  hosted by Simons Institute for the Theory of Computing, UC Berkeley
  - Presented our recent result, an improved streaming algorithm for $(1+\epsilon)$-approximate maximum matching.
- **Gold Award** in *the 2019 ICPC Asia Pacific Taipei-Hsinchu Regional Contest*
  - Attended several programming contests, including ICPC, with other students in undergraduate years.
  - Built strong abilities in teamwork and problem-solving.
- **Grandmaster on Codeforces**
  - Ranked as a grandmaster, within top 1% globally on the online competitive programming platform Codeforces (as of Feb 2021).
  - Placed top 1% (out of 10,000+ contestants globally) in four online programming contests on Codeforces.
- **Google Code Jam 2021 Round 3 Qualifier**
  - Competed in the programming contest Google Code Jam 2021.
  - Placed 255-th in Round 3, within top 1% of all 37,000+ participants of the qualification rounds.
- **Second Place Award** in *the ACM TAU 2018 Contest on Path Reporting*
  - Undergraduate research project: created a tool to perform timing analysis on input circuits.

Skills

Coding Languages	C, C++, Python
Tools	Git, LaTeX, Microsoft Office
Languages	English (fluent), Chinese (native)