

# Ta-Wei Tu 塗大為

<https://taweitu.github.io> taweitu@stanford.edu

## Education

---

### Stanford University

Ph.D. in Computer Science. Advisor: Aaron Sidford.

Sept. 2023 – Present  
Stanford, CA, USA

### National Taiwan University

B.Sc. in Computer Science and Information Engineering

Sept. 2018 – June 2022  
Taipei, Taiwan

## Publications

---

In all my publications, as standard in theoretical computer science, author names are ordered alphabetically.

- [1] Joakim Blikstad and Ta-Wei Tu. Efficient matroid intersection via a batch-update auction algorithm. In *2025 Symposium on Simplicity in Algorithms, SOSA 2025*. SIAM, 2025, arXiv:2410.14901.
- [2] Aaron Bernstein, Jiale Chen, Aditi Dudeja, Zachary Langley, Aaron Sidford, and Ta-Wei Tu. Matching composition and efficient weight reduction in dynamic matching. In *Proceedings of the 2025 ACM-SIAM Symposium on Discrete Algorithms, SODA 2025*. SIAM, 2025, arXiv:2410.18936.
- [3] Jiale Chen, Aaron Sidford, and Ta-Wei Tu. Entropy regularization and faster decremental matching in general graphs. In *Proceedings of the 2025 ACM-SIAM Symposium on Discrete Algorithms, SODA 2025*. SIAM, 2025, arXiv:2312.09077.
- [4] Aaron Bernstein, Joakim Blikstad, Thatchaphol Saranurak, and Ta-Wei Tu. Maximum flow by augmenting paths in  $n^{2+o(1)}$  time. In *65th IEEE Annual Symposium on Foundations of Computer Science, FOCS 2024*. IEEE, 2024, arXiv:2406.03648. **Invited to SICOMP Special Issue.**
- [5] Joakim Blikstad, Sagnik Mukhopadhyay, Danupon Nanongkai, and Ta-Wei Tu. Fast algorithms via dynamic-oracle matroids. In *Proceedings of the 55th Annual ACM Symposium on Theory of Computing, STOC 2023*, pages 1229–1242. ACM, 2023, arXiv:2302.09796.
- [6] Ta-Wei Tu. Subquadratic weighted matroid intersection under rank oracles. In *33rd International Symposium on Algorithms and Computation, ISAAC 2022*, volume 248 of *LIPIcs*, pages 63:1–63:14. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022, arXiv:2212.00508.

## Research and Professional Experience

---

### Research Intern, Max Planck Institute for Informatics

- Studied matroid intersection algorithms and graph algorithms. Advisor: Danupon Nanongkai.

Aug. 2022 – Dec. 2022

### Software Engineering Intern, Google Taipei

- Worked on gRPC core transport based on Android binders.

June 2021 – Sept. 2021

### Research Assistant, National Taiwan University

- Studied algorithm design. Advisor: Hsueh-I Lu.

Feb. 2021 – June 2022

### Research Assistant, National Taiwan University

- Studied RISC-V vector extension. Advisor: Wei-Chung Hsu.

Sept. 2020 – Jan. 2021

## Academic Talks

---

### Maximum Flow by Augmenting Paths in $n^{2+o(1)}$ Time

- FOCS 2024, Chicago, IL
- Academia Sinica, Taiwan

### Fast Algorithms via Dynamic-Oracle Matroids

- STOC 2023, Orlando, FL

### Subquadratic Weighted Matroid Intersection under Rank Oracles

- ISAAC 2023, Virtual

*Selected Awards & Honors*

---

<b>Mr. K. K. Lee Engineering Graduate Fellowship</b> , Stanford University	2023
<b>18th Place</b> , ICPC World Finals	2020
<b>Champion</b> , ICPC Asia-Pacific Regional Contest, Taipei Site	2018, 2020
<b>Champion</b> , National Collegiate Programming Contest of Taiwan	2018, 2019, 2020

*Services*

---

Subreviewer for SOFSEM 2025, SODA 2025, ISAAC 2024, ESA 2024, ICALP 2024, STOC 2024, ESA 2023, ICALP 2023