

# Tianyun Tang

National University of Singapore  
Department of Mathematics  
ttang@u.nus.edu

## Education

---

**Ph.D. in Mathematics | Advisor: Prof Kim-Chuan Toh** 2020-present  
National University of Singapore, Singapore

**Bachelor of Science in Mathematics** 2016-2020  
University of Science and Technology of China, Hefei, China

## Research interests

---

- Large scale matrix optimization.
- Riemannian optimization.
- Combinatorics and graph theory.

## Publication

---

- **Monochromatic subgraphs in iterated triangulations**  
(with Jie Ma and Xingxing Yu) Electronic Journal of Combinatorics 27(4) (2020), P4.18.
- **Minimizing cycles in tournaments and normalized q-norms**  
(with Jie Ma) Combinatorial Theory 2(3) (2022), #6.
- **A feasible method for solving an SDP relaxation of the quadratic knapsack problem**  
(with Kim-Chuan Toh) Mathematics of Operations Research, 49(1), 19-39.
- **Solving graph equipartition SDPs on an algebraic variety**  
(with Kim-Chuan Toh) Mathematical Programming, 204(1), 299-347.
- **Self-adaptive ADMM for semi-strongly convex problems**  
(with Kim-Chuan Toh) Mathematical Programming Computation, 16(1), 113-150.
- **A Riemannian dimension-reduced second order method with application to sensor network localization**  
(with Kim-Chuan Toh, Nachuan Xiao and Yinyu Ye) SIAM Journal on Scientific Computing, 46(3), A2025-A2046.
- **A feasible method for general convex low-rank SDP problems**  
(with Kim-Chuan Toh), arXiv:2312.07908, To appear in SIAM Journal on Optimization

## Preprint

---

- **Accelerating nuclear-norm regularized low-rank matrix optimization through Burer-Monteiro decomposition**  
(with Ching-Pei Lee, Ling Liang and Kim-Chuan Toh), arXiv:2204.14067

- **Optimization over convex polyhedra via Hadamard parametrizations**  
(with Kim-Chuan Toh), submitted.

## Teaching

---

- MA1521 Calculus for Computing, semester 2 AY2021/22
- DSA3102 Essential Data Analytics Tools: Convex Optimisation, semester 1, AY 2022/23
- MA3252 Linear and Network Optimization, semester 2, AY 2022/23
- DSA2102 Essential Data Analytics Tools: Numerical Computation, semester 1, AY 2023/2024

## Referee for journals

---

- SIAM Journal on Optimization
- IEEE Transactions on Signal Processing
- Mathematical Programming

## Awards

---

- PhD Conference Award 2023
- Best Graduate Researcher Award 2023
- Graduate Tutor Commendation letters
- SIAM Student Chapter Certificate 2024

## Skills

---

MATLAB, Python, C, Latex