Recruit Message

for Undergraduate Students

Research in my Lab

■ Approximation Algorithms (近似演算法設計與分析)

  – Design and analysis of approximation algorithms for various types of problems.

■ Two different types of research (goals)

  1. Theoretical Research Oriented (理論研究)

  2. Application Domain Oriented (實務應用問題導向)

Recent Research Results – Application Domain

1. "Near-Optimal UAV Deployment for Delay-Bounded Data Collection in IoT Networks"

   - To cover a given set of points with a minimum number of cycles with a bounded length.

   - 3-approximation algorithm with 35%~58% improvement in practice. (Done by my MS student)

   - Published in *IEEE INFOCOM 2024* – a top (also with the largest scale) international conference in networking/communication.

   Only 2 INFOCOM papers from Taiwan this year.
   1 from NYCU (my lab) and the other from NTU.

Recent Research Results – Application Domain

2. "Joint Optimization Scheme for Energy Saving in Wireless Rechargeable Sensor Networks"

   - To charge a set of sensors with a mobile wireless charger.

   - Sum of radii clustering plus a TSP-type tour.

   - $O(1)$-approximation with 36%~60% improvement in practice.

     - Intl. collaboration with Yonsei university, Korea.
       done by my MS student and undergraduate student

   - Currently wrapping-up & preparing for submission

Recent Research Results – Theory Domain

1. "On Min-Max Graph Balancing with Strict Negative Correlation Constraints"

   - An unrelated scheduling problem with additional constraints.

   - 2-approximation algorithm and a set of hardness proof results. (Done by my MS student)

   - Published in ISAAC 2023 – an important (& top in Asia-pacific) international conference in algorithms and computation.

> Only 2 ISAAC papers from Taiwan this year. All from NYCU (my lab).

Recruit Message for Undergraduate Projects

- I am recruiting (talented / passionate) students for algorithmic research works.

    - If you are talented and _enthusiastic about theory_ and want to do nice theory results…

    - If you plan to do nice research works in your undergraduate study _for future career plan_…

- Contact me and let me know your plan.