Yichen Tao

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EDUCATION

Texas A&M University at College Station, GPA 3.774/4.0 Aug 2020 - May 2024
Applied Mathematical Science (B.S.), Computer Science (Minor), Upper-division GPA 3.932/4.0
Dean's List, Keys to Aggieland Scholarship Recipient, College Research Grant Recipient
National University of Singapore, Exchange Jan 2022 - May 2022

PRESENTATION

Tao, Y., Plute, J., Tran, E., Zhuang, C. (2023, March 25-26). *Floquet isospectrality of discrete one-dimensional periodic Schrödinger operators.* Sixth annual TX-LA undergraduate mathematics conference, Baton Rouge, LA, USA.

RESEARCH

Optimal independent generating system May 2022 - Sep 2022
National University of Singapore, Dept. of Mathematics (Advisor: Dr. Ser Peow Tan)

- Perform numerical analysis on the generating system to provide upper bound of multiplicity
- Optimize generating algorithm from $O(N^2)$ to $O(\log N)$ with Farey Sequence based algorithm
- Visualize the result with Numpy and Matplotlib library
- The result has been applied in another published research of Dr. Tan *(https://arxiv.org/abs/2209.13937, listed as acknowledged participant)*
- Co-author article incoming this fall

Inverse problem on Fermi isospectrality Sep 2022 - May 2023
Texas A&M University, Dept. of Mathematics (Advisor: Dr. Wencai Liu)

- Work on complex solution of isospectrality for discrete periodic Schrödinger operators
- Utilize SageMath and Macaulay2 for numerical analysis
- Propose a combinatorial approach and further formalize with transition matrix graph suggested by Matthew Faust, generalize and show the existence of Γ-period zero-isospectral potential
- Co-author article incoming

STMI Lab: BoXHED 2.0 Sep 2023 - Present
Texas A&M University, Dept. of C.S.E (Advisor: Dr. Bobak J. Mortazavi)

- Project detail see https://github.com/BoXHED/BoXHED2.0
- Develop unit testing package on preprocessor
- Evaluate model interpretability with benchmark across diverse deep learning architectures

PROFESSIONAL COMPETENCE

- **Skills/Tools**:
  - Mathematical background in different topics: (stochastic) calculus, probability and measure theory, algebra, PDE/SDE