Yunzhen Feng

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EDUCATION

New York University (NYU), New York, U.S.   Sep'21 - present
- Ph.D. Student at the Center for Data Science.
- Advisor: Prof. Julia Kempe.

Peking University (PKU), Beijing, China   Aug'17 - June'21
- *B.S.* (honor track) in Applied Mathematics, Data Science.
- Advisor: Prof. Bin Dong.

PUBLICATIONS

1. Chizhou Liu, **Yunzhen Feng**, Ranran Wang, Bin Dong. Enhancing Certified Robustness of Smoothed Classifiers via Weighted Model Ensembling. *ICML 2021 workshop on Adversarial Machine Learning, 2021*.

2. **Yunzhen Feng***, Runtian Zhai*, Di He, Liwei Wang, Bin Dong. Transferred Discrepancy: Quantifying the Difference Between Representations. *arXiv:2007.12446*.

3. **Yunzhen Feng**, Yue M. Lu. A Precise High-dimensional Analysis of Laplacian Semi-Supervised Learning.

RESEARCH EXPERIENCE

Math and Data group, Center for Data Science, NYU   Sep'21 - present
Research Assistant
- Advisor: Prof. Julia Kempe.
- Understand how overparameterized networks and underparameterized networks learn different features with different levels of feature noise in the data.

Beijing International Center for Mathematical Research, PKU.   Jan'20 - Jul'21
Research Assistant
- Advisor: Prof. Bin Dong.
- Proposed an ensembling framework for certified robustness with improved robustness, less training time, and theoretical guarantees.
- Proved the existence of pure Nash Equilibrium in adversarial robustness and combined game-theoretic algorithms with adversarial training.

School of Engineering and Applied Science, Harvard University   Aug'20 - Dec'20
Research Assistant
- Advisor: Prof. Yue M. Lu.
- Provided a rigorous analysis of the generalization error of Laplacian regularized convex classifiers with statistical physics and investigated how unlabeled data help the classification.

Microsoft Research Asia   Jan'20 - June'20
Unofficial Research Collaboration
- Collaborator: Dr. Di He.
- Proposed a new metric to measure the difference between two networks' representation from the feature transfer perspective and investigate the effect of random initialization on the learned features.

INTERN EXPERIENCE

Ubiquant Investment (Beijing) Co., Ltd.   Jul'21 - Sep'21

Quant Researcher
- Extracted core features from Candlestick Chart data and improved IC with ensembling.

SPECIALIZED SKILLS

- **Programming**: Python (PyTorch), MATLAB, LaTeX.
- **Language**: Mandarin (Native), English (Fluent).

SELECTED HONORS AND AWARDS

National Science Foundation Research Traineeship (NRT) Future Program	2021
Data Science Fellowship ($ 190,000), New York Univeristy	2021
Outstanding Graduate Student, Peking University	2021
Bronze Medal, S.-T.Yau College Student Mathematics Contests (top 20 in China)	2020
Meritorious Award, Mathematical Contest in Modeling (top 9%)	2019
The Elite Undergraduate Training Program of Applied Mathematics (top 10%)	2018
Gold Medal, China Mathematics Olympiad (top 100 in China)	2016
Ranked First in First Prize, Chinese High School Mathematics League, Beijing (top 1)	2016

ACTIVITIES AND INTERESTS

- Successfully climbed the Luodui Mount (6010m) at Tibet, China.
- 3.0 (NTRP standard) Tennis Player.
- Rock-climber and outdoor hiker trained by committees from Chinese Mountaineering Association.
- One-year volunteer at Arthur M. Sackler Museum of Art and Archaeology, Peking University.
- Teaching Assistant for *Outdoor Exploration* course at PKU.