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 learn different features with inner data structures.
- Create knowledge-condensed core dataset for efficient meta-learning.

Marketplace Investment Team, Uber Technologies May'22 - Aug'22

Applied Scientist PhD Intern

- Mentor: Dr. Chen Xu, Dr. Jason Dowlatabadi.
- Team Advisor: Prof. Stefan Wager, Prof. Peter Frazier.
- Design CausalML model for learning heterogeneous incentive response function across cities with observational data and experimental 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.
- Investigated how unlabeled data help the classification for Gaussian mixtures and Laplacian regularization using high dimensional statistics.

Microsoft Research Asia Jan'20 - June'20

Unofficial Research Collaboration

- Collaborator: Dr. Di He.
- Proposed to measure the difference between two networks' representation via their performances on a set of downstream tasks and investigate the effect of random initialization on the learned features.

Other Experience

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

Quant Researcher

- Machine learning for finance.
- Retrieved core patterns with designed pretrain tasks and improved IC with diverse ensembling.

Specialized Skills

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