# 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.
- Committee: Prof. Andrew Gordon Wilson, Prof. Qi Lei.

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

## PUBLICATIONS

1. **Yunzhen Feng**, Ramakrishna Vedantam, Julia Kempe. Embarassingly Simple Dataset Distillation. *In submission*.
2. **Yunzhen Feng**, Nikos Tsilivis, Tim G. J. Rudner, Julia Kempe. Attacking Bayes: Are Bayesian Neural Networks Inherently Robust? *In submission*.
3. 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*.
4. **Yunzhen Feng**\*, Runtian Zhai\*, Di He, Liwei Wang, Bin Dong. Transferred Discrepancy: Quantifying the Difference Between Representations. *arXiv:2007.07446*.
5. **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*                                                                      *New York, U.S.*
- Advisor: Prof. Julia Kempe.
- Efficient Data Curation Frameworks: Develop and propose a simple yet effective method for dataset distillation, achieving state-of-the-art results across numerous benchmarks. Introduce a task-agnostic criterion for data selection, enhancing the fine-tuning efficiency of large-scale vision models.

**Marketplace Investment Team, Uber Technologies**                                    May'22 - Aug'22
*Applied Scientist PhD Intern*                                                            *California, U.S.*
- Mentor: Jason Dowlatabadi, Dr. Chen Xu, Dr. Allen Zhang.
- Team Advisor: Prof. Stefan Wager, Prof. Peter Frazier.
- Design CausalML model for learning heterogeneous incentive response across cities with observational data and experimental data.

**Beijing International Center for Mathematical Research, PKU**                                    Jan'20 - Jul'21
*Research Assistant*                                                                      *Beijing, China*
- 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*  *Online*

- 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*  *Beijing, China*

- 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 Co., Ltd.**  Jul'21 - Sep'21

*Quant Research Intern*  *Beijing, China*

- Deep learning for the stock market.
- Retrieved core patterns with designed pretrain tasks and improved IC with diverse ensembling.

## TEACHING

Head TA for **Modern Topics in Statistical Learning Theory**  2023 Spring

## SELECTED HONORS AND AWARDS

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|---|---|
| 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 |

## SPECIALIZED SKILLS

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

## ACTIVITIES AND INTERESTS

- Successfully climbed the Luodui Mount (6010m) at Tibet, China.
- 3.0 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.