

# TIANQI CHEN

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## EDUCATION

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University of Texas, Austin  
Ph.D. in Statistics

September 2021 - (estimated) May 2026

University of Michigan, Ann Arbor  
M.S. in Applied Statistics

September 2019 - May 2021

Fudan University  
B.S. in Applied Mathematics

September 2015 - June 2019

## PUBLICATIONS

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**Learning to Jump: Thinning and Thickening Latent Counts for Generative Modeling** [\[Paper\]](#) [\[Code\]](#)  
*Chen, T. and Zhou, M.* *ICML, 2023*

**ASK: Adversarial Soft k-Nearest Neighbor Attack and Defense** [\[Paper\]](#) [\[Code\]](#)  
*Wang, R., Chen, T., Yao, P., Liu, S., Rajapakse, I. and Hero, A.* *IEEE Access, 2022*

**RAILS: A Robust Adversarial Immune-inspired Learning System** [\[Paper\]](#) [\[Code\]](#)  
*Wang, R., Chen, T., ..., Rajapakse, I. and Hero, A.* *IEEE Access, 2022*

**Immuno-mimetic Deep Neural Networks (Immuno-Net)** [\[Paper\]](#)  
*Wang, R., Chen, T., ..., Rajapakse, I. and Hero, A.* *2021 ICML Workshop on Comp. Bio.*

## PROJECTS

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**Jump-based Deep Generative Modeling** March 2023 - June 2023

- Studied non-Gaussian-based iterative data corruption and recovery processes from Bregman divergence perspective;
- Proposed a binomial/Poisson-based hierarchical variational autoencoding framework that are well suited for modeling non-standard non-negative distributions that exhibits sparsity, skewedness, heavy-tailedness and/or heterogeneity.

**Diffusion-based Deep Generative Modeling** [\[Code\]](#) June 2022 - February 2023

- Built the codebase of denoising diffusion models including DDPM, DDIM sampler and classifier-free guidance in PyTorch and reproduced the experiment results in the papers.

**GARD: Guaranteeing AI Robustness Against Deception** July 2020 - May 2022  
*Research Affiliate* *University of Michigan*

- We first introduced an information-theoretic surrogate loss for DkNN-based classification, based upon which we then proposed an attack algorithm and a defense algorithm that achieved SOTA adversarial results on DkNN-based models;
- We proposed an immune-inspired adversarial framework that can defend against unseen attacks by mimicking the immune response of B-cells.

## FELLOWSHIPS AND AWARDS

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UT Professional Development Award 2023

McCombs Dean's Fellowship 2022

Graduate School Recruitment Fellowship 2021

Fudan University Excellent Freshman Scholarship (Top 1%) 2015

## TECHNICAL STRENGTHS

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Programming Languages Python, R

Machine Learning / Deep Learning APIs PyTorch, Scikit-learn, SciPy, NumPy