ZHENDONG WANG

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EDUCATION

The University of Texas, Austin Austin, TX
PhD in Statistics & Data Science, GPA: in progress Expected May.2025

Columbia University New York, NY
M.S. in Data Science, GPA: 4.0/4.0 Sep.2018-Dec.2019
Relevant Courses: Algorithms, Reinforcement Learning, NLP, Bayesian Method Machine Learning

Tongji University Shanghai, CN
B.S. in Civil Engineering, GPA: 90.45/100 Sep.2014-Jul.2018

PUBLICATIONS

- Zhendong Wang and Mingyuan Zhou.
  Thompson Sampling via Local Uncertainty.
  In International Conference on Machine Learning, 2020.
- Xinjie Fan, Yizhe Zhang, Zhendong Wang and Mingyuan Zhou.
  Adaptive Correlated Monte Carlo for Contextual Categorical Sequence Generation.
  In International Conference on Learning Representations, 2020.
- Anonymous*, Zhendong Wang* and Anonymous.
  Implicit Distributional Reinforcement Learning.
  In Neural Information Processing Systems, 2020 (Under Review).

TECHNICAL SKILLS

- **Programming Languages:** Python (Numpy, Scikit-Learn, Matplotlib, …), Java, R, MySQL
- **Deep Learning Packages:** Tensorflow, Pytorch
- **Language:** Chinese, English

RESEARCH EXPERIENCE

Graduate Research Assistant **Summer 2019**
Department of Statistics & Data Science, University of Texas, Austin
Topic 1: Correlated MC for Categorical Sequence Generation

- Engaged in the Augmented-Reinforce-Swap-Merge (ARSM) gradient approximator derivation for contextual categorical sequence generation.
- Used ARSM approximator to implement adaptive correlated Monte Carlo based policy gradient for sequence generation, in Pytorch.
- Evaluated our proposed correlated MC policy gradient method on image captioning and neural program synthesis (NPS) tasks.
- Compared our correlated MC based method with independent ones, and found that our model achieved greater variance reduction and could adaptively modify the number of MC samples according to the uncertainty on token generation.

Topic 2: Thompson Sampling with Local Uncertainty

- Developed a new probabilistic modeling framework for Thompson sampling with the power of local variable uncertainty.
- Merged semi-implicit variational inference structure into the framework to further improve the expressiveness of latent distribution.
- Evaluated our framework on classical sequence decision making problem, contextual bandits, with comparison to current state-of-the-arts baselines, which leverages the global variable uncertainty.
- Found that local uncertainty based framework can capture the underlying uncertainty in data well, and achieved state-of-the-arts performance, while having low computational complexity.

PROJECTS

Superresolution and Prediction of Ocean Sea-Surface Temperature **Fall 2019**

- Implemented the proposed Super Resolution Generative Adversarial Network (SRGAN).
- Evaluated the SRGAN model on the one channel ocean temperature data with 4x resolution upscaling.
- Designed regularization term in objective function to make the generated new ocean temperature data satisfying ocean physical constraints.