

Tengyang Xie

<https://tengyangxie.github.io>

Email: tx10@illinois.edu

RESEARCH INTERESTS

My interests lie broadly in **interactive learning**, **statistical machine learning**, and **high-dimensional probability**. My current research focuses on **batch reinforcement learning** (off-policy/offline RL) and **exploration**.

EDUCATION

University of Illinois at Urbana-Champaign

Urbana, IL

Ph.D. Student – Computer Science

Aug. 2019 – Sept. 2022 (expected)

Advisor: Nan Jiang

University of Massachusetts Amherst

Amherst, MA

Ph.D. Student – Computer Science (GPA: 4.0/4.0)

Sept. 2016 – Aug. 2019

Master of Science – Computer Science (GPA: 4.0/4.0)

Sept. 2016 – Feb. 2019

University of Science of Technology of China

Hefei, Anhui, China

Bachelor of Science – Physics (Major GPA: 4.0/4.3)

Sept. 2011 – Jun. 2015

PUBLICATIONS

[1]. [Tengyang Xie](#), Nan Jiang.

Q* Approximation Schemes for Batch Reinforcement Learning: A Theoretical Comparison.
In *Thirty-sixth Conference on Uncertainty in Artificial Intelligence (UAI 2020)*.

[2]. [Tengyang Xie](#), Yifei Ma, Yu-Xiang Wang.

Towards Optimal Off-Policy Evaluation for Reinforcement Learning with Marginalized Importance Sampling.

In *Thirty-third Conference on Neural Information Processing Systems (NeurIPS 2019)*.

Spotlight presentation at the NeurIPS 2018 Workshop on Causal Learning.

[3]. Yu Bai, [Tengyang Xie](#), Nan Jiang, Yu-Xiang Wang.

Provably Efficient Q-Learning with Low Switching Cost.

In *Thirty-third Conference on Neural Information Processing Systems (NeurIPS 2019)*.

[4]. [Tengyang Xie*](#), Bo Liu*, Yangyang Xu, Mohammad Ghavamzadeh, Yinlam Chow, Daoming Lyu, Daesub Yoon.

A Block Coordinate Ascent Algorithm for Mean-Variance Optimization.

In *Thirty-second Conference on Neural Information Processing Systems (NeurIPS 2018)*.

(* indicates equal contribution or alphabetic ordering)

PREPRINTS

[5]. [Tengyang Xie](#), Nan Jiang.

Batch Value-function Approximation with Only Realizability.

arxiv:2008.04990.

[6]. [Tengyang Xie](#), Philip S. Thomas, Gerome Miklau.

Privacy Preserving Off-Policy Evaluation.

arxiv:1902.00174.

EXPERIENCE

University of Illinois at Urbana-Champaign

Urbana, IL

Research Assistant Aug. 2019 – Present
Advisor: Nan Jiang

- I am currently working on batch RL (off-policy/offline RL) and exploration, advised by Prof. Nan Jiang.

Microsoft Research Lab New York City, NY
Research Intern (Remote) Host: Paul Mineiro May 2020 – Aug. 2020
Mentors: Alekh Agarwal, Ching-An Cheng, John Langford, Paul Mineiro, Ida Momennejad

- Conducted research on:
 - (1) Batch reinforcement learning with non-exploratory data;
 - (2) A novel and more general form of interactive learning.

Amazon AI Palo Alto, CA
Research Intern May 2018 – Aug. 2018
Mentors: Yu-Xiang Wang, Yifei Ma

- Proposed marginalized importance sampling (MIS) for off-policy evaluation (OPE). This is the first of OPE estimator which could attain the Markov property to reduce the variance. We also proved that the variance of the marginalized estimators could match the existed variance lower bound for the episodic MDPs.

University of Massachusetts Amherst Amherst, MA
Research Assistant Sept. 2016 – May 2019
Advisors: Gerome Miklau, Philip S. Thomas

- I worked with Prof. Gerome Miklau and Phil Thomas, on the problems in differential privacy and reinforcement learning.

PROFESSIONAL SERVICES

- Conference Reviewer/Program Committee: NeurIPS (2020 2019), ICML (2020 2019), AISTATS (2020), AAAI (2020 2019).
- Journal Reviewer: Machine Learning Journal.
- Workshop Program Committee:
 - NeurIPS 2019 Optimization Foundations of Reinforcement Learning Workshop.
 - ICML 2020 Theoretical Foundations of Reinforcement Learning Workshop.
 - NeurIPS 2020 Offline Reinforcement Learning Workshop.

SELECTED HONORS AND AWARDS

Wing Kai Cheng Fellowship	2019
University Fellowship	2019
NeurIPS Travel Award	2018, 2019
The Mathematical Contest in Modeling (MCM), Honorable Mention	2014
Outstanding Student Scholarship, Silver Medalist (Top 10%)	2013, 2014
Outstanding Student Scholarship, Bronze Medalist (Top 20%)	2012
Outstanding Freshmen Scholarship	2011
China National Physics Olympiad, First Prize	2010
China National Physics Olympiad, Second Prize	2009
China National Mathematical Olympiad, Second Prize	2009

SKILLS

Proficient: Python, PyTorch, TensorFlow, MXNet, Matlab, \LaTeX
Experienced: C, C++, Java, SQL, Mathematica