LIYU CHEN

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EDUCATION

University of Southern California August 2017 - Present
PhD in Computer Science GPA: 4.0/4.0

Hong Kong University of Science and Technology September 2013 - June 2017
Bachelor of Computer Science GPA: 3.922/4.3
Second Major: Applied Mathematics

ETH Zurich February 2016 - June 2016
Exchange Study, Computer Science GPA: 5.625/6

EXPERIENCE

Facebook AI Research June 2022 - August 2022
Research Intern *Supervisor: Matteo Pirotta, Alessandro Lazaric*

Description: 1) studied sample complexity of estimating near-optimal policies for goal-oriented Markov Decision Processes; 2) developed improved algorithm for reward-free autonomous exploration of unknown environment.

ByteDance Inc May 2019 - August 2019
Applied Machine Learning Intern *Supervisor: Chong Wang*

Description: studied item cold start problems in recommendation system; proposed a novel method that makes use of probabilistic context embedding to infer item representations from a few history ratings.

University of Southern California August 2017 - 2020
Research Assistant *Supervisor: Fei Sha*

Description: worked on transfer learning in reinforcement learning.

LSCM R&D Centre June 2015 - August 2015
Software Engineering Intern
Description: worked on baggage recognition in airports using computer vision techniques.

RESEARCH INTEREST

Machine Learning, Reinforcement Learning, Online Learning, Recommendation System

PUBLICATIONS

(* indicates equal contribution or alphabetical ordering)

Reaching Goals is Hard: Settling the Sample Complexity of the Stochastic Shortest Path
Liyu Chen, Andrea Tirinzoni, Matteo Pirotta, Alessandro Lazaric
International Conference on Algorithmic Learning Theory (ALT), 2023

Near-Optimal Goal-Oriented Reinforcement Learning in Non-Stationary Environments
Liyu Chen, Haipeng Luo
Neural Information Processing Systems (NeurIPS), 2022

Follow-the-Perturbed-Leader for Adversarial Markov Decision Processes with Bandit Feedback
Yan Dai, Haipeng Luo, Liyu Chen
Neural Information Processing Systems (NeurIPS), 2022

Improved No-Regret Algorithms for Stochastic Shortest Path with Linear MDP

Liyu Chen, Rahul Jain, Haipeng Luo
International Conference on Machine Learning (ICML), 2022 **(Long Talk)**

Learning Infinite-Horizon Average-Reward Markov Decision Processes with Constraints
Liyu Chen, Rahul Jain, Haipeng Luo
International Conference on Machine Learning (ICML), 2022

Policy Optimization for Stochastic Shortest Path
Liyu Chen, Haipeng Luo, Aviv Rosenberg
Conference on Learning Theory (COLT), 2022

Policy Learning and Evaluation with Randomized Quasi-Monte Carlo
Sébastien M. R. Arnold, Pierre LEcuyer, Liyu Chen, Yi-fan Chen, Fei Sha
Conference on Artificial Intelligence and Statistics (AISTATS), 2022

Implicit Finite-Horizon Approximation and Efficient Optimal Algorithms for Stochastic Shortest Path
Liyu Chen, Mehdi Jafarnia-Jahromi, Rahul Jain, Haipeng Luo
Neural Information Processing Systems (NeurIPS), 2021

Finding the Stochastic Shortest Path with Low Regret: The Adversarial Cost and Unknown Transition Case
Liyu Chen, Haipeng Luo
International Conference on Machine Learning (ICML), 2021

Impossible Tuning Made Possible: A New Expert Algorithm and Its Applications
Liyu Chen*, Haipeng Luo*, Chen-Yu Wei*
Conference on Learning Theory (COLT), 2021

Minimax Regret for Stochastic Shortest Path with Adversarial Costs and Known Transition
Liyu Chen, Haipeng Luo, Chen-Yu Wei
Conference on Learning Theory (COLT), 2021

Hyper-parameter Tuning under a Budget Constraint
Zhiyun Lu, Liyu Chen, Chao-Kai Chiang, Fei Sha
2019 International Joint Conference on Artificial Intelligence (IJCAI), 2019

Synthesized Policies for Transfer and Adaptation across Tasks and Environments
Hexiang Hu*, Liyu Chen*, Boqing Gong, Fei Sha
Neural Information Processing Systems (NeurIPS), 2018 **(Spotlight)**

ACTIVITIES

Reviewer: WACV 2020, ALT 2021, KDD (MARBLE workshop) 2021, NeurIPS 2021, AISTATS 2022, ICML 2022, COLT 2022, NeurIPS 2022, AISTATS 2023

AWARDS

Kerry Holdings Limited Scholarship 2013 - 2017
Half-tuition scholarship for 4 years

Dean's List 2014 - 2015, 2015 - 2016
In recognition of excellent academic achievement

TEACHING EXPERIENCE

Teaching Assistant, CSCI 567 Machine Learning Fall 2022, Fall 2021, Summer 2021, Spring 2021, Fall 2020, Fall 2019

Teaching Assistant, CSCI 102L Fundamentals of Computation Spring 2022