Zhiyuan Tang

Tsinghua Univerisity
Department of Automation
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Education

Tsinghua University 2023 (expected)
B.Eng. in Automation.
Main courses: Calculus, Linear Algebra, Probability and Statistics, Data Structure and Algorithm, Machine Learning and Pattern Recognition, Operations Research

Research Interests

Methodologies: statistical machine learning, online learning, sequential decision making.
Applications: healthcare operations, online platforms, retail operations.

Research

School of Economics and Management, Tsinghua University
- Advisor: Prof. Xiaojie Mao
- Project: Contextual Bandits with Proxy Response

Department of Computer Science, Carnegie Mellon University
- Advisor: Prof. Weina Wang
- Project: On the Exploration in Load-Balancing with Unknown Service Rates
- Abstract: The paper "On the Exploration in Load-Balancing with Unknown Service Rates" with Weina Wang and Yifei Huang has been submitted to ACM SIGMETRICS 2023. In this paper, we consider the learning-integrated policy for queuing systems when the system parameters are unknown a priori. While most policies in previous literature require an explicit exploration, we prove that explicit exploration is not necessary to obtain a constant regret if we use a Never-Queue style policy as a baseline. We also propose a method with changepoint detection to deal with non-stationary service rates.

School of Statistics, University of Minnesota, Twin Cities
- Advisor: Prof. Jie Ding
- Project: Classification with Set-Valued Labels
- Abstract: Set-valued labels refer to a form of labeling where a set of multiple labels is assigned to a training sample. We consider the classification problem where such set-valued labels are generated deliberately to obfuscate the information in the ground-truth labels. We prove that the method of k-Nearest-Neighbors (k-NN) and Linear Discriminant Analysis can still achieve consistency and fast convergence rates on such set-valued labeling data. We also introduce a practical neural network method for large-scale data, and the method can beat the SOTA in many real-life datasets.

Experience

Class Tutor, Tsinghua Summer School 2022.07-2022.08
Data Engineer Intern, Apple 2021.06-2021.10
Strategy Analyst Intern, SandStar 2021.01-2021.05

Leadership

Vice President of Tsinghua iOS Club 2020.09-2021.02
Vice President of Tsinghua Students Choir 2019.09-2020.05

Languages and Skills

English (proficient), Mandarin (native)
C++ &JavaScript&Swift&Python Programming, Latex