Department of Computer Science
香港城市大學
City University of Hong Kong

COMPUTER SCIENCE COLLOQUIUM

Approximating the TV distance between two product distributions

SPEAKER **Weiming Feng**

Assistant Professor
School of Computing and Data Science, The University of Hong Kong

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TIME 2:00 PM - 3:00 PM
VENUE CS Seminar Room, Y6405, 6th Floor, Yellow Zone, Yeung Kin Man Academic Building, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong

ABSTRACT

The total variation (TV) distance is a fundamental metric to measure the difference between two distributions. Recently, Bhattacharyya et. al. initiated the problem of computing the TV distance between two high-dimensional distributions. They proved that the exact computation of TV distance, even for product distributions over the Boolean domain, is #P-hard. In this talk, I will discuss some recent progress in approximating the TV distance between two product distributions. I will introduce a randomized approximation algorithm based on the coupling technique and a deterministic algorithm based on the sparsification of distributions.

BIOGRAPHY

Weiming Feng is an Assistant Professor in the School of Computing and Data Science at The University of Hong Kong. He obtained his Ph.D. from Nanjing University in June 2021. His research spans theoretical computer science, with a focus on high-dimensional probability, sampling algorithms, and approximate counting algorithms.

All are welcome!

In case of questions, please contact Prof LI Minming at minming.li@cityu.edu.hk, or visit the CS Departmental Seminar Web at https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums.