DAN ZHANG

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RESEARCH INTERESTS

Data privacy, Data visualization and exploration

EDUCATION

University of Massachusetts, Amherst, MA *Sep 2014 - Present*
MS/PhD in Computer Science — GPA: 4.0/4.0
Advisor: Gerome Miklau

Harbin Institute of Technology, Harbin, China *Sep 2010 - Jul 2014*
B.Eng. in Information Security — Rank: 1/33

University of Hong Kong, HK *Sep 2012 - Jan 2013*
Exchange Student — GPA: 4.08/4.3

PUBLICATION

Ektelo: A Framework for Defining Differentially-Private Computations.
D. Zhang, R. McKenna, I. Kotsogiannis, M. Hay, A. Machanavajjhala, G. Miklau. SIGMOD 2018

Challenges of Visualizing Differentially Private Data.
D. Zhang, M. Hay, G.Miklau, B.O'Connor. *TPDP workshop (co-located with ICML 2016)*

Principled Evaluation of Differentially Private Algorithms using DPBench
M. Hay, A. Machanavajjhala, G. Miklau, Y. Chen, **D. Zhang**. *SIGMOD 2016*

Exploring Privacy-Accuracy Tradeoffs using DPComp.
M. Hay, A. Machanavajjhala, G. Miklau, Y. Chen, **D. Zhang**, G. Bissias. *SIGMOD 2016 Demo*

EXPERIENCES

Database Lab, University of Massachusetts *Sep 2014 - Present*
Research Assistant, advised by Gerome Miklau

· Propose a novel programming framework and system called ektelo for implementing privacy algorithms. For the task of answering linear counting queries, nearly all existing algorithms can be composed from operators in the framework.
· Explore key challenges in privacy-preserving data visualization. Propose novel approaches using statistical indistinguishability to deal with uncertainty in private visualization.
· Contribute to DPComp.org, a web-based tool designed to help both practitioners and researchers assess the accuracy of state-of-the-art differentially private algorithms. Conduct a comprehensive empirical study of 15 published algorithms for 1D and 2D linear range queries on 27 datasets.

Google, San Francisco *May 2017 - Aug 2017*
Software Engineer Intern, Firebase Team

· Develop and open-source a Firebase Cloud Function library to protect the privacy of users. It automatically analyzes the apps Security Rules, identifies the location of user data and conducts user data wipeout on account deletion.

Data and Knowledge Research Center, Harbin Institute of Technology *Sep 2013 - Jul 2014*
Research Assistant, advised by Hongzhi Wang

· Proposed a quality-driven data pricing strategy which assesses multiple data quality dimensions.
· Developed a fairness-assuring quality-based data market framework using cryptographic techniques.

Department of Computer Science, University of Hong Kong *Jul 2012 - Aug 2013*
Research Intern, advised by Lucas C.K. Hui and S.M. Yiu

· Developed an effective server-side attack on a forensic scheme for remote servers.

SELECTED AWARDS

Jim Gray Scholarship	*Sep 2014*
Mathematical Contest in Modeling Meritorious Winner	*Feb 2012*
China National Scholarship (Top 1% nationwide)	*Oct 2012*
Li & Fung Scholarship	*Sep 2012*

TECHNICAL STRENGTHS

Python [Pandas, Numpy, Matplotlib]
C++, Matlab, R [ggplot2], LaTeX, PHP, Java

COURSES

CMPSCI 611: Advanced Algorithms
CMPSCI 645: DatabaseDesign and Implementation
CMPSCI 677: Distributed Operating Systems
CMPSCI 689: Machine Learning
CMPSCI 683: Artificial Intelligence
CMPSCI 646: Information Retrieval

TEACHING

CMPSCI 445: Information Systems (TA)