

# Xiaoguo LI Ph.D.

Department of Computer Science, Hong Kong Baptist University  
DLB 625, 224 Waterloo Rd, Kowloon Tong, Hong Kong, China  
✉ xiaoguosk@gmail.com | csxgli@comp.hkbu.edu.hk  
🌐 <https://github.com/xiaoguosk>

## RESEARCH INTERESTS

I am interested in Information Security, Privacy-Aware Data Analytics, Cryptography, and Access Control. My current focuses include:

- Federated data analytics with privacy assurance;
- Data sharing with fine-grained access control;
- Differential privacy and its applications;
- Cryptographic protocols and its applications.

## PROFESSIONAL EXPERIENCE

**Hong Kong Baptist University**  
**Post-doctoral Research Fellow**

Hong Kong, China  
Sep. 2019 – Present

- Advisor: Prof. Jianliang Xu
- Developed a novel protocol to enable oblivious federated join.
- Implemented the protocol on the Intel SGX devices.

**University of Wollongong**  
**Visiting Student**

Wollongong, NSW, Australia  
Sep 2017 – Sep 2018

- Advisor: Prof. Yi Mu
- Conducted a security reduction training.
- Implemented a Chinese-Wall access control model in a cryptographic way.

## EDUCATION

**Chongqing University**

Ph.D. in Computer Science

M.S. in Computer Science

Dissertation: Research on Secure Data Outsourcing in Cloud Computing

Advisor: Prof. Tao Xiang

Chongqing, China  
Sep 2015 – Jun 2019

Sep 2013 – Aug 2015

**Shanxi Normal University**

Bachelor of Mathematics & Computer Science

Linfen, China  
Sep 2009 – Jun 2013

## PROJECTS

**Federated data analytics using hardware enclaves.** This project aims to develop efficient federated techniques for advanced data analytics using hardware enclaves (e.g., Intel SGX). We propose a novel analytics framework that supports oblivious and efficient data access in query processing. We propose new data-oblivious techniques for various federated analytics queries, including joins, SQL queries, and graph queries.

**Embedding the biometric features in the identity-based encryption.** This project aims to design a secure, time-saving and space-saving biometric identity-based encryption (BIBE) regarding the biometric-based identity (face, etc.) as public key. We propose techniques to overcome the challenge introduced by the fuzziness of biometric identities.

## SKILLS

**Programming** C/C++, Java, Python, Matlab,  $\LaTeX$

**Tools** Vim, Git, macOS, Linux, Intel SGX

**Languages** English, Mandarin

## PUBLICATIONS

**Complete List:** Google Scholar [oUkExywAAAAJ] · DBLP [Xiaoguo Li]

1. X. Li, T. Xiang, Y. Mu, F. Guo, and Z. Yao, "Formulating chinese wall model with privacy enhancement and its applications in cloud computing," *IEEE Transactions on Cloud Computing*, 202X, Under Review.
2. X. Li, T. Xiang, S. Guo, H. Li, and Y. Mu, "Privacy-preserving reverse nearest neighbor query over encrypted spatial data," *IEEE Transactions on Services Computing*, Mar. 2021, Regular Paper.

3. P. Wang, T. Xiang, **X. Li**, and H. Xiang, "Access control encryption without sanitizers for internet of energy," *Information Sciences*, vol. 546, pp. 924–942, Feb. 2021, Regular Paper.
4. **X. Li**, T. Xiang, and P. Wang, "Achieving forward unforgeability in keyword-field-free conjunctive search," *Journal of Network and Computer Applications*, vol. 166, no. 5, p. 102755, Sep. 2020, Regular Paper.
5. P. Wang, T. Xiang, and **X. Li**, "Public key encryption with conjunctive keyword search on lattice," *Journal of Information Security and Applications*, vol. 52, p. 102433, Apr. 2020, Regular Paper.
6. S. Guo, T. Xiang, and **X. Li**, "Towards efficient privacy-preserving face recognition in the cloud," *Signal Processing*, vol. 164, no. 11, pp. 320–328, Nov. 2019, Regular Paper.
7. S. Guo, T. Xiang, **X. Li**, and Y. Yang, "PEID: A perceptually encrypted image database for visual security evaluation," *IEEE Transactions on Information Forensics and Security*, vol. 15, no. 8, pp. 1151–1163, Aug. 2019, Regular Paper.
8. Y. Zhou, T. Xiang, and **X. Li**, "Efficient and privacy-preserving query on outsourced spherical data," in *International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)*, Nov. 2018, pp. 138–152, Full Paper.
9. **X. Li**, T. Xiang, F. Chen, and S. Guo, "Efficient biometric identity-based encryption," *Information Sciences*, vol. 465, pp. 248–264, Oct. 2018, Regular Paper.
10. T. Xiang, Y. Li, **X. Li**, S. Zhong, and S. Yu, "Achieving verifiable, dynamic and efficient auditing for outsourced database in cloud," *Journal of Parallel and Distributed Computing*, vol. 112, pp. 97–107, Feb. 2018, Regular Paper.
11. T. Xiang, Y. Li, **X. Li**, S. Zhong, and S. Yu, "Collaborative ensemble learning under differential privacy," *Web Intelligence*, vol. 16, no. 1, pp. 73–87, Jan. 2018, Regular Paper.
12. S. Guo, T. Xiang, and **X. Li**, "Image quality assessment based on multiscale fuzzy gradient similarity deviation," *Soft Computing*, vol. 21, no. 5, pp. 1145–1155, Mar. 2017, Regular Paper.
13. T. Xiang, **X. Li**, F. Chen, S. Guo, and Y. Yang, "Processing secure, verifiable and efficient SQL over outsourced database," *Information Sciences*, vol. 348, pp. 163–178, Jun. 2016, Full Paper.
14. T. Xiang, S. Guo, and **X. Li**, "Perceptual visual security index based on edge and texture similarities," *IEEE Transactions on Information Forensics and Security*, vol. 11, no. 5, pp. 951–963, Jan. 2016, Regular Paper.
15. T. Xiang, **X. Li**, F. Chen, and Y. Mu, "Bilateral-secure signature by key evolving," in *Proc. of ACM on Asia Conference on Computer and Communications Security (AsiaCCS)*, 2016, pp. 523–533, Full Paper.