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About Me

Xiaoguo LI now is a postdoctoral researcher fellow at the Database Lab, Hong Kong Baptist University. He received the Ph.D. degree in Computer Science from Chongqing University, China, in July 2019. His current research interests include

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

Experience

Hong Kong Baptist University　　　　**Hong Kong, China**

Postdoctoral Researcher Fellow (Supervised by Prof. Jianliang Xu), Sep. 2019 – Sep. 2021
1. Developed a novel protocol to enable oblivious federated join.
2. Implemented the protocol on the Intel SGX devices.

University of Wollongong　　　　**Wollongong, Australia**

Visiting Student (Supervised by Prof. Yi Mu), Oct. 2017 – Oct. 2018
1. Conducted a security reduction training.
2. Implemented a Chinese-Wall access control model in a cryptographic way.

Education

Chongqing University　　　　**Chongqing, China**

Ph.D. in Computer Sciences (Supervised by Prof. Tao Xiang), Sep. 2015 – Jul. 2019

Chongqing University　　　　**Chongqing, China**

Pursuing the M.S. Degree in Computer Sciences (Supervised by Prof. Tao Xiang), Sep. 2013 – Jul. 2015

Shanxi Normal University　　　　**Linfen, China**

B.Eng. in Computer Sciences, Sep. 2009 – Jul. 2013

Publication

1. **Xiaoguo Li**, Tao Xiang, Yi Mu, Fuchun Guo and Zhongyuan Yao. Formulating Chinese Wall Model with Privacy Enhancement and Its Applications in Cloud Computing. Submitted to IEEE Trans. on Cloud Computing.
2. **Xiaoguo Li**, Tao Xiang, Shangwei Guo and Yi Mu. Privacy-Preserving Reverse Nearest Neighbor Query over Encrypted Spatial Data. IEEE Trans. on Services Computing, Doi: 10.1109/TSC.2021.3065356.
3. **Xiaoguo Li**, Tao Xiang, Peng Wang. Achieving Forward Unforgeability in Keyword-field-free Conjunctive Search. Journal of Network and Computer Applications, 2020, 166:102755.
4. **Xiaoguo Li**, Tao Xiang, Fei Chen, Shangwei Guo. Efficient Biometric Identity-based Encryption. Information Sciences, 2018, 465: 248-264.
5. Tao Xiang, **Xiaoguo Li**, Fei Chen, Yuanyuan Yang and Shengyu Zhang. Achieving Verifiable, Dynamic and Efficient Auditing for Outsourced Database in Cloud. Journal of Parallel Distributed Computing, 2018, 112: 97-107.
6. Tao Xiang, **Xiaoguo Li**, Fei Chen, Shangwei Guo and Yuanyuan Yang. Processing Secure, Verifiable and Efficient SQL over Outsourced Database. Information Sciences, 2016, 348: 163-178.

7. Tao Xiang, **Xiaoguo Li**, Fei Chen and Yi Mu. Bilateral-secure Signature by Key Evolving. ASIACCS, 2016, 523-533.
8. Peng Wang, Tao Xiang, **Xiaoguo Li**, Hong Xiang. Access Control Encryption without Sanitizers for Internet of Energy. Information Sciences, 2021, 546: 924-942.
9. Peng Wang, Tao Xiang, **Xiaoguo Li**, Hong Xiang. Public Key Encryption with Conjunctive Keyword Search on Lattice. Journal of Information Security and Applications, 2020, 51: 102433.
10. Shangwei Guo, Tao Xiang, **Xiaoguo Li**, Ying Yang. PEID: A Perceptually Encrypted Image Database for Visual Security Evaluation. IEEE Trans. on Information Forensics and Security, 2019, 15: 1151-1163.
11. Shangwei Guo, Tao Xiang, **Xiaoguo Li**. Towards Efficient Privacy-Preserving Face Recognition in the Cloud. Signal Processing, 2019, 164:320-328.
12. Tao Xiang, Yang Li, and **Xiaoguo Li**, Shigang Zhong and Shui Yu. Collaborative Enemble Learning Under Differential Privacy. Web Intelligence, 2018, 16(1): 73-87.
13. Tao Xiang, Shangwei Guo, and **Xiaoguo Li**. Perceptual Visual Security Index Based on Edge and Texture Similarities. IEEE Trans. on Information Forensics and Security, 2016, 11(5): 951-963.
14. Shangwei Guo, Tao Xiang, and **Xiaoguo Li**. Image Quality Assessment based on Multiscale Fuzzy Gradient Similarity Deviation. Soft Computing, 2017, 21(5): 1145-1155.
15. Yueyue Zhou, Tao Xiang, **Xiaoguo Li**. Efficient and Privacy-Preserving Query on Outsourced Spherical Data. ICA3PP, 2018: 138-152.

PROJECT

1. **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.
2. **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.

MORE

- **Programming Skills**. C/C++; Python
- **Tools**. Linux; Intel SGX
- **Language**. Mandarin; English