Cheng Huang

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Education

- **Xidian University** Xi'an, China
  Bachelor of Engineering, Information Security
  Sept.2009 – Jul.2013
- **Xidian University** Xi'an, China
  Master of Engineering, Information Security
  Aug.2013 – Jan.2016 (expected)

Academic Experience

- **Nanyang Technological University** Singapore
  Project Officer
  Feb.2015 – present

Project Experience

- **Design and Implementation of a Secure Mobile Cloud Computing Framework**
  Project Officer   *Feb.2015 – present*

  --- Design a secure mobile cloud computing framework with proxy re-encryption, homomorphic encryption, and fault-tolerant aggregation techniques.
  --- Evaluate the efficiency and feasibility of cyber security solutions in ubiquitous and mobile sensing environments.
  --- Implement some available demos using java on android platform.

- **Secure Cloud Platform: The Secure Authentication System for Cloud Platform (OpenStack)**
  A Participant of 973 Project   *Sept.2012 – Aug.2014*

  --- Focus on users', servers' and virtual machines' authentication in cloud platform.
  --- Analyze the data mining algorithms and clustering algorithms for detecting malicious behaviors in cloud platform.
  --- Implement part of the system using php and python in web platform.

- **Secure File System: A Secure File Management System based on Certificate Authority Using USB key**
  Project Leader   *Aug.2013 – Aug.2014*

  --- Focus on a new approach which provides secure file storage, sharing and digital audit for file operating.
  --- Design an efficient and secure authentication approach based on digital certificates using usb key.
  --- Implement an available demo using C and C# in windows .net framework.

- **Secure Transmission System: A Secure Transmission System based on Received Signal Strength**
  Project Leader   *Sept.2011 – Aug.2012*

    --- Focus on a new approach which provides secure transmission.
    --- Design a secure transmission method based on wireless channels' received signal strength.
    --- Implement an available demo using java on android platform.

Teaching Experience

- **Design and Innovation Project (NTU): Effective Phone Guardian for Android Platform (Winning Project)**
  Project assistant (8 students)   *Aug.2015 – Nov.2015*

    --- Propose a universal scheme to address phone theft in all places.
    --- Focus on finding the lost phone by give some warning through monitoring the distance.
    --- Implementation an available demo in android platform.

- **Final Year Project (NTU): Location privacy**
  Project assistant (1 student)   *Feb.2015 – Oct.2015*

    --- Based on differential privacy to achieve location privacy
    --- Proposed a secure scheme for location based service and prove the security of the scheme.
    --- Implementation an available demo in android platform.

- **Final Year Project (NTU): Secure Online Bank**
  Project assistant (1 student)   *Feb.2015 – Jun.2015*

    --- Based on Bluetooth protocol to achieve communication between two phones.
    --- Design an authentication protocol between two phones.
    --- Implementation an available demo in android platform.

Awards and Honors

- **IEEE ICCC'15 Best Paper Award**
- **The 1st-class Prize for National Undergraduate Electronic Design Contest in Information Security, 2012.**
- Excellent Student in Deans Honors List with 1st-class Scholarship, 2010, 2012, 2013, and 2015.
- National 1st-class Scholarship, 2014.

Technical Skills

- **Languages:** C, Java, C#, Php, Matlab, Python, JavaScript, SQL.
- **Technologies:** Web Development, Desktop Programming, Android Programming.
- **Development Platform:** Windows, Linux, Android.
- **Applications:** Visual Studio, Eclipse, Matlab, Sublime Text2.
- **Algorithms:** Cryptographic algorithms, DES, AES, RSA, Elgamal, Paillier, etc.
- **Library:** Openssl, BouncyCastle.

Research Publications

- Hui Zhu, **Cheng Huang**, Rongxing Lu, and Hui Li, "Modelling Information Dissemination under Privacy Concerns in Social Media", Accepted by Physica A, 2015.
- **Cheng Huang,** Rongxing Lu, Hui Zhu, Jun Shao, and Xiaodong Lin, "FSSR: Fine-Grained EHRs Sharing via Similarity-Based Recommendation in Cloud-Assisted eHealthcare System", submitted to ACM AsiaCCS'16, 2015.
- **Cheng Huang**, Rongxing Lu, Hui Zhu, Jun Shao, Abdulrahman Alamer, and Xiaodong Lin, "EPPD: Efficient and Privacy-Preserving Proximity Testing with Differential Privacy Techniques", submitted to IEEE ICC'16, 2015.
- **Cheng Huang**, and Rongxing Lu, "EFPA: Efficient and Flexible Privacy-Preserving Mining of Association Rule in Cloud", published in IEEE ICCC'15 **(Best Paper Award)**, 2015.
- Lichun Li, Rongxing Lu, and **Cheng Huang**, "EPLQ: Efficient Privacy-Preserving Location-based Query over Outsourced Data", published in IEEE Journal of Internet of Things (IoT), 2015.
- Hui Zhu, Rongxing Lu, **Cheng Huang**, Le Chen, and Hui Li, "EPQ: An Efficient Privacy-Preserving Location Based Services Query Scheme in Outsourced Cloud", accepted by IEEE Transaction on Vehicular Technology (TVT), 2015.
- Guoming Wang, Rongxing Lu, and **Cheng Huang**, "PGuide: An Efficient and Privacy-Preserving Smartphone-Based Pre-Clinical Guidance Scheme", accepted by IEEE Globecom'15, 2015.
- Rongxing Lu, Khalid Alharbi, Xiaodong Lin, and **Cheng Huang**, "A Novel Privacy-Preserving Set Aggregation Scheme for Smart Grid Communications", accepted by IEEE Globecom'15, 2015.
- Guoming Wang, Rongxing Lu, and **Cheng Huang**, "PSLP: Privacy-Preserving Single-Layer Perceptron Learning for e-Healthcare", accepted by IEEE ICICS'15, 2015.
- Hui Zhu, **Cheng Huang**, and Hui Li, "Information Diffusion Model Based on Privacy Setting in Online Social Networking Services", published in The Computer Journal, 2014.
- Hui Zhu, **Cheng Huang**, and Hui Li, "MPPM: Malware Propagation and Prevention Model in Online SNS", published in ICC'14 workshop on SNFC, 2014.
- Chang Xu, Rongxing Lu, Huaxiong Wang, Liehuang Zhu, **Cheng Huang** and Yonggang Zhang, "TJET: Ternary Join-Exit-Tree Based Dynamic Key Management for Vehicle Platooning", submitted to IEEE Transactions on Dependable and Secure Computing (TDSC), 2015.

Source code and Implementation

Some source code and implementations can be downloaded at
http://www3.ntu.edu.sg/home/rxlu/project/index.htm.