# Curriculum Vitae

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**Xiali** **(Sharon) Hei**

School of Computing and Informatics

Ray P. Authement College of Sciences

University of Louisiana at Lafayette

301 E. Lewis Street, Lafayette, LA 70503

Cell: (001) 267-303-8811

E-mail: [starindark001@gmail.com](mailto:starindark001@gmail.com)

Website: <http://www.xialihei.com>

Google scholar: <https://scholar.google.com/citations?user=PzflF_cAAAAJ&hl=en>

**Education**

03/2011-05/2014 Ph.D. Temple Univ., Philadelphia, USA.

Advisor: Dr. Xiaojiang Du, Co-advisor: Dr. Shan Lin (**Stony Brook University**).

Committee member: **Dr. Jie Wu (a previous NSF director)** and Dr. Li Bai.

09/2009–02/2011 Graduate student. Temple Univ., Philadelphia, USA.

09/2002–07/2005 M.S of Software Engineering. Tsinghua Univ., Beijing, China.

Advisor: Prof. [Kwok-Yan Lam](http://211.151.65.104/coremail/XPS/mbox/viewmail.jsp?offset=6&mid=1%3a1tbiAQCpg0jcbd0rZgAAsC&scheduledate=&sid=CAYoNHFFLphOcJtwIiFFVyvfLHvEueBF&fid=1).

09/1998–07/2002 B.E. in Information Engineering. Xi’an JiaoTong Univ., Xi’an, Shaanxi, China

**Awards**

08/2014 ACM 2014 MobiHoc Best Poster Runner-up Award

12/2013 Dissertation Completion Fellowship

04/2013 The Bronze Award Best Graduate Project in Future of Computing Competition

04/2013 IEEE INFOCOM student travel grant

12/2010 IEEE GLOBECOM student travel grant

**Grants**

06/1/2016-05/31/2018 **NSF CNS-1566166** Project title: CRII: SaTC: CPS: RUI: Cyber-Physical System Security in Implantable Insulin Injection Systems. Amount: $174,995.

11/1/2015-10/31/2017 State of Delaware Federal Research and Development Matching Grant Program. Project title: A human-aware energy efficient security framework for memory-restrained Internet of Everything Devices. Amount: $99,997.

04/1/2016-05/30/2016 Professional Development Fund, $3,500.

**Academic Experiences**

08/2017-present Department of

08/2015-08/2017 Department of Computer and Information Sciences at Delaware State University, USA, **Tenure Track Assistant Professor**

08/2014-06/2015 Department of Computer Science and Information Technologies at Frostburg State University, USA, **Tenure Track Assistant Professor**

09/2011- 08/2014 Department of Computer Information and Sciences at Temple University, USA, Lab teaching assistant

07/2005-09/2007 Department of Software Engineering at Guangdong University of Finance & Economics, China, Assistant Professor

09/2007-09/2009 Department of Software Engineering at Guangdong University of Finance & Economics, China, Lecturer

**Courses Taught:**

TA:

CIS 0823: Math for a Digital World Fall 2011

CIS 3329: Network Architectures Spring 2012

CIS 2109: Database Management Systems Fall 2012

CIS 2107: Computer Systems and Low Level Programming Spring 2013

Instructor:

Advanced Computer Network Spring 2016

Topic: Ethical Hacking Spring 2016

Advanced Operating System Fall 2015 & Fall 2016

Operating System Fall 2015 & Fall 2016

Computer & Network Forensics I Spring 2015

Hacking Exposed & Incident Response Spring 2015

Introduction to Computer Science……………………………. Spring 2015

Computer Application Fundamentals Spring 007 & Fall 2009

Software Engineering Spring 2008

An Introduction to Databases Spring 2008

C language Programming Fall 2005

An Introduction to Computers Fall 2006

An Introduction to Computer Sciences Fall 2006

Computer Networks Spring 2007

Information Security and Secrecy Spring 2006

**Research interests**

Security issues in medical devices, **cyber physical systems**, mobile security, data privacy and security, vulnerabilities analysis in the Android system, cryptosystem, cloud computing, IoT security.

**Main Publications**

**Conference:**

1. Yazhou Tu, Insup Lee, Zhiqiang Lin, **Xiali Hei,** and Jian Zhao**,** Carousel: Adaptive Acoustic Attacks on MEMS Gyroscopes in Smartphones and Beyond. Submitted to ACM CCS 2017.
2. Lizhou Yuan, **Xiali Hei**, Yazhou Tu, Jian Zhao, and Xiaojiang Du, A Voice Print based Access Control Scheme for Wireless Insulin Pump System. Will be submitted to IEEE INFOCOM 2017.
3. **Xiali Hei,** Binheng Song, and Caijin Ling. SHipher: Families of Block Ciphers based on customized operator. Accepted by IEEE ICC **2017**.
4. Kam Kong, **Xiali Hei**, Caijin Ling, Mohsen Guizani, and Hui Cao. A Countermeasure Against Face-Spoofing Attacks Using Interaction Video Framework. Published at *2017 IEEE 3rd Information Technology and Mechatronics Engineering Conference (ITOEC)*.
5. Caijin Ling**, Xiali Hei,** Kam Kong, Michael Peays, and Mohsen Guizani. You Cannot Sense My PINs: A Side Channel Attack Deterrent Solution for Touch-enabled Devices. Published by IEEE GLOBECOM **2016**.
6. Jian Zhao and **Xiali Hei**, Magnetic communication based secure channel for wireless insulin pump, Book chapter, **2016**.
7. Xunyu Pan, Timothy J. Cross, Liangliang Xiao, **Xiali Hei**, Musical examination to bridge audio data and sheet music. In Proc. of SPIE/IS&T Electronic Imaging Francisco’15, pp. 94080J-94080J-8, **2015**.
8. Gang Wang, Wenming Li and **Xiali Hei**. Energy-Aware Real-Time Scheduling on Heterogeneous Multi-Processor. In Proc. of the 49th Annual Conference on Information Systems and Sciences, pp. 1-7, **2015**.
9. **Xiali Hei,** Xiaojiang Du, and Shan Lin. Poster: Near Field Communication based Access Control for Wireless Medical Devices. In Proc. of **ACM MOBIHOC’14,** pp. 423-424, **2014.**
10. **Xiali Hei** and Shan Lin, Multi-Part File Encryption for Electronic Health Records Cloud. In Proc. of the 4th ACM MobiHoc Workshop on Pervasive Wireless Healthcare (**MobileHealth**), **2014**.
11. **Xiali Hei**, Xiaojiang Du, Shan Lin and Insup Lee. PIPAC: Patient Infusion Pattern based Access Control Scheme for Wireless Insulin Pump System. In Proc. of **IEEE INFOCOM’13**, pp 3030-3038, **2013**.
12. **Xiali Hei**, Xiaojiang Du, and Shan Lin, Two Vulnerabilities in Android OS Kernel, In Proc. of **IEEE ICC’13**, pp. 6123-6127, **2013**.
13. **Xiali Hei**, Xiaojiang Du, and Binheng Song. Two matrices for Blakley’s Secret Sharing Scheme. In Proc. of **IEEE ICC’12**, pp. 810-814, **2012.**
14. **Xiali Hei**, Xiaojiang Du, and Binheng Song. [A Distributed Login Framework for Semi-structured Peer-to-Peer Networks](http://edas.info/showPaper.php?m=1569509047). In Proc. of **IEEE ICC’12**, pp. 1331-1335, **2012**.
15. **Xiali Hei** and Xiaojiang Du. Biometric-based Two-level Secure Access Control for Implantable Medical Devices during Emergencies. In Proc. of **IEEEINFOCOM’11 (mini-conference)**, pp 346-350, **2011**.
16. **Xiali Hei**, Xiaojiang Du, Jie Wu, and Fei Hu. [Defending Resource Depletion Attacks on Implantable Medical Devices](http://edas.info/showPaper.php?m=1569302283). In Proc. of **IEEE GLOBECOM’10**, pp. 1-5, **2010**.
17. **Xiali**, **Hei**, Yiyuan Huang, [Kwok-Yan Lam](http://211.151.65.104/coremail/XPS/mbox/viewmail.jsp?offset=6&mid=1%3a1tbiAQCpg0jcbd0rZgAAsC&scheduledate=&sid=CAYoNHFFLphOcJtwIiFFVyvfLHvEueBF&fid=1). Enhance Network Intrusion Detection System with honeynet. Preproceeding of WISA **2004**, Seoul, Korean.

**Journal:**

1. Hui Cao, Yajie Yu, Yan Zhou and **Xiali Hei,** Double Outlyingness Analysis in Quantitative Spectral Calibration: Implicit Detection and Intuitive Categorization of Outliers, Chemometrics and Intelligent Laboratory Systems,<http://dx.doi.org/10.1016/j.chemolab.2017.04.004>, **2017**.
2. Shiliang Zhang, Hui Cao, Yanbin Zhang, Lixin Jia, Zonglin Ye and **Xiali Hei**, Data-driven optimization Framework for Nonlinear Model Predictive Control, Mathematical Problems in Engineering, **2017**.
3. **Xiali Hei,** Xiaojiang Du, Shan Lin, Insup Lee and Oleg Sokolsky. Patient Infusion Pattern bassed Access Control Schemes for Wireless Insulin Pump System. **IEEE Transaction on Transactions on Parallel and Distributed Systems,** Vol.26, No.11, pp.3108-3121, **2015**.
4. **Xiali Hei,** Binheng Song. A bio-inspired novel universal hash function. **Work-in-Process**.

**21 Xiali Hei,** Chunliu Zheng. Security Deficiencies of SET in Electronic commerce. *Journal of Chinese Journal of Communication and Information Security*.8, e152, 143-145 (**2006**). (In Chinese)

**Book:**

**22** **Xiali Hei** and Xiaojiang Du. Emerging Security Issues in Wireless Implantable Medical Devices. **Springer, 2013, ISBN 978-1-4614-7152-3. On the list of** [Best Readings in Communications and Information Systems Security.](http://www.comsoc.org/best-readings/communications-and-information-systems-security)

**PhD Dissertation.**

**23 Xiali Hei.** Security Issues and Defense Methods for Wireless Medical Devices**. Published in ProQuest. 2014.**

**TPC members:**

1. **IEEE GLOBECOM 2013 & 2014 & 2015&2016&2017**
2. **IEEE CyperC 2014&2015&2016**
3. **IEEE ICC 2014 &2015&2016&2017**
4. **IEEE ICCVE 2013&2014&2015&2016**
5. **IEEE ICACCI 2014**
6. **IEEE WASA 2016 & 2017**

**Assistant managing editor:**

**1 Journal of Information Systems and Technology Management for Specialized Research)**

**Guest editor:**

**1 Security Analytics and Intelligence for Cyber Physical Systems**

**Reviewers:**

**1 IEEE Transactions on Parallel and Distributed Systems**

**2 IEEE Communication Letters**

**3 International Journal of Ad Hoc and Ubiquitous Computing**

**4 Wiley Journal of Security and Communication Networks**