IEEE Symposium on Privacy-Aware Computing

Wednesday, September 26, 2018 - Friday, September 28, 2018

Science & Engineering Hall
The George Washington University
800 22nd Street, NW, Washington, DC 20052

http://sopac-conference.info/
inbox@sopac-conference.info

Organized by
Xiuzhen (Susan) Cheng, General Chair
Joseph (Joe) Valacich, Program Co-Chair
Nan Zhang, Program Co-Chair
Welcome

It is our great pleasure to welcome you to PAC 2018, the Second IEEE Symposium on Privacy-Aware Computing (PAC), held in Washington DC from Wednesday, September 26, to Friday, September 28.

PAC is sponsored by IEEE Computer Society via the Technical Committee on Security and Privacy (TCSP), and is a premier conference covering all aspects of "making computing privacy-aware". Its objective is to provide a unique and dedicated platform for researchers and practitioners to exchange ideas and demonstrate the most recent advances in research and development on privacy-aware computing. PAC 2018 features an exciting program consisting of one HotPrivacy Day, five sessions of invited talks and paper presentations, one keynote speech, one panel, and one poster/demo session.

On behalf of the organizing committee, we welcome you to Washington DC. We hope that you enjoy the beautiful September in the nation's capital, and find the experience of attending PAC 2018 valuable and memorable.

Xiuzhen (Susan) Cheng, General Chair
Joseph (Joe) Valacich, Program Co-Chair
Nan Zhang, Program Co-Chair
## Wednesday, September 26 [HotPrivacy Day]

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am - 8am</td>
<td>Breakfast</td>
<td></td>
</tr>
<tr>
<td>8:00 am - 8:15 am</td>
<td>Opening</td>
<td><strong>Xiuzhen Cheng</strong>, General Chair</td>
</tr>
</tbody>
</table>
| 8:15 am - 10:15 am | Session 1                     | Does Government Surveillance Give Twitter the Chills? **Laura Brandimarte**, University of Arizona  
Security and Privacy Protections in the Internet of Things, **Yuan Tian**, University of Virginia  
Image Pixelization with Differential Privacy, **Liyue Fan**, University at Albany  
To Use or Not to Use Sensitive Data: The Case of Predicting Inpatient Admissions from the Emergency Department, **Idris Adjerid**, Virginia Tech |
| 10:15am - 10:30am | Coffee break                 |                                                                        |
| 10:30am - 12:00pm | Session 2                     | Privacy Preserving Smart Meter Streaming against Information Leakage of Appliance Status, **Yuan Hong**, Illinois Institute of Technology  
Cryptographically Protected Search Beyond SQL, **Arkady Yerukhimovich**, The George Washington University  
Privacy-Preserving Classification for IoT Applications, **Fengjun Li**, The University of Kansas |
| 12:00 am - 1:30 pm | Lunch break                  |                                                                        |
| 1:30 pm - 3:30 pm | Session 3                     | Collective Privacy: Online Communication of The Social Activist Groups, **Haiyan Jia**, Lehigh University  
Web Tracking: Attack and Defense, **Yinzhi Cao**, Johns Hopkins University  
Bystander Privacy in Mobile Photographing: An Interaction-Free Approach, **Qinghua Li**, University of Arkansas  
AttriGuard: A Practical Defense Against Attribute Inference Attacks via Adversarial Machine Learning **Neil Gong**, Iowa State University |
| 3:30 pm - 3:45 pm | Coffee & Networking         |                                                                        |
| 3:45 pm - 5:15 pm | Session 4                     | Checking Security Checks in OS Kernels, **Kangjie Lu**, University of Minnesota  
Privacy in Geo-Social Networks, **Andreas Züfle**, George Mason University  
Local Private Hypothesis Testing: Chi-Square Tests, **Marco Gaboardi**, University at Buffalo, SUNY |
| 6:30pm          | Dinner                        |                                                                        |

------ end of HotPrivacy Day ------
### Thursday, September 27 [Day 1]

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am - 9am</td>
<td>Breakfast</td>
<td></td>
</tr>
<tr>
<td>9am - 9:15am</td>
<td>Opening</td>
<td><em>Xiuzhen Cheng</em>, General Chair; <em>Joe Valacich</em>, Program Co-Chair</td>
</tr>
<tr>
<td>9:15am - 10:15am</td>
<td>Keynote</td>
<td><em>Jeremy Epstein</em>, National Science Foundation</td>
</tr>
<tr>
<td>10:15am - 10:30am</td>
<td>Break</td>
<td></td>
</tr>
</tbody>
</table>
| 10:30am - 12pm | Research 1            | The Blurring of Non-essential Notifications and Critical Security Warnings: Examining the Problem of Generalization in the Brain  
*Anthony Vance*, Temple University |
|               |                        | Privacy, Polarization, and Passage of Divisive Laws                         |
|               |                        | *Benjamin Johnson*, Technical University of Munich; Paul Laskowski, UC Berkeley |
|               |                        | PhotoSafer: Content-based Context-aware Private Photo Protection for Smartphones  
*Ang Li*, David Darling, Qinghua Li, University of Arkansas |
| 12pm - 1:30pm | Lunch                  |                                                                             |
| 1:30pm - 3pm  | Research 2             | An Examination of Countermeasures in Human-Computer Interaction-Based Deception Research  
*Joe Valacich*, University of Arizona |
|               |                        | Epsilon Voting: Mechanism Design for Parameter Selection in Differential Privacy  
*Nitin Kohli*, Paul Laskowski, UC Berkeley School of Information |
|               |                        | The Potential for User-Tailored Privacy on Facebook                         |
|               |                        | *Moses Namara*, Henry Sloan, Priyanka Jaiswal, Bart P. Knijnenburg, Clemson University |
| 3pm - 4pm     | Panel                  | Emerging Privacy Challenges Faced by Our Changing Society  
*Neil Gong*, Iowa State University (moderator), *Yinzhi Cao*, John Hopkins University, *Kartik Nayak*, VMWare Research/Duke University, *Yuan Tian*, University of Virginia |
| 4pm - 4:15pm  | Break                  |                                                                             |
Thursday, September 27 [Day 1]

4:15pm - 5:45pm  Research 3  Threat Detection Through Analyzing Human-Computer Interaction Data  
Jeff Jenkins, Brigham Young University

BigBing: Privacy-Preserving Cloud-Based Malware Classification Service  
Yunus Kucuk, Nikhil Patil, Zhan Shu, Guanhua Yan, Binghamton University

Efficient Privacy-Preserving Outsourcing of Large-Scale Geometric Programming  
Wei Bao, Qinghua Li, University of Arkansas

6pm  Dinner

------- end of Day 1’s program -------

The following Posters will be displayed in the atrium throughout the day:

- Privacy-Preserving POI Recommendation Using Nonnegative Matrix Factorization (Xiwei Wang, Hao Yang & Kiho Lim)
- A Reputation Management Framework for MANETs (Shi-wen Wang & Hui Xia)
- Malware Variants Detection Using Behavior Destructive Features (Yongle Chen, Bingchu Jin, Dan Yu & Junjie Chen)
- Utility Analysis of Different Anonymization Methods of Social Networks (Cheng Zhang, Honglu Jiang, Jiguo Yu, Zhiguo Wan & Shengling Wang)
- Backward Thinking of Routing with High Uncertainties: Causal Entropy based Routing in Multi-agent Networks (Zhonghu Xu, Kai Xing, Xuefeng Liu & Jiannong Cao)
- Cryptocurrency transaction verification signature scheme based on iris verification (Yunhua He, He Li, Xiang Lu & Ke Xiao)
- A Novel Attack Architecture for Device-Identity Association (Yinhao Xiao, Yizhen Jia, Xiuzhen Cheng, Dongxiao Yu, Feng Li & Shengling Wang)
- NormaChain: A Blockchain-based Normalized Autonomous Transaction Settlement System for IoT-based E-commerce (Chunchi Liu, Yinhao Xiao, Qin Hu, Xiuzhen Cheng & Shengling Wang)
- Optimal Strategy of Proof of Stake Consensus (Zhihui Zhao, Hong Li, Hongsong Zhu, Limin Sun)
- Routing for Reducing Information Leakage Probability in Mobile SocialNetworks (Xiaoshuang Xing, Gaofei Sun, Xiangping Qin)
- Privacy Preserving Scheme for Location Based Services Using Cryptographic Approach (Yuwen Pu, Jin Luo, Ying Wang, Chunqiang Hu, Yan Huo, Jiong Zhang)
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am - 9am</td>
<td>Breakfast</td>
<td></td>
</tr>
<tr>
<td>9am - 10:30am</td>
<td>Research 4</td>
<td>Informational Privacy, A Right to Explanation, and Interpretable AI</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Tae Wan Kim</strong>, Bryan Routledge, Carnegie Mellon University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Privacy-Preserving Data Collection in Context-Aware Applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Wei Li</strong>, Georgia State University; Chunqiang Hu, Chongqing University; Tianyi Song, Marshall University; Jiguo Yu, Qufu Normal University; Xiaoshuang Xing, Changshu Institute of Technology; Zhipeng Cai, Georgia State University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deriving privacy settings for location sharing: Are context factors always the best choice? <strong>Frederic Raber</strong>, German Research Centre for Artificial Intelligence; Antonio Krueger, Saarland University</td>
</tr>
<tr>
<td>10:30am - 11am</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11am - 12:30pm</td>
<td>Research 5</td>
<td>Examining the Interplay Between Privacy and Trust in Complex IT Ecosystems</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Ryan T. Wright</strong>, University of Virginia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Privacy Enabled Crowdsourced Transmitter Localization Using Adjusted Measurements</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Harsimran Singh</strong>, Shamik Sarkar, Anuj Dimri, Aditya Bhaskara, Neal Patwari, Sneha Kasera, University of Utah; Samuel Ramirez, Kurt Derr, Idaho National Labs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A Cloud-based Secure and Privacy-Preserving Clustering Analysis of Infectious Disease</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Jianqing Liu</strong>, Yaodan Hu, University of Florida; Hao Yue, San Francisco State University; Yanmin Gong, Oklahoma State University; Yuguang Fang, University of Florida</td>
</tr>
<tr>
<td>12:30pm - 12:45pm</td>
<td>Conclusion</td>
<td></td>
</tr>
</tbody>
</table>
Organization

General Chair
Xiuzhen Cheng
George Washington University, USA

Program Co-Chairs
Joseph (Joe) Valacich
University of Arizona, USA
Nan Zhang
American University, USA

Finance Chair
Qun Li
College of William and Mary, USA

Panel Chair
Zhenkai Liang
National University of Singapore, Singapore

Publication Chair
Wei Li
Georgia State University, USA

Publicity Co-Chairs
Sriram Chellappan
University of South Florida, USA
Haiyan Jia
Lehigh University, USA
Jie Gu

Local Arrangement Chair
Tian Lan
George Washington University, USA

Web Chair
Zhipeng Cai
Georgia State University, USA

Program Committee
Alan Dennis
Indiana University Bloomington, USA
Anthony Vance
Temple University, USA
Berkay Celik
Pennsylvania State University, USA
Guevara Noubir
Northeastern University, USA
Han Li
University of New Mexico, USA
Heng Xu
American University, USA
Jeff Jenkins
Brigham Young University, USA
Jingguo Wang
University of Texas Arlington, USA
Junshan Zhang
Arizona State University, USA
Kennedy Njenga
University of Johannesburg, South Africa
Kun Sun
George Mason University, USA
Mark Keith

Brigham Young University, USA
Matthew Wright
Rochester Institute of Technology, USA
Ryan Henry
Indiana University Bloomington, USA
Yong Guan
Iowa State University, USA
Zhipeng Cai
Georgia State University, USA