XUHUI (TRACY) CHEN

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College of Aeronautics and Engineering
Kent State University, Kent, Ohio 44240

RESEARCH INTERESTS

Security and privacy in big data analytics (machine learning, cloud computing), system design, with applications in the Internet of Things (IoT), smart health, cyber-physical systems, wireless networks, etc.

TEACHING INTERESTS

Machine learning, data mining, cryptography, big data analytics, and wireless communications.

EDUCATION

- **Ph.D.** in Computer Engineering, GPA: 4.0/4.0 01/2016 - 08/2019
  Case Western Reserve University, Cleveland, OH, USA
  Advisor: Prof. Pan Li
- **M.S.** in Electrical and Computer Engineering, GPA: 4.0/4.0 08/2013 - 12/2015
  Mississippi State University, Mississippi State, MS, USA
  Advisor: Prof. Pan Li
- **B.S.** in Information Engineering, GPA: 87/100 09/2008 - 07/2012
  Xidian University, Xi'an, Shaanxi, China
  Advisor: Prof. Baoming Bai

RESEARCH EXPERIENCES

- **Assistant Professor**, 08/2019 - present
  College of Aeronautics and Engineering, Kent State University
- **Research Assistant**, 01/2016 - 08/2019
  Department of Electrical Engineering and Computer Science, Case Western Reserve University
- **Research Assistant**, 08/2013 - 12/2015
  Department of Electrical and Computer Engineering, Mississippi State University

TEACHING EXPERIENCES

- **Instructor**, Kent State University
  TECH 60001 Quantitative Methods in Technology Fall, 2019
- **Guest Lecturer**, Case Western Reserve University
  ECE 414 Wireless Communication Fall, 2017 and Fall, 2018

- **Teaching Assistant**, Case Western Reserve University
  EECS 340 Algorithms — Spring, 2019
  EECS 414 Wireless Communication — Fall, 2017
  EECS 313 Signal Processing — Spring, 2017
  EECS 315 Digital Systems Design — Spring, 2016

- **Teaching Assistant**, Mississippi State University
  ECE 3183 Electric Engineering Systems — Fall, 2013 and Spring, 2014

PUBLICATIONS

Conference Papers

- Jinlong Ji, **Xuhui Chen**, Qianlong Wang, Lixing Yu, and Pan Li, "*Learning to Learn Gradient Aggregation by Gradient Descent*," the 28th International Joint Conference on Artificial Intelligence (IJCAI'19), Macao, China, August 2019. (Acceptance Ratio = 850/4752 = 17.9%)
- **Xuhui Chen**, Jinlong Ji, Changqing Luo, Weixian Liao, and Pan Li, "*When Machine Learning Meets Blockchain: A Decentralized, Privacy-preserving, and Secure Design*," IEEE International Conference on Big Data (BigData'18), Seattle, WA, December, 2018. (Acceptance Ratio = 99/518 = 19.1%)
- Weixian Liao, Yifan Guo, **Xuhui Chen**, and Pan Li, "*A Unified Unsupervised Gaussian Mixture Variational Autoencoder for High Dimensional Outlier Detection*," IEEE International Conference on Big Data (BigData'18), Seattle, WA, December, 2018. (Acceptance Ratio = 99/518 = 19.1%)
- **Xuhui Chen**, Jinlong Ji, Lixing Yu, Changqing Luo, and Pan Li, "*SecureNets: Secure Inference of Deep Neural Networks on an Untrusted Cloud*," the 10th Asian Conference on Machine Learning (ACML'18), Beijing, China, November, 2018. (Acceptance Ratio = 57/230 = 24.8%)
- **Xuhui Chen**, Jinlong Ji, Tianxi Ji, and Pan Li,"*Cost-Sensitive Deep Active Learning for Epileptic Seizure Detection*," the 9th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB'18), Washington, DC, August, 2018.
- Jinlong Ji, Changqing Luo, **Xuhui Chen**, Lixing Yu, and Pan Li, "*Cross-Domain Sentiment Classification via A Bifurcation-LSTM*," the 22nd Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'18), June, 2018. (Acceptance Ratio = 59 (long papers)/590 = 10%, Best Application Award)
- Jinlong Ji, **Xuhui Chen**, Changqing Luo, and Pan Li, "*A Deep Multi-task Learning Approach for ECG Data Analysis*," IEEE Conference on Biomedical and Health Informatics (BHI'18), Las Vegas, NV, March, 2018.
- **Xuhui Chen**, Jinlong Ji, Kenneth A. Loparo, and Pan Li, "*Real-time Personalized Cardiac Arrhythmia Detection and Diagnosis: A Cloud Computing Architecture*," IEEE Conference on Biomedical and Health Informatics (BHI'17), Orlando, FL, February, 2017.
- Sergio Salinas, Changqing Luo, **Xuhui Chen**, and Pan Li, "*Efficient Secure Outsourcing of Large-scale Linear Systems of Equations*," IEEE International Conference on Computer Communications (INFOCOM'15), Hong Kong, China, April, 2015. (Acceptance ratio = 316/1640 = 19.3%)

Journal Papers

- Changqing Luo, Jinlong Ji, **Xuhui Chen**, Ming Li, Lawrence T. Yang, and Pan Li, "*Parallel Secure Outsourcing of Large-scale Nonlinearly Constrained Nonlinear Programming Problems*," to appear in IEEE Transactions on Big Data.
- Changqing Luo, Jinlong Ji, Qianlong Wang, **Xuhui Chen**, and Pan Li, "*Channel State Information Prediction in 5G Wireless Communications: A Deep Learning Approach*," to appear in IEEE Transactions on Network Science and Engineering.
- Sergio Salinas, Changqing Luo, **Xuhui Chen**, Weixian Liao, and Pan Li, "*Efficient Secure Outsourcing of Large-scale Sparse Linear Systems of Equations*," IEEE Transactions on Big Data, Vol. 4, No. 1, pp. 26-39, January-March 2018.
- Ming Li, Weixian Liao, **Xuhui Chen**, Jinyuan Sun, Xiaoxia Huang, and Pan Li, "*Economic-Robust Transmission Opportunity Auction for D2D Communications in Cognitive Mesh Assisted Cellular Networks*," IEEE Transactions on Mobile Computing, Vol. 17, No. 8, pp. 1806-1819, August 2018.
- Sergio Salinas, **Xuhui Chen**, Jinlong Ji, and Pan Li, "*A Tutorial on Secure Outsourcing of Large-scale Computations for Big Data*," IEEE Access, 2016.

Under Review/Preparation

- **Xuhui Chen**, Jinlong Ji, Tianxi Ji, Xufei Wang, Weixian Liao, and Pan Li, "*Health-Chain: Privacy-preserving Cross-institution Healthcare Predictive Model Framework via Blockchain*," submitted to 2019 IEEE International Conference on Biomedical and Health Informatics.
- **Xuhui Chen**, Jinlong Ji, Sergio Salinas, and Pan Li, "*Secure Outsourcing of Deep Active Learning in the IoT: from both Sample Selection and Model Updating Perspectives*," submitted to IEEE Internet of Things Journal.
- **Xuhui Chen**, Jinlong Ji, Qianlong Wang, Tianxi Ji, and Pan Li,"*Blockchain-based Abstract Information-Centric Networking for Intelligent Internet-of-Things*," submitted to IEEE Wireless Communications.
- **Xuhui Chen**, Qianlong Wang, Yifan Guo, and Pan Li,"*EG-Chain: A Private and Secure Decentralized Machine Learning Framework via ElGamal and Blockchain*," in preparation.
- **Xuhui Chen**, Jinlong Ji, Changqing Luo, Sergio Salinas, and Pan Li, "*A Deep Multi-task Learning Approach for Bioelectrical Signal Analysis*," in preparation.

HONORS AND AWARDS

- Bridge funding scholarship, Case Western Reserve Univerisity 2018
- Best Application Paper Award, PAKDD'18 2018
- 2nd Place in IEEE Big Data Analytics Competition at IEEE BHI 2017
- Certificate of the CWRU Future Faculty Preparation 2017
- National Scholarship, the Ministry of Education of P. R. China 2011
- Special Scholarship (1 out of 161), Xidian University 2011

PROFESSIONAL ACTIVITIES

- **Conference TPC member:**
  International Conference on Computing, Networking and Communications: Wireless Networks (ICNC'19'20)
  The 14th IEEE International Conference on Green Computing and Communications (GreenCom'19)
  The First Workshop on Security and Privacy on Blockchain for Big Data Applications in conjunction with 2019 IEEE International Conference on Big Data (SPB) 2019

- **Reviewer for journals:**
  IEEE Wireless Communications Letters
  IEEE Journal of Journal of Biomedical and Health Informatics
  IEEE Transactions on Big Data
  IEEE Journal on Selected Areas in Communications
  IEEE Transactions on Vehicular Technology
  ELSEVIER Computers & Security

- **Reviewer for conferences:**
  ICNC'19'20, MobiQuitous'19, GreenCom'19, ICIT'15