

# Chunyi Peng

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## Research Interests

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My general research areas are on **Mobile Networking (4G/5G)**, **Mobile Network Security**, **Mobile Sensing and Computing**. The current problem space I am working is to innovate mobile network access in 4G/5G and beyond to support emerging demands on new functionality, performance, reliability and security. I am interested in exploiting and developing a multi-disciplinary solution that incorporates machine learning, data science, distributed systems, computing theory, cybersecurity to mobile networking.

## Education

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<b>University of California, Los Angeles</b> <i>Ph.D, Computer Science</i> Advisor · Prof. Songwu Lu	<b>Los Angeles, USA</b> 2009–2013
<b>Tsinghua University</b> <i>M.E, Automation (with highest honors)</i> Advisor · Prof. Xianda Zhang	<b>Beijing, China</b> 2002–2005
<b>Tsinghua University</b> <i>B.E, Automation (with highest honors both at Tsinghua university and in Beijing)</i>	<b>Beijing, China</b> 1998–2002

## Appointments

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<b>Computer Science, Purdue University</b> <i>Assistant Professor</i>	<b>West Lafayette, USA</b> 2017–now
<b>Computer Science Engineering, Ohio State University</b> <i>Assistant Professor</i>	<b>Columbus, USA</b> 2013–2017
<b>Microsoft Research</b> <i>Research Intern on Mobility &amp; Networking Group</i>	<b>Redmond, USA</b> 2013
<b>IBM TJ Watson Research Center</b> <i>Research Intern on Cloud Computing and Wireless Networking Groups</i>	<b>Yorktown Heights, USA</b> 2012, 2011
<b>Microsoft Research Asia</b> <i>Associate/Assistant Researcher on Wireless Networking Group</i>	<b>Beijing, China</b> 2005–2009
<b>T3G Ltd.,</b> <i>Engineer on 3G TD-SCDMA chipset development</i>	<b>Beijing, China</b> 2005

## Honors and Awards

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NSF CAREER Award · 2018  
Best Paper Award · IEEE CNS · 2018  
IEEE Senior Member · 2017  
Best Community Paper Award · ACM MobiCom · 2017  
Best Community Paper Award · ACM MobiCom · 2016  
Northrup-Grumman Outstanding Graduate Student Award · UCLA · 2013  
IBM Ph.D. Fellowship Award · IBM · 2012

UCLA Fellowship with Chancellor's Prize · UCLA · 2009-2010  
Best Demo Award · ACM MobiSys · 2008  
Best Demo Award · ACM MobiSys · 2007  
Best Demo Award · ACM SenSys · 2007

## Grants and Gifts

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**NSF CAREER:** Amplifying Intelligence in Mobile Networked Systems · PI (sole) · \$554,995 · 2018 – 2023  
**NSF-NeTS-Small:** Collaborative Research: Configuration Management for Mobility Support in Cellular Networks · PI (lead) · \$230,212 (total: \$459,990) · 2015 – 2019  
**NSF-SaTC-Small:** Collaborative Research: Cellular Network Services in Peril: A Perspective on Control-Plane and Data-Plane Design · PI · \$238,437 (total: \$499,378) · 2015 – 2019  
**NSF-SaTC-Small:** Collaborative Research: Secure Data Charging Architecture for Mobile Devices in 3G/4G Cellular Networks: Vulnerabilities and Solutions · PI (lead) · \$245,581 (total: \$497,948) · 2014 – 2018  
**NSF-NeTS-Small:** Collaborative Research: Identifying Design and Operational Loopholes in Cellular Network Protocols · PI · \$245,581 (total: \$497,948) · 2014 – 2018  
**Gift from Adobe Systems, Inc** · 2018 · · \$15,000  
**Gift from Adobe Systems, Inc** · 2014-2016 · · \$55,750

## Software

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- [S1] MobileInsight · Version 3.3 · Dec 2017  
URL: <http://www.mobileinsight.net>, Github: <https://github.com/mobile-insight>  
o Downloaded over 1500+ times from 30+ countries; Used by 130+ companies and academic institutions including Google, Microsoft, Nokia Bell Lab, AT&T, Verizon, SRI, Huawei, Simula, Stanford, Berkeley, UIUC, UCSD, UCLA, Michigan, UW-Wisconsin, Purdue, GaTech, Cambridge, KAIST, Waseda, Tsinghua, SJTU, NTU, etc.;  
o Make cellular network research accessible on the device side and empower 3rd-party research at top venues like Mobisys'17, TMC'17, SIGMETRICS'18, NDSS'18, CoNext'18 etc.
- [S2] MI-Lab · Version 2.0 · Aug 2018  
URL: <http://milab.cs.purdue.edu/>  
o Testbed for crowdsourced on-phone cellular network experimentation and analytics at scale
- [S3] HackCellular · Version 1.0 · Dec 2015  
A mobile application for All-In-One Demo of Real Attacks in Cellular Networks (CCS'14, CCS'15)
- [S4] CNetVerifier · Version 1.0 · Dec 2014  
Software to verify cellular network inter-protocol interactions (SIGCOMM'14)

## Publications

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Please find my Google scholar at <http://scholar.google.com/citations?user=7QF1eF4AAAAJ>;  
Citations: 3405, H-index: 24, i10-index: 35 (as of 08/17/2018)

## Conference Papers

- [C1] Haotian Deng, Chunyi Peng, Ans Fida, Jiayi Meng, and Charlie Hu, "Mobility Support in Cellular Networks: A Measurement Study on Its Configurations and Implications", In *ACM Internet Measurement Conference, IMC*, 2018, (28 out of 112 long submissions, acceptance rate: 25%)
- [C2] Haotian Deng, Weicheng Wang, and Chunyi Peng, "CEIVE: Combating Caller ID Spoofing on 4G Mobile Phones Via Callee-Only Inference and Verification", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, 2018, (42 out of 187 submissions, acceptance rate: 22.5%)
- [C3] Zengwen Yuan, Qianru Li, Yuanjie Li, Songwu Lu, Chunyi Peng, and George Varghese, "Resolving Policy Conflicts in Multi-Carrier Cellular Access", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, 2018, (42 out of 187 submissions, acceptance rate: 22.5%)
- [C4] Kai Zhang, Chenshu Wu, Chaofan Yang, Yi Zhao, Kehong Huang, Chunyi Peng, Yunhao Liu, and Zheng Yang, "ChromaCode: A Fully Imperceptible Screen-Camera Communication System", In *ACM*

*International Conference on Mobile Computing and Networking, **MobiCom**, 2018, (42 out of 187 submissions, acceptance rate: 22.5%)*

- [C5] Li Li, Ke Xu, Tong Li, Kai Zheng, Chunyi Peng, Dan Wang, Xiangxiang Wang, Meng Shen, and Rashid Mijumbi, "A Measurement Study on Multi-path TCP with Multiple Cellular Carriers on High-speed Rails", In *ACM International Conference on Data Communication, **SIGCOMM***, Aug 2018, (40 out of 222 submissions, acceptance rate: 18%)
- [C6] Tian Xie, Guan-Hua Tu, Chi-Yu Li, Chunyi Peng, Jiawei Li, and Mi Zhang, "The Dark Side of Operational Wi-Fi Calling Services", In *IEEE Conference on Communications and Network Security, **CNS***, 2018, (51 out of 187 submissions, acceptance rate: 28.2%), **Best Paper Award**
- [C7] Zengwen Yuan, Yuanjie Li, Chunyi Peng, Songwu Lu, Haotian Deng, Zhaowei Tan, and Taqi Raza, "A Machine Learning Based Approach to Mobile Network Analysis", In *IEEE International Conference on Computer Communication and Networks, **ICCCN***, 2018, (Invited Paper)
- [C8] Yuanjie Li, Zengwen Yuan, and Chunyi Peng, "A Control-Plane Perspective on Reducing Data Access Latency in LTE Networks", In *ACM International Conference on Mobile Computing and Networking, **MobiCom***, 2017, (35 out of 185 submissions, acceptance rate: 18.9%)
- [C9] Haoyang Wu, Tao Wang, Zengwen Yuan, Chunyi Peng, Zhiwei Li, Zhaowei Tan, Boyan Ding, Xiaoguang Li, Yuanjie Li, Jun Liu, and Songwu Lu, "The TICK Programmable Low-Latency SDR System", In *ACM International Conference on Mobile Computing and Networking, **MobiCom***, 2017, (35 out of 185 submissions, acceptance rate: 18.9%), **Best Community Paper Award**
- [C10] Xu Wang, Zimu Zhou, Zheng Yang, Yunhao Liu, and Chunyi Peng, "Spatio-Temporal Analysis and Prediction of Cellular Traffic in Metropolis", In *IEEE International Conference on Network Protocols, **ICNP***, 2017, (39 out of 209 submissions, acceptance rate: 18.7%)
- [C11] Li Li, Ke Xu, Dan Wang, Chunyi Peng, Kai Zheng, Haiyang Wang, Rashid Mijumbi, and Xiangxiang Wang, "A Measurement Study on Skype Voice and Video Calls in LTE Networks on High Speed Rails", In *IEEE/ACM 25th International Symposium on Quality of Service, **IWQoS***, 2017
- [C12] Haotian Deng, Qianru Li, Yuanjie Li, Songwu Lu, Chunyi Peng, Taqi Raza, Zhaowei Tan, Zengwen Yuan, and Zhehui Zhang, "Towards Automated Intelligence in 5G Systems", In *IEEE International Conference on Computer Communication and Networks, **ICCCN***, 2017, (Invited Paper)
- [C13] Kun Jin, Si Fang, Chunyi Peng, Zhiyang Teng, Xufei Mao, Lan Zhang, and Xiang-Yang Li, "ViViSnoop: Someone is Snooping Your Typing Without Seeing It!", In *IEEE Conference on Communications and Network Security, **CNS***, 2017
- [C14] Qiang Zhai, Fan Yang, Adam Champion, Chunyi Peng, Jingchuan Wang, Dong Xuan, and Wei Zhao, "BridgeLoc: Bridging Vision-Based Localization for Robots", In *IEEE International Conference on Mobile Ad Hoc and Sensor Systems, **MASS***, 2017
- [C15] Zenghua Zhao, Jiankun Wang, Xingya Zhao, Chunyi Peng, Qian Guo, and Bin Wu, "NaviLight: Indoor Localization and Navigation under Arbitrary Lights", In *IEEE International Conference on Computer Communications, **INFOCOM***, 2017, (292 out of 1395 submissions, acceptance rate: 20.9%)
- [C16] Han Xu, Zheng Yang, Zimu Zhou, Ke Yi, and Chunyi Peng, "TUM: Towards Ubiquitous Multi-Device Localization for Cross-Device Interaction", In *IEEE International Conference on Computer Communications, **INFOCOM***, 2017, (292 out of 1395 submissions, acceptance rate: 20.9%)
- [C17] Yuanjie Li, Chunyi Peng, Zengwen Yuan, Jiayao Li, Haotian Deng, and Tao Wang, "MobileInsight: Extracting and Analyzing Cellular Network Information on Smartphones", In *ACM International Conference on Mobile Computing and Networking, **MobiCom***, 2016, (32 out of 226 submissions, acceptance rate: 14.2%), **Best Community Paper Award**
- [C18] Yuanjie Li, Haotian Deng, Jiayao Li, Chunyi Peng, and Songwu Lu, "Instability in Distributed Mobility Management: Revisiting Configuration Management in 3G/4G Mobile Networks", In *ACM International Conference on Measurement and Modeling of Computer Science, **SIGMETRICS***, 2016, (28 out of 208 submissions, acceptance rate: 13.5%)
- [C19] Yuanjie Li, Haotian Deng, Chunyi Peng, Guan-Hua Tu, Jiayao Li, Zengwen Yuan, and Songwu Lu, "iCellular: Define Your Own Cellular Network Access on Commodity Smartphones", In *USENIX Symposium on Networked Systems Design and Implementation, **NSDI***, March 2016, (45 out of 228 submissions, acceptance rate: 19.7%)
- [C20] Chunyi Peng, Yuanjie Li, Zhuoran Li, Jie Zhao, and Jiaqi Xu, "Understanding and Diagnosing Real-World Femtocell Performance Problems", In *INFOCOM, **INFOCOM***, April 2016, (300 out of 1644 submissions,

acceptance rate: 18.2%)

- [C21] Guan-Hua Tu, Chi-Yu Li, Chunyi Peng, Yuanjie Li, and Songwu Lu, "New Security Threats Caused by IMS-based SMS Service in 4G LTE Networks", In *ACM Conference on Computer and Communications Security, CCS*, 2016, (137 out of 831 submissions, acceptance rate: 16.5%)
- [C22] Chunyi Peng and Yuanjie Li, "Demystify Undesired Handoff in Cellular Networks", In *IEEE International Conference on Computer Communication and Networks, ICCCN*, 2016
- [C23] Chi-Yu Li, Guan-Hua Tu, Chunyi Peng, Zengwen Yuan, Yuanjie Li, Songwu Lu, and Xinbing Wang, "Insecurity of voice solution volte in LTE mobile networks", In *ACM SIGSAC Conference on Computer and Communications Security, CCS*, Oct 2015, (128 out of 646 submissions, acceptance rate: 19.8%)
- [C24] Anran Wang, Zhuoran Li, Chunyi Peng, Guobin Shen, Gan Fang, and Bing Zeng, "InFrame++: Achieve Simultaneous Screen-Human Viewing and Hidden Screen-Camera Communication", In *ACM International Conference on Mobile Systems, Applications and Service, MobiSys*, May 2015, (29 out of 219 submissions, acceptance rate: 13.2%)
- [C25] Chi-Yu Li, Chunyi Peng, Songwu Lu, Xinbing Wang, and Ranveer Chandra, "Latency-Aware Rate Adaptation in 802.11n Home Networks ", In *IEEE Conference on Computer Communications, INFOCOM*, April 2015, (316 out of 1640 submissions, acceptance rate: 19.3%)
- [C26] Li Li, Ke Xu, Dan Wang, Chunyi Peng, Qingyang Xiao, and Rashid Mijumbi, "A Measurement Study on TCP Behaviors in HSPA+ Networks on High-speed Rails", In *IEEE Conference on Computer Communications, INFOCOM*, April 2015, (316 out of 1640 submissions, acceptance rate: 19.3%)
- [C27] Guan-Hua Tu, Yuanjie Li, Chunyi Peng, Chi-Yu Li, Hongyi Wang, and Songwu Lu, "Control-Plane Protocol Interactions in Cellular Networks", In *ACM International Conference on Data Communication, SIGCOMM*, August 2014, (45 out of 237 submissions, acceptance rate: 18%)
- [C28] Chunyi Peng, Chi-Yu Li, Hongyi Wang, Guan-Hua Tu, and Songwu Lu, "Real Threats to Your Data Bills: Security Loopholes and Defense in Mobile Data Charging", In *ACM SIGSAC Conference on Computer and Communications Security, CCS*, Nov 2014, (114 out of 585 submissions, acceptance rate: 19.5%)
- [C29] Anran Wang, Shuai Ma, Chunming Hu, Jinpeng Huai, Chunyi Peng, and Guobin Sheng, "Enhancing Reliability to Boost the Throughput over Screen-Camera Links", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, Sep 2014, (36 out of 220 submissions, acceptance rate: 16.4%)
- [C30] Junjue Wang, Kaichen Zhao, Xinyu Zhang, and Chunyi Peng, "Ubiquitous Keyboard for Small Mobile Devices: Harnessing Multipath Fading for Fine-grained Keystroke Localization", In *ACM International Conference on Mobile Systems, Applications and Service, MobiSys*, June 2014, (25 out of 221 submissions, acceptance rate: 11.3%)
- [C31] Liqun Li, Pan Hu, Chunyi Peng, Guobin Shen, and Feng Zhao, "Epsilon: A Visible Light Based Positioning System", In *USENIX Symposium on Networked Systems Design and Implementation, NSDI*, April 2014, (38 out of 223 submissions, acceptance rate: 17.0%)
- [C32] GuanHua Tu, Chunyi Peng, Hongyi Wang, ChiYu Li, and Songwu Lu, "How Voice Calls Affect Data in Operational LTE Networks", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, Oct 2013, (28 out of 208 submissions, acceptance rate: 13.5%)
- [C33] Guanhua Tu, Chunyi Peng, Xingyu Ma, Chiyu Li, Hongyi Wang, Tao Wang, and Songwu Lu, "Accounting for Roaming Users on Mobile Data Access: Issues and Root Causes", In *ACM International Conference on Mobile Systems, Applications and Service, MobiSys*, Jun. 2013, (33 out of 210 submissions, acceptance rate: 15.7%)
- [C34] Ioannis Pefkianakis, Chiyu Li, Chunyi Peng, Suk-Bok Lee, and Songwu Lu, "CMES: Collaborative Energy Save for MIMO 802.11 Wireless Networks", In *IEEE International Conference on Network Protocols, ICNP*, Oct. 2013, (46 out of 251 submissions, acceptance rate: 18.3%)
- [C35] Chunyi Peng, Guanhua Tu, Chiyu Li, and Songwu Lu, "Can We Pay for What We Get in 3G Data Access?", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, Aug. 2012, (32 out of 212 submissions, acceptance rate: 15.1%)
- [C36] Chiyu Li, Chunyi Peng, Songwu Lu, and Xingbin Wang, "Energy-efficient rate adaptation for 802.11n devices", In *ACM International Conference on Mobile Computing and Networking, MobiCom*, Aug. 2012, (32 out of 212 submissions, acceptance rate: 15.1%)
- [C37] Chunyi Peng, ChiYu Li, GuanHua Tu, Songwu Lu, and Lixia Zhang, "Mobile Data Charging: New Attacks and Countermeasures", In *ACM SIGSAC Conference on Computer and Communications Security, CCS*, Oct. 2012, (80 out of 423 submissions, acceptance rate: 18.9%)

- [C38] Chunyi Peng, Minkyong Kim, Zhe Zhang, and Hui Lei, "VDN: Virtual Machine Image Distribution Network for Cloud Data Centers", In *IEEE Conference on Computer Communications, INFOCOM*, March 2012, (278 out of 1547 submissions, acceptance rate: 18%)
- [C39] Chunyi Peng, Suk-Bok Lee, Songwu Lu, Haiyun Luo, and Hewu Li, "Traffic-Driven Power Saving in Operational 3G Cellular Networks", In *MobiCom, MobiCom*, Sep. 2011, (29 out of 214 submissions, acceptance rate: 13.5%)
- [C40] K. R. Jayaram, Chunyi Peng, Zhe Zhang, Minkyong Kim, Han Chen, and Hui Lei, "An Empirical Analysis of Similarity in Virtual Machine Images", In *International Middleware Conference (Industry Track), Middleware*, Dec 2011
- [C41] Chunyi Peng, Guobin Shen, Yongguang Zhang, and Songwu Lu, "Point & connect: Intention-based device pairing for mobile phone users", In *ACM International Conference on Mobile Systems, Applications and Service, MobiSys*, Jun. 2009, (26 out of 128 submissions, acceptance rate: 20.3%), **Along with Mobisys'08 Best Demo Award**
- [C42] Qutang Cai, Chunyi Peng, and Changshui Zhang, "A Weighted Subspace Approach for Improving Bagging Performance", In *International Conference on Acoustic, Speech, and Signal Processing, ICASSP*, April 2008
- [C43] Qutang Cai, Chunyi Peng, and Changshui Zhang, "Anaylsis of Max-Min Eigenvalue of Constrained Linear Combinations of Symmetric Matrices", In *International Conference on Acoustic, Speech, and Signal Processing, ICASSP*, April 2007
- [C44] Chunyi Peng, Guobin Shen, Yongguang Zhang, Yanlin Li, and Kun Tan, "BeepBeep: A High Accuracy Acoustic Ranging System Using COTS Mobile Devices", In *ACM Conference on Embedded Networked Sensor Systems, SenSys*, 2007, (25 out of 149 submissions, acceptance rate: 16.8%), **Along with Sensys'17 Best Demo Award**
- [C45] Haitao Zheng and Chunyi Peng, "Collaboration and Fairness in Opportunistic Spectrum Access", In *IEEE International Conference on Communications, ICC*, May 2005

## Journal Articles

- [J1] "Device-Customized Multi-Carrier Network Access on Commodity Smartphones".  
Yuanjie Li, Chunyi Peng, Haotian Deng, Zengwen Yuan, Guan-Hua Tu, Jiayao Li, Songwu Lu, Xi Li.  
*IEEE/ACM Transactions on Networking*, accepted, 2018
- [J2] "Device-Customized Multi-Carrier Network Access on Commodity Smartphones".  
Xu Wang, Zimu Zhou, Fu Xiao, Kai Xing, Zheng Yang, Yunhao Liu, and Chunyi Peng.  
*IEEE Transactions on Mobile Computing*, accepted, 2018
- [J3] "The Tick Programmable Low-Latency SDR System".  
Haoyang Wu, Tao Wang, Zengwen Yuan, Chunyi Peng, Zhiwei Li, Zhaowei Tan, Boyan Ding, Xiaoguang Li, Yuanjie Li, Jun Liu, and Songwu Lu.  
*GetMobile: Mobile Comp. and Comm.*, 21 (1), 26–30, May 2018.  
**Research Highlight as MobiCom'17 Best Community Paper Award**
- [J4] "MobileInsight: Analyzing Cellular Network Information on Smartphones".  
Yuanjie Li, Chunyi Peng, Zengwen Yuan, Haotian Deng, Jiayao Li, and Tao Wang.  
*GetMobile: Mobile Computing and Communications*, 21 (1), 39–42, 2017.  
**Research Highlight as MobiCom'16 Best Community Paper Award**
- [J5] "A Longitudinal Measurement Study of TCP Performance and Behavior in 3G/4G Networks Over High Speed Rails".  
Li Li, Ke Xu, Dan Wang, Chunyi Peng, Kai Zheng, Rashid Mijumbi, and Xiangxiang Wang.  
*IEEE/ACM Transactions on Networking*, 25 (4), 2195–2208, 2017
- [J6] "Detecting problematic control-plane protocol interactions in mobile networks".  
Guan-Hua Tu, Yuanjie Li, Chunyi Peng, Chi-Yu Li, and Songwu Lu.  
*IEEE/ACM Transactions on Networking*, 24 (2), 1209–1222, 2016
- [J7] "An Energy Efficiency Perspective on Rate Adaptation for 802.11 n NIC".  
Chi-Yu Li, Chunyi Peng, Peng Cheng, Songwu Lu, Xinbing Wang, Fengyuan Ren, and Tao Wang.  
*IEEE Transactions on Mobile Computing*, 15 (6), 1333–1347, 2016
- [J8] "Impacts of Social Relationships and Inhomogeneous Node Distribution on the Network Performance".  
Kechen Zheng, Jinbei Zhang, Shuochao Yao, Weijie Wu, Xinbing Wang, and Chunyi Peng.

- IEEE Transactions on Wireless Communications*, 15 (8), 5467–5479, 2016
- [J9] “Greenbsn: Enabling energy-proportional cellular base station networks”.  
Chunyi Peng, Suk-Bok Lee, Songwu Lu, and Haiyun Luo.  
*Mobile Computing, IEEE Transactions on*, 13 (11), 2537–2551, 2014
- [J10] “Window-based rate adaptation in 802.11 n wireless networks”.  
Ioannis Pefkianakis, Yun Hu, Suk-Bok Lee, Chunyi Peng, Sofia Sakellari, and Songwu Lu.  
*Mobile Networks and Applications*, 18 (1), 156–169, 2013
- [J11] “BeepBeep: A High-Accuracy Acoustic-Based System for Ranging and Localization Using COTS Devices”.  
Chunyi Peng, Guobin Shen, and Yongguang Zhang.  
*ACM Transactions on Embedded Computing Systems (TECS)*, 1 (1), 2012
- [J12] “Analysis of Classification Margin for Classification Accuracy with Applications”.  
Qutang Cai, Changshui Zhang, and Chunyi Peng.  
*Neurocomputing*, 72 (7-9), 1960–1968, March 2009
- [J13] “Utilization and fairness in spectrum assignment for opportunistic spectrum access”.  
Chunyi Peng, Haitao Zheng, and B.Y. Zhao.  
*ACM Mobile Networks and Applications (MONET)*, 11 (4), 555–576, 2006
- [J14] “Blind Separation of Convolutional Mixtures Using Oblique Projections”.  
Chunyi Peng, Xiaolong Zhu, and Xianda Zhang.  
*Journal of Tsinghua University (Science and Technology) (in Chinese)*, 25 (4), 517–520, April 2005
- [J15] “On recursive oblique projectors”.  
Chunyi Peng and Xianda Zhang.  
*IEEE Signal Processing Letters*, 12 (6), 433 – 436, June 2005

## Refereed Workshop Papers

- [W1] JK Wang and Chunyi Peng, “Analysis of Time Delay Attacks Against Power Grid Stability”, In *the 2nd Workshop on Cyber-Physical Security and Resilience in Smart Grids, CPS Week (CPSR-SG 2017)*, April 2017
- [W2] Yuanjie Li, Zengwen Yuan, Chunyi Peng, and Songwu Lu, “CAP on Mobility Control for 4G LTE Networks”, In *ACM Workshop on Hot Topics in Wireless, HotWireless*, 2016, (Invited Paper)
- [W3] Guan-Hua Tu, Chi-Yu Li, Chunyi Peng, Zenwen Yuan, Yuanjie Li, Xiaohu Zhao, and Songwu Lu, “VoLTE\*: A Lightweight Voice Solution to 4G LTE Networks”, In *International Workshop on Mobile Computing Systems and Applications, HotMobile*, Feb 2016
- [W4] Yuanjie Li, Jiaqi Xu, Chunyi Peng, and Songwu Lu, “A First Look at Unstable Mobility Management in Cellular Networks”, In *International Workshop on Mobile Computing Systems and Applications, HotMobile*, Feb 2016
- [W5] Anran Wang, Chunyi Peng, Ouyang Zhang, Guobin Shen, and Bing Zeng, “InFrame: Multiflexing Full-Frame Visible Communication Channel for Humans and Devices”, In *ACM Workshop on Hot Topics in Networks, HotNets-XIII*, Nov 2014, (26 out of 118 submissions, acceptance rate: 22.0%)
- [W6] Pan Hu, Liqun Li, Chunyi Peng, Guobin Shen, and Feng Zhao, “Pharos: Enable Physical Analytics through Visible Light based Indoor Localization”, In *ACM Workshop on Hot Topics in Networks, HotNets-XII*, Nov 2014, (26 out of 110 submissions, acceptance rate: 23.6%)

## Demos and Posters

- [D1] Haotian Deng and Chunyi Peng, “Demo: Combating Caller ID Spoofing on 4G Phones Via CEIVE”, In *ACM MobiCom*, 2018
- [D2] Yuanjie Li, Zengwen Yuan, Haotian Deng, Amber Xiangli, Chunyi Peng, and Songwu Lu, “Demo: In-device, Runtime Cellular Network Information Extraction and Analysis”, In *ACM MobiCom*, 2016
- [D3] Jingyu Zhang, Gan Fang, Minyi Guo, and Chunyi Peng, “How video streaming consumes power in 4G LTE networks”, In *IEEE International Symposium on World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, 2016
- [D4] Anran Wang, Zhuoran Li, Gan Fang, Chunyi Peng, Guobin Shen, and Bing Zeng, “Demo: Achieving Simultaneous Screen-Human Viewing and Hidden Screen-Camera Communication”, In *ACM MobiSys*, 2015
- [D5] Junjue Wang, Kaichen Zhao, Xinyu Zhang, and Chunyi Peng, “Demo: A Robust Barcode System for Data Transmissions over Screen-Camera Links”, In *ACM MobiSys*, 2014



- [D6] Chunyi Peng, Guobin Shen, Donggun Kim, and Yongguang Zhang, “Demo: Point2share: Intuitive and secure file sharing among mobile phone users”, In *ACM MobiSys*, 2008, **Best Demo Award**
- [D7] Guobin Shen, Yanlin Li, Chunyi Peng, and Yongguang Zhang, “Demo: Mobius: A together-viewing mobile video experience”, In *ACM MobiSys*, 2007, **Best Demo Award**
- [D8] Chunyi Peng, Guobin Shen, Zheng Han, Yongguang Zhang, Yanlin Li, and Kun Tan, “Demo: A beepbeep ranging system on mobile phones”, In *ACM Sensys*, 2007, **Best Demo Award**

## Patents

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- [P1] Guobin Shen, Chunyi Peng, and Yongguang Zhang, “Gesturing to select and configure device communication”, United State Patent 7,991,896.
- [P2] Chunyi Peng, Guobin Shen, Kun Tan, and Yongguang Zhang, “Acoustic ranging”, United State Patent 7,729,204.

## Selected Media Coverage

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- Aug 2018** News: This 5G Feature Will Revolutionize Connectivity and How Much We Pay for It, *Inverse.com*
- Feb 2017** TV interview: Overcharges in our mobile data plans, *WPXI (the NBC affiliate)*
- Oct 2016** TV interview: Over the Limit: FOX25 Investigates uncovers cell data charges as customers sleep, *Fox 25 (Boston)*
- Oct 2015** News: Researchers discover new attacks amid VoLTE rollout, *TheVerge*
- Oct 2015** News: Researchers hack VoLTE, get free data, *RCRWirelessNews*
- Sep 2012** News: How Your Wireless Carrier Overcharges You, *MIT Technology Review*
- Sep 2012** News: Phone Companies Could Be Overcharging You for Data, *Market Place*
- Sep 2012** News: UCLA study documents wireless data overcharges, *Computer World*
- Sep 2012** News: Study: What Smartphone Users Don't Know about Their Bill, *the Fiscal Time*
- Sep 2012** News: Your carrier may be charging you for data you didn't receive, *TheVerge*
- Sep 2012** News: Telcos overcharging customers for data, *The Sudney Morning Herald*
- Sep 2012** News: Studies show that you may be getting overcharged for data in low signal areas, *Android Authority*

## Invited Talks and Plenary Presentations

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- Tutorials.....
- o *Latency Analysis Via MobileInsight*, Tutorial for Hackathon, co-located with SIGCOMM'18, Budapest, Hungary, Aug 2018
  - o *Verifying Cellular Network Operations On Your Phones From Simulation to Practice*, IEEE Globecom'17 Tutorial, Singapore, Dec 2017
- Invited Plenary Presentations.....
- o *A Security Perspective on VoLTE Our Untold Research Story and Lessons*, Invited by GSMA (GSM Association), Toronto, Canada, Sep 2016 · Audience 100+ global operators and vendors at GSMA
  - o *Keynote On “Internet” of Things An Architectural Perspective from Mobile Networks*, 10th ACM International Workshop on IoT and Cloud Computing, Wuxi, China, Dec 2015
- Panelist and NSF Workshops.....
- o *MobileInsight Towards In-Device Mobile Network Intelligence*, NSF EU-US Workshop on Technological Gaps and Opportunities For Realizing Open Source Based End-to-End Network Architecture, Snowbird, UT, Oct 2017
  - o *Protocol Verification for Cellular Networks*, NSF workshop on on Mobile Community Measurement Infrastructure, Washington DC, Nov 2014
  - o *Panel on Career Development*, ACM S3 workshop on Wireless of the Students, by the Students, for the Students, Sep 2014
  - o *Cellular Networking Research A Case Study*, Panel on Building a Cellular Networking Research Program at All Things Cellular 2014, Chicago, IL USA, Aug 2014

## Invited Presentations.....

- *AIM: Amplifying Intelligence in Mobile Networks*
  - University of Texas at Austin, Sep 2018
  - Rice University, Sep 2018
  - Michigan State University, Sep 2018
- *Device-side Mobile Network Analytics and Beyond*, AT&T Research Lab, Bedminster, NJ, May 2018
- *Amplify Intelligence of Mobile Network In the Age of Data and AI Science*, NEC Laboratories America, Princeton, NJ, May 2018
- *From Zero to One to Many Empowering Device-Side Cellular Network Analytics at Scale*, Research Symposium at MobiCom 2018 TPC Meeting, May 2018
- *Data-Driven Mobile Network Intelligence On Your Smartphones*, University of Chicago, May 2018
- *Amplifying Intelligence in Mobile Networks*, Greater Chicago Area Systems Workshop (GCASR '18), Chicago, IL, Apr 2018
- *When Mobile Network Meets AI*
  - Tsinghua University, Beijing, China, Dec 2017
  - Zhejiang University, Hanzhou, China, Dec 2017
  - Beijing University of Posts and Telecommunications, Beijing, China, Dec 2017
- *Augment Mobile Network Intelligence at "Smart" Ends*, University of California, Riverside, May 2017
- *Bracing for Automated Intelligence in Mobile Networked System*, Purdue University–West Lafayette, Apr 2017
- *MobileInsight Bring Cellular Network Intelligence to Smart Mobile Ends*, Shanghai Jiaotong University, China., Shanghai, China, Dec 2016
- *Harness End Intelligence at Mobile Devices in Cellular Networks*, University of Science and Technology of China, Hefei, Anhui China, Dec 2016
- *Harness Device Intelligence in the Coming 5G Era*, Beijing University of Posts and Telecommunications, Beijing, China, Dec 2016
- *My "Biased" Introduction to Cellular Networks Basic Ideas and Thought Out of the Box*, Tsinghua University, Beijing, China, Dec 2016
- *Emerging Security Threats Against 4G LTE Cellular Networks VoLTE as A Case Study and Beyond*
  - Shanghai Jiaotong University, China, Dec 2015
  - Beijing University of Posts and Telecommunications, China, Dec 2015
- *Mobile Networks Yesterday, Today and Tomorrow, The Power and the Peril of Network Evolution*, Shanghai Jiaotong University, China, Apr 2015
- *Explore Limitations of Cellular Infrastructure for Mobile Data*, Microsoft Research Asia, China, Apr 2013
- *Network Support for Mobile Devices and Apps Infrastructure Limitations & Solutions*
  - University of Illinois Urbana-Champaign, March 2013
  - The Ohio State University, March 2013
  - University of California, Riverside, April 2013
  - Tsinghua University, China, April 2013

## Teaching

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CS 354 · Operating System · Fall 2018

CS 536 · Data Communication And Computer Networks · Spring 2018

CS 590 · Embracing 5G and Beyond 5G · Fall 2017

CSE5469 · Advanced Topics on Cellular Networks · Fall 2015

CSE5469 · Advanced Topics on Mobile Networking and Systems · Spring 2014

CSE3461/5461 · Computer Networking and Internet Technologies · Spring 2017, Fall 2015, Fall 2014, Spring 2014

## Student Supervision

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### Postdoc

- Zhuo Jiang



### Ph.D. Students

- Haotian Deng
- Andrew B Groenewold
- Jiayi Meng (co-advised by Prof. Charlie Hu)
- Cheng Zhang (OSU, co-advised by Prof. Dong Xuan)
- Qiang Zhai (OSU, graduated in Aug. 2017, co-advised with Prof. Dong Xuan, now at Startup)

### M.S Students

- Ans Fida

### Undergraduate Students

- Kelvin Zhang (Sep 2018 - )
- Jiawei Lu (June 2018 - )
- Abdullah Ali Aldalaan (May 2018 to Aug 2018)
- Abdulrahman Ali Alsalihi (May 2018 to Aug 2018)
- Si Fang (Sep. 2016 to May 2017, M.S. student at UC Berkeley)
- Gan Fang (Sep. 2014 - May 2016, MS student at Northwestern)
- Ryan Van Soelen (Jan. 2015 - May 2015, Ph.D. student at The Johns Hopkins University)
- Li Zhang (Jan. 2014 to May 2014, MS student at UCLA)

### Visiting Students

- Ziyang Jiang (Jul. 2018 to Oct. 2018, Undergrad student at Tsinghua University, China)
- Jaziel Xu (Jul. 2018 to Oct. 2018,, Undergrad student at Peking University, China)
- Ling Kai (Jul. 2018 to Oct. 2018, Undergrad student at Huazhong University of Science and Technology, China)
- Yaxin Li (Jul. 2018 to Sep. 2018,, Undergrad student at Tsinghua University, China)
- Xumiao Zhang (Jul. 2017 to Aug. 2017, Undergrad student at University of Science and Technology, China, now Ph.D. student at U. Michigan)
- Jingyu Zhang (08/2014 - 01/2016, PhD student at Shanghai Jiaotong University, China)
- Jiahua Chen (09/2015 - 12/2015, MS student at Peking University, China)

**Other student relationships.** There are students I had fortune to intensively work with, who had been in my lab or are currently at other institutions: Weicheng Wang, Mohammad Haseeb, Kun Jin, Xingya Zhao, Zhuoran Li, Jie Zhao, Jiaqi Xu, Xiaohu Zhao, Yuanjie Li, Zengwen Yuan, Li Li, Zhe Yang, Anran Wang, Pan Hu et.al.

## Professional Service

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Program co-chair for

- o ACM International Workshop on Wireless Network Testbeds, Experimental evaluation & Characterization (WiNTech, co-located with MobiCom) · 2017
- o ACM Workshop on Visible Light Communication Systems (VLCS, co-located with MobiCom) · 2015

TPC Member for

- o ACM MobiCom, 2014 - 2019
- o MobiSys (2014, 2015, 2017), WWW (2017, 2018), INFOCOM (2016, 2017), ICNP (2015, 2016), SECON (2015, 2017, 2018), HotMobile (2016, 2017), NDSS (2016, 2017), CNS (2016 - 2018), AsiaCCS (2018), etc.

Reviewer for

- o IEEE/ACM Transactions on Networking(TON)
- o IEEE Transactions on Mobile Computing(TMC)
- o IEEE Journal on Selected Areas in Communications (JSAC), etc.

Conference organization committee members: HotMobile'18 (Poster/Demo Co-Chair), IEEE CNS'18 (Poster/Demo Co-Chair), ACM MobiCom'17 (Publicity Co-Chair), Mobisys'17 (Poster/Demo Co-Chair), IEEE MASS'17 (Web Chair), etc.

Mentor Co-Chair on N2Women Board · 2017 - present

*updated on September 6, 2018.*