

Xia Zhou

Associate Professor of Computer Science
Columbia University

500 West 120 Street, Room 450
New York, NY 10027
xia@cs.columbia.edu
<https://www.cs.columbia.edu/~xia>

Education

University of California, Santa Barbara, Santa Barbara, CA June 2013
Ph.D., Computer Science
Advisor: Prof. Haitao (Heather) Zheng

Peking University, Beijing, China June 2007
Master of Science, Computer Science

Wuhan University, Wuhan, Hubei, China June 2004
Bachelor of Science, Computer Science and Technology

Appointments

Columbia University, New York, NY July 2022 – present
Associate Professor of Computer Science
Director of the Mobile X Laboratory

Dartmouth College, Hanover, NH July 2018 – June 2022
Associate Professor of Computer Science
Co-director of the Dartmouth Networking and Ubiquitous Systems (DartNets) Laboratory, Dartmouth Reality and Robotics Lab (RLab)

Dartmouth College, Hanover, NH July 2013 – June 2018
Assistant Professor of Computer Science
Co-director of the Dartmouth Networking and Ubiquitous Systems (DartNets) Laboratory

University of Cambridge, Cambridge, UK April 2017 – June 2017
Visiting Faculty

National Taiwan University, Taipei, China December 2016 – February 2017
Visiting Faculty

UCSB LINK Laboratory, Santa Barbara, CA September 2007 – June 2013
Research Assistant
Worked with Prof. Haitao (Heather) Zheng on dynamic spectrum distributions, wireless networking systems and measurements, and wireless data centers.

Microsoft Research, Redmond, WA June 2011 – September 2011
Research Intern, Mobile Computing and Research Center
Worked with Dr. Ranveer Chandra on designing energy-efficient techniques for Wi-Fi connectivity. Performed detailed power measurements and built an emulator to validate the system design.

Technicolor Paris Research & Innovation Center, Paris, France

June 2010 – September 2010

Research Intern

Collaborated with Dr. Stratis Ioannidis and Dr. Laurent Massoulié to study content sharing across multiple BitTorrent swarms. Analyzed the stability and optimality properties, and designed content exchange algorithm to yield the optimal state.

Microsoft Research Asia, Beijing, China

March 2006 – October 2006

Research Intern, Wireless and Networking Group

Designed CORA, Correlation-based Rate Adaptation, for the 802.11n networks. Developed a physical layer MIMO simulator and NS2 simulator to evaluate CORA.

Awards

UBICOMP 10-Year Impact Award (2024)

Presidential Early Career Award for Scientists and Engineers (2019)

ACM SIGMOBILE Rockstar Award (2019)

Susan and Gib Myers 1964 Faculty Fellowship (2018)

Karen E. Wetterhahn Memorial Award for Distinguished Creative and Scholarly Achievement (2018)

N2Women: Rising Stars in Networking and Communication (2017)

Alfred P. Sloan Research Fellowship (2017)

NSF CAREER Award (2016)

Google Faculty Research Award (2014)

Outstanding Dissertation Award in Computer Science, UCSB (2013)

Outstanding Publication Award in Computer Science, UCSB (2012, 2009)

Best Elevator Pitch Award in S3 Workshop, MobiHoc (2010)

US Anita Borg Scholarship Finalist (2009)

Grace Hopper Celebration of Women in Computing Scholarship (2009)

Chancellor's Fellowship, UCSB (2011, 2009, 2007)

Publications

- [1] Yanchen Liu, Minghui Zhao, Kaiyuan Hou, Junxi Xia, Charles Carver, Stephen Xia, **Xia Zhou**, Xiaofan Jiang. Moth: A Low-cost IR-based Approach Towards Autonomous Precision Drone Landing. *IEEE International Conference on Robotics and Automation (ICRA)*, 2026.
- [2] Atul Rohit Agarwal, Dhawal Sirikonda, Atharv Agashe, Ziang Ren, Dinithi S. Silva, Charles Carver, Alberto Quattrini Li, **Xia Zhou**, and Adithya Pediredla. Underwater Optical Backscatter Communications using Acousto-Optic Beam Steering. *SIGGRAPH Asia* 2025.
- [3] Qijia Shao, Junxiao Chen, Ho Man Colman Leung, Meiqi Zhao, Ruoyu Xu, Jiting Liu, Lisa Maria Disalvo García, Xiaofan Jiang, Marie-Pierre St-Onge, and **Xia Zhou**. My Pillow Knows My Sleep: Sleep Monitoring with Computational Fabrics in the Pillowcase. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Vol. 9, No. 3, Article 128, September 2025.
- [4] Hadleigh Schwartz, Xiaofeng Yan, Charles J. Carver, and **Xia Zhou**. Combating Falsification of Speech Videos with Live Optical Signatures. *Proceedings of the 2025 ACM SIGSAC Conference on Computer and Communications Security (CCS)*, 2025.
- [5] Charles Carver, Hadleigh Schwartz, Toma Itagaki, Zachary Englhardt, Kechen Liu, Megan Graciela Nauli Manik, Chun-Cheng Chang, Vikram Iyer, Brian Plancher, and **Xia Zhou**. Set Phasers to Stun: Beaming Power and Control to Mobile Robots with Laser Light. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2025.

- [6] Joseph P. Lazzaro, Xiaoxin Wang, Nicholas Shade, Hadleigh Schwartz, Charles J. Carver, Yanchen Liu, **Xia Zhou**, Jifeng Liu, and Eric R. Fossum. Multi-Gbps Visible Light Communication with High-Efficiency, Low-speckle Contrast White Laser Light. *Proceedings of Laser Display and Lighting Conference (LDC)*, 2025.
LDC 2025 Student Award.
- [7] Katelyn Lee, Runsheng Wang, Ava Chen, Lauren Winterbottom, Ho Man Colman Leung, Lisa Maria DiSalvo, Iris Xu, Jingxi Xu, Dawn M. Nilsen, Joel Stein, **Xia Zhou**, and Matei Ciocarlie. Fabric Sensing of Intrinsic Hand Muscle Activity. *IEEE International Conference on Rehabilitation Robotics (ICORR)*, 2025.
- [8] Julien Blanchet, Megan Hillis, Qijia Shao, **Xia Zhou**, Devin Balkcom, and David Kraemer. Enhancing the Educational Potential of Online Movement Videos: System Development and Empirical Studies with TikTok Dance Challenges. *The ACM CHI Conference on Human Factors in Computing Systems (CHI)*, 2025.
- [9] Ho Man Colman Leung, Chengyue Gong, Luke Geiser, Emily E. Fivekiller, Nam Bui, Tam Vu, Temiloluwa Prioleau, Gregory P. Forlenza, Qiang Liu, and **Xia Zhou**. Clinical evaluation of a polarization-based optical noninvasive glucose sensing system. *Scientific Reports*. 2025.
- [10] Charles J. Carver and **Xia Zhou**. Polarization sensing of network health and seismic activity over a live terrestrial fiber-optic cable. *Nature Communications Engineering*. 2024.
- [11] Baiying Lu, Yanjun Cui, Prajakta Belsare, Catherine Stanger, **Xia Zhou**, and Temiloluwa Prioleau. Mealtime Prediction using Wearable Insulin Pump Data to Support Diabetes Management. *Scientific Reports*. 2024.
- [12] Qijia Shao, Jiting Liu, Emily Bejerano, Ho Man Colman Leung, Jingping Nie, Xiaofan Jiang, and **Xia Zhou**. Joey: Supporting Kangaroo Mother Care with Computational Fabrics. *The 22nd ACM International Conference on Mobile Systems, Applications, and Services (MobiSys '24)*. June 2024.
Best Paper Award. People's Choice Demo Award. SIGMOBILE Research Highlights.
- [13] Charles J. Carver, Toma Itagaki, Kechen Liu, Megan G. N. Manik, Zachary Englhardt, Vikram Iyer, and **Xia Zhou**. Demonstration of Laser Power Delivery for Mobile Microrobots. *In Proceedings of the 10th Workshop on Micro Aerial Vehicle Networks, Systems, and Applications (DroNet '24)*, June, 2024.
- [14] Charles J. Carver*, Hadleigh Schwartz*, Qijia Shao, Nicholas Shade, Joseph Lazzaro, Xiaoxin Wang, Jifeng Liu, Eric Fossum, and **Xia Zhou**. Catch Me If You Can: Laser Tethering with Highly Mobile Targets. *To appear in the 21st USENIX Symposium on Networked Systems Design and Implementation (NSDI '24)*. April 2024.
(* Co-primary author)
- [15] Charles J. Carver*, Hadleigh Schwartz*, Qijia Shao, Nicholas Shade, Joseph Lazzaro, Xiaoxin Wang, Jifeng Liu, Eric Fossum, and **Xia Zhou**. Catch Me If You Can: Demonstrating Laser Tethering with Highly Mobile Targets. *The 29th Annual International Conference on. Mobile Computing and Networking (MobiCom '23)*. October 2023. (* Co-primary author)
Best Demo Award.
- [16] Yanchen Liu, Yu Ji, Minghui Zhao, Xiaofan Jiang, **Xia Zhou**, Changxi Zheng. Demo Abstract: Seamless High-Speed Optical Communication for Mobile Wide-Area Using Diffused Infrared Laser. *The 22nd International Conference on Information Processing in Sensor Networks (IPSN '23)*. May 2023.
Best Demo Award.
- [17] Ho Man Colman Leung, Gregory Forlenza, Temiloluwa Prioleau, and **Xia Zhou**. Noninvasive Glucose Sensing in Vivo. *Sensors* 2023, 23, 7057.

- [18] Alberto Quattrini Li, Charles J. Carver, Qijia Shao, **Xia Zhou**, and Srihari Nelakuditi. Communication for Underwater Robots: Recent Trends. *Current Robotics Reports*. 2023.
- [19] Ho Man Colman Leung, Tianxing Li, Temiloluwa Prioleau, Tam Vu, Gregory Forlenza, and **Xia Zhou**. A Portable Solution Towards Noninvasive Glucose Sensing with Light. *Adjunct Proceedings of the 2022 ACM International Joint Conference on Pervasive and Ubiquitous Computing and the 2022 ACM International Symposium on Wearable Computers (UbiComp/ISWC Adjunct)*. September 2022.
- [20] Megan E. Hillis, Brianna Aubrey, Julien Blanchet, Qijia Shao, **Xia Zhou**, Devin Balkcom, and David J. M. Kraemer. Overlapping Semantic Representations of Sign and Speech in Novice Sign Language Learners. *Annual Conference on Cognitive Science Society (CogSci)*, July 2022.
- [21] Charles J. Carver*, Qijia Shao*, Samuel Lensgraf, Amy Sniffen, Maxine Perroni-Scharf, Hunter Gallant, Alberto Quattrini Li, and **Xia Zhou**. Sunflower: Locating Underwater Robots From the Air. *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, June 2022.
(* Co-primary author)
- [22] Carver, Charles J., Zhao Tian, Qijia Shao, Hongyong Zhang, Kofi M. Odame, Alberto Quattrini Li, and **Xia Zhou**. Air-Water Communication and Sensing with Light. In *2022 14th International Conference on COMmunication Systems & NETworkS (COMSNETS)*, pp. 371-374. IEEE, 2022.
- [23] Vimal Kakaraparthi*, Qijia Shao*, Charles Carver, Tien Pham, Nam Bui, Phuc Nguyen, **Xia Zhou**, and Tam Vu. FaceSense: Sensing Face Touch with an Ear-worn System. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Volume 5, Issue 3, Article 110. September 2021. Presented at *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2021.
(* Co-primary author)
- [24] Qijia Shao, Amy Sniffen, Julien Blanchet, Megan E. Hillis, Xinyu Shi, Themistoklis K. Haris, Jason Liu, Jason Lambertson, Melissa Malzkuhn, Lorna C. Quandt, James Mahoney, David J. M. Kraemer, **Xia Zhou**, and Devin Balkcom. Teaching American Sign Language in Mixed Reality. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Volume 4 Issue 4, 2020. Presented at *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2021.
- [25] Tianxing Li, Derek Bai, Temiloluwa O. Prioleau, Nam Bui, Tam Vu, and **Xia Zhou**. Noninvasive Glucose Monitoring Using Polarized Light. *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2020.
- [26] Charles J. Carver*, Zhao Tian*, Hongyong Zhang, Kofi M. Odame, Alberto Quattrini Li, and **Xia Zhou**. AmphiLight: Direct Air-Water Communication with Laser Light. *The 17th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, 2020. (* Co-primary author)
Best Paper Award.
- [27] Zhao Tian, Charles J. Carver, Qijia Shao, Monika Roznere, Alberto Quattrini Li, and **Xia Zhou**. PolarTag: Invisible Data with Light Polarization. *The Workshop on Mobile Computing Systems and Applications (HotMobile)*, 2020.
Best Demo Award.
- [28] José Camacho, Chris McDonald, Ronald Peterson, **Xia Zhou**, and David Kotz. Longitudinal analysis of a campus Wi-Fi network. *Computer Networks*, Volume 170, April 2020, 107103.
- [29] Pin-Sung Ku, Qijia Shao, Te-Yen Wu, Jun Gong, Ziyang Zhu, **Xia Zhou**, and Xing-Dong Yang. ThreadSense: Locating Touch on an Extremely Thin Interactive Thread. *The ACM CHI Conference on Human Factors in Computing Systems (CHI)*, 2020.

- [30] Charles J. Carver, Tianxing Li, and **Xia Zhou**. Lighting the way to wireless efficiency. *XRDS* 26, 1 (September 2019), 28–31.
- [31] Ruibo Liu, Qijia Shao, Siqi Wang, Christina Ru, Devin Balkcom, and **Xia Zhou**. Reconstructing Human Joint Motion with Computational Fabrics. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Volume 3, Issue 1, 2019.
Featured in NSF "4 Awesome Discoveries You Probably Didn't Hear About This Week".
- [32] Tianxing Li and **Xia Zhou**. Battery-Free Eye Tracker on Glasses. *ACM Conference on Mobile Computing and Networking (MobiCom)*, October/November 2018.
- [33] Yichen Li*, Tianxing Li*, Ruchir A. Patel, Xing-Dong Yang, and **Xia Zhou**. Self-Powered Gesture Recognition with Ambient Light. *ACM Symposium on User Interface Software and Technology (UIST)*, October 2018.
(* Co-primary author)
- [34] Zhao Tian*, Yu-Lin Wei*, Wei-Nin Chang, Xi Xiong, Changxi Zheng, Hsin-Mu Tsai, Kate Ching-Ju Lin, and **Xia Zhou**. Augmenting Indoor Inertial Tracking with Polarized Light. *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, 2018.
(* Co-primary author)
- [35] Alessandro Montanari*, Zhao Tian*, Elena Francu, Benjamin Lucas, Brian Jones, **Xia Zhou**, and Cecilia Mascolo. Measuring Interaction Proxemics with Wearable Light Tags. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Volume 2 Issue 1, 2018. Presented at *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2018.
(* Co-primary author)
- [36] Xi Xiong, Justin Chan, Ethan Yu, Nisha Kumari, Ardalan Amiri Sani, Changxi Zheng, and **Xia Zhou**. Customizing Indoor Wireless Coverage via 3D-Fabricated Reflectors. *ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys)*, 2017.
- [37] Tianxing Li, Qiang Liu, and **Xia Zhou**. Ultra-Low Power Gaze Tracking for Virtual Reality. *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2017.
Best Paper Candidate. SIGMobile Research Highlights.
- [38] Jun Gong, Yang Zhang, **Xia Zhou**, and Xing-Dong Yang. Pyro: Thumb-Tip Gesture Recognition Using Pyroelectric Infrared Sensing. *ACM Symposium on User Interface Software and Technology (UIST)*, 2017.
- [39] Zhao Tian, Yu-Lin Wei, Xi Xiong, Wei-Nin Chang, Hsin-Mu Tsai, Kate Ching-Ju Lin, Changxi Zheng, and **Xia Zhou**. Position: Augmenting Inertial Tracking with Light. *ACM Workshop on Visible Light Communication Systems (VLCS)*, 2017.
- [40] Tianxing Li*, Xi Xiong*, Yifei Xie, George Hito, Xing-Dong Yang, and **Xia Zhou**. Reconstructing Hand Poses Using Visible Light. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*, Volume 1 Issue 3, 2017. Presented at *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2017.
(* Co-primary author)
- [41] Rui Wang, Fanglin Chen, Zhenyu Chen, Tianxing Li, Gabriella Harari, Stefanie Tignor, **Xia Zhou**, Dror Ben-Zeev, and Andrew T. Campbell. StudentLife: Using Smartphones to Assess Mental Health and Academic Performance of College Students. In *Mobile Health*, pp. 7-33. Springer, Cham, 2017.
- [42] Ana Nika, Zhijing Li, Yanzi Zhu, Yibo Zhu, Ben Y. Zhao, **Xia Zhou**, and Haitao Zheng. Empirical Validation of Commodity Spectrum Monitoring. *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2016.

- [43] Zhao Tian, Kevin Wright, and **Xia Zhou**. The DarkLight Rises: Visible Light Communication in the Dark. *ACM Conference on Mobile Computing and Networking (MobiCom)*, 2016.
Best Video Award.
- [44] Ethan Yu, Xi Xiong, and **Xia Zhou**. Automating 3D Wireless Measurements with Drones. *ACM International Workshop on Wireless Network Testbeds, Experimental evaluation & Characterization (WiNTECH)*, 2016.
- [45] Tianxing Li, Qiang Liu, and **Xia Zhou**. Practical Human Sensing in the Light. *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, 2016.
SIGMobile Research Highlights.
- [46] Zhao Tian, Kevin Wright, and **Xia Zhou**. Lighting Up the Internet of Things with DarkVLC. *The Workshop on Mobile Computing Systems and Applications (HotMobile)*, 2016.
- [47] Sophia Haim, Rui Wang, Lorie Loeb, **Xia Zhou**, and Andrew T. Campbell. The Mobile Photographic Stress Meter (MPSM): A New Way to Measure Stress Using Images. *The International Workshop on Mobile Systems for Computational Social Science (MCSS)*, 2015.
- [48] Rui Wang, **Xia Zhou**, and Andrew T. Campbell. Using Opportunistic Face Logging from Smartphone to Infer Mental Health: Challenges and Future Directions. *The International Workshop on Mobile Systems for Computational Social Science (MCSS)*, 2015.
- [49] Justin Chan, Changxi Zheng, and **Xia Zhou**. 3D Printing Your Wireless Coverage. *ACM Workshop on Hot Topics in Wireless (HotWireless)*, 2015.
Hot Paper Award.
- [50] Tianxing Li, Chuankai An, Zhao Tian, Andrew T. Campbell, and **Xia Zhou**. Human Sensing Using Visible Light Communication. *ACM Conference on Mobile Computing and Networking (MobiCom)*, 2015.
Best Video Award.
- [51] Chuankai An, Tianxing Li, Zhao Tian, Andrew T. Campbell, and **Xia Zhou**. Visible Light Knows Who You Are. *ACM Workshop on Visible Light Communication Systems (VLCS)*, 2015.
- [52] Tianxing Li, Chuankai An, Ranveer Chandra, Andrew T. Campbell, and **Xia Zhou**. Low-Power Pervasive Wi-Fi Connectivity Using WiScan. *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2015.
- [53] Rui Wang, Peilin Hao, Gabriella Harari, **Xia Zhou**, and Andrew T. Campbell. SmartGPA: How Smartphones Can Assess and Predict Academic Performance of College Students. *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2015.
Honorable Mention Award.
- [54] Tianxing Li, Chuankai An, Xinran Xiao, Andrew T. Campbell, and **Xia Zhou**. Real-Time Screen-Camera Communication Behind Any Scene. *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*, 2015.
Best Demo Award.
- [55] Ana Nika, Yibo Zhu, Ning Ding, Abhilash Jindal, Y. Charlie Hu, **Xia Zhou**, Ben Y. Zhao and Haitao Zheng. Energy and Performance of Smartphone Radio Bundling in Outdoor Environments. *The International World Wide Web Conference (WWW)*, 2015.
- [56] Rui Wang, Fanglin Chen, Zhenyu Chen, Tianxing Li, Gabriella Harari, Stefanie Tignor, **Xia Zhou**, Dror Ben-Zeev, and Andrew T. Campbell. StudentLife: Assessing Behavioral Trends, Mental Well-being and Academic Performance of College Students using Smartphones. *ACM International Joint Conference on*

Pervasive and Ubiquitous Computing (UbiComp), 2014.

Best Paper Nominee.

- [57] **Xia Zhou** and Andrew T. Campbell. Visible Light Networking and Sensing. *ACM Workshop on Hot Topics in Wireless (HotWireless)*, 2014.
- [58] Ana Nika, Zengbin Zhang, **Xia Zhou**, Ben Y. Zhao, and Haitao Zheng. Towards Commoditized Real-time Spectrum Monitoring. *ACM Workshop on Hot Topics in Wireless (HotWireless)*, 2014.
- [59] Tianxing Li, Chuankai An, Andrew T. Campbell, and **Xia Zhou**. HiLight: Hiding Bits in Pixel Translucency Changes. *ACM Workshop on Visible Light Communication Systems (VLCS)*, 2014.

Best Paper Award.

- [60] Yibo Zhu, **Xia Zhou**, Zengbin Zhang, Lin Zhou, Amin Vahdat, Ben Y. Zhao and Haitao Zheng. Cutting the Cord: a Robust Wireless Facilities Network for Data Centers. *ACM Conference on Mobile Computing and Networking (MobiCom)*, 2014.
- [61] Fanglin Chen, Rui Wang, **Xia Zhou**, and Andrew T. Campbell. My Smartphone Knows I am Hungry. *ACM the 1st workshop on Physical Analytics (WPA)*, 2014.
- [62] **Xia Zhou**, Zengbin Zhang, Gang Wang, Xiaoxiao Yu, Ben Y. Zhao, and Haitao Zheng. Practical Conflict Graphs in the Wild. *IEEE/ACM Transactions on Networking (ToN)*, 2014.
- [63] **Xia Zhou**, Zengbin Zhang, Gang Wang, Xiaoxiao Yu, Ben Y. Zhao, and Haitao Zheng. Practical Conflict Graphs for Dynamic Spectrum Distribution. *ACM Annual Conference of Special Interest Group on Performance Evaluation (SIGMETRICS)*, 2013.

Best Practical Paper Award.

- [64] **Xia Zhou**, Zengbin Zhang, Yibo Zhu, Yubo Li, Saipriya Kumar, Amin Vahdat, Ben Y. Zhao, and Haitao Zheng. Mirror Mirror on the Ceiling: Flexible Wireless Links for Data Centers. *ACM Annual Conference of the Special Interest Group on Data Communication (SIGCOMM)*, 2012.
- [65] Weile Zhang, **Xia Zhou**, Lei Yang, Zengbin Zhang, Ben Y. Zhao, and Haitao Zheng. 3D Beamforming for Wireless Data Centers. *ACM Workshop on Hot Topics in Networks (HotNets)*, 2011.
- [66] Zengbin Zhang, **Xia Zhou**, Weile Zhang, Yuanyang Zhang, Gang Wang, Ben Y. Zhao, and Haitao Zheng. I Am the Antenna: Accurate Outdoor AP Location using Smartphones. *ACM Conference on Mobile Computing and Networking (MobiCom)*, 2011.
- [67] **Xia Zhou**, Stratis Ioannidis, and Laurent Massoulié. On the Stability and Optimality of Universal Swarms. *ACM Annual Conference of Special Interest Group on Performance Evaluation (SIGMETRICS)*, 2011.
- [68] Lara Deek, **Xia Zhou**, Kevin Almeroth, and Haitao Zheng. To Preempt or Not: Tackling Bid and Time-based Cheating in Online Spectrum Auctions. *IEEE Conference on Computer Communications (INFOCOM)*, 2011.
- [69] **Xia Zhou** and Haitao Zheng. Breaking Bidder Collusion in Large-Scale Spectrum Auctions. *ACM Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, 2010.
- [70] Lili Cao, Lei Yang, **Xia Zhou**, Zengbin Zhang, and Haitao Zheng. Optimus: SINR-Driven Spectrum Distribution via Constraint Transformation. *IEEE Symposium on New Frontier in Dynamic Spectrum Access Networks (DySPAN)*, 2010.
- [71] **Xia Zhou**, Heather Zheng, Maziar Nekovee, and Milind M. Buddhikot. Auction-based Spectrum Markets in Cognitive Radio Networks. Book chapter in *Cognitive Radio Communications and Networks*, Academic Press, 2009.

- [72] **Xia Zhou** and Haitao Zheng. TRUST: A General Framework for Truthful Double Spectrum Auctions. *IEEE Conference on Computer Communications (INFOCOM)*, 2009.
- [73] **Xia Zhou**, Sorabh Gandhi, Subhash Suri, and Haitao Zheng. eBay in the Sky: Strategy-Proof Wireless Spectrum Auctions. *ACM Conference on Mobile Computing and Networking (MobiCom)*, 2008.
Best Paper Award Finalist.
- [74] **Xia Zhou**, Shravan Mettu, Heather Zheng, and Elizabeth M. Belding. Traffic-Driven Dynamic Spectrum Auctions. *IEEE Workshop on Networking Technologies for Software Defined Radio Networks (WSDR)*, 2008.
- [75] **Xia Zhou**, Jun Zhao, and Guanghua Yang. Correlation based Rate Adaptation via Insights from Incomplete Observations in 802.11 Networks. *IEEE Conference on Communications (ICC)*, 2007.
- [76] Zhen Cao, **Xia Zhou**, Maoxing Xu, Zhong Chen, Jianbin Hu and Liyong Tang. Enhancing Base Station Security against DoS Attacks in Wireless Sensor Networks. *IEEE Conference on Wireless Communications Networking and Mobile Computing (WiCOM)*, 2006.
- [77] Zhen Cao, Jianbin Hu, Zhong Chen, Maoxing Xu, and **Xia Zhou**. Feedback: Towards Dynamic Behavior and Secure Routing for Wireless Sensor Networks. *IEEE Conference on Advanced Information Networking and Application (AINA)*, 2006.

Patents

- [1] US Provisional patent 64/000,557. Noninvasive Glucose Monitoring based on Optical Polarization. Filed on Mar. 9, 2026.
- [2] US Provisional patent 63/895,433. Systems and Methods for Live Optical Signatures for Protecting the Integrity of Speech Videos. Filed on Oct. 8, 2025.
- [3] US12244343B2. High speed communication with wide area moveable receivers using invisible light. Mar. 4, 2025.
- [4] US12001028B2. Speckle-suppressing lighting system. Jun. 4, 2024.
- [5] US20230399130A1. Localizing Underwater Robots from the Air. Dec. 14, 2023.
- [6] US11307656B2. View-through sensors and apparatuses for tracking eye movement, and methods and software therefor. Apr. 19, 2022.
- [7] US20200405195A1. Computational fabrics for monitoring human joint motion. Dec. 31, 2020.
- [8] WO2020072760A1. Self-powered gesture recognition with ambient light. Apr. 9, 2020.
- [9] US20190115916A1. Infrared-Based Gesture Sensing And Detection Systems, And Apparatuses, Software, And Methods Relating To Same. Apr. 18, 2019.
- [10] US20210176705A1. Energy efficient network connectivity maximization. Jun. 10, 2021.
- [11] US9553914B2. Replicating Data. Jan. 24, 2017.
- [12] US20080316926A1. Correlation-Based Rate Adaptation for Communication Networks. Dec. 25, 2008.

Professional Activities

Editorial Boards:

- ACM GetMobile Magazine, 2016 – 2024.
- Guest Editor of the Special Issue "Lighting Up Wireless Communication, Sensing, and Power Delivery" for Sensors Journal, 2023.
- Associate editor of the Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2019 – 2021
- IEEE/ACM Transaction of Networking, 2016 – 2018

Technical Program Committees:

- ACM MobiSys 2026, 2025, 2024, 2023, 2020, 2019, 2018, 2017, 2016

- ACM MobiCom 2025, 2024, 2023, 2021, 2020, 2019, 2018, 2017, 2016, 2015
- ACM SenSys 2018
- ACM HotMobile 2019, 2018.
- ACM IMC 2018
- ACM Workshop on Visible Light Communication Systems (VLCS) 2017, 2015
- ACM Workshop on Physical Analytics (WPA) 2017
- ACM Workshop on Wearable Systems and Applications (WearSys) 2017, 2016
- WWW 2017
- ACM SIGMETRICS 2016, 2014
- ACM Workshop on Wireless Network Testbeds, Experimental Evaluation and Characterization 2016
- IEEE Conference on Computer Communications (INFOCOM) 2016
- ACM Workshop on Hot Topics in Wireless (HotWireless) 2016, 2015, 2014
- ACM SIGCOMM Poster/Demo/SRC Session 2014
- ACM SIGCOMM Workshop on All Things Cellular 2014
- IEEE CNS 2014
- ACM MobiHoc 2014
- IEEE SECON 2014
- ACM MobiCom Demos 2013

Conference Organization:

- Co-chair of Rising Stars Forum of ACM MobiSys 2026
- Publication co-chair of ACM SIGCOMM 2023
- Co-organizer of Dagstuhl Seminar Novel Scenarios for the Wireless Internet of Things, 2023
- Co-Chair of Technical Program Committee of ACM MobiSys, 2021
- Publicity Co-Chair of ACM MobiCom, 2020
- Co-Chair of Technical Program Committee of ACM SenSys, 2019
- Demo Co-Chair of ACM MobiCom, 2019
- Co-Chair of NSF NeTS Early Career Workshop 2017
- Co-Chair of ACM Workshop on Hot Topics in Wireless (HotWireless) 2017
- Co-Chair of Women's Workshop collocated with MobiSys, 2017, 2016
- Publicity Co-Chair of ACM MobiSys 2017
- Co-Chair of ACM Workshop on Physical Analytics (WPA) 2016
- Co-Chair of ACM Workshop on Visible Light Communication Systems (VLCS) 2016
- Demo/Poster/Video Co-Chair of ACM MobiSys 2016
- Publicity Chair of ACM HotWireless 2015
- Publicity Co-Chair of ACM MobiCom 2015
- Workshop Co-Chair of ACM MobiSys 2015, 2014
- Publicity Chair of ACM HotMobile 2015

Community Service:

- ACM SIGMOBILE Research Highlight Committee Chair. 2026 – present
- ACM MobiSys Steering Committee, 2022 – present
- ACM SIGMOBILE Research Highlight Committee. 2022 – 2025
- ACM SenSys Steering Committee, 2018 - 2022
- ACM SIGMOBILE Dissertation Award committee, 2023
- ACM SIGMOBILE Rockstar committee. 2019 - 2024
- ACM IMWUT Distinguished Papers Award committee, 2022, 2021
- ACM SIGMOBILE Information Director, 2017 – 2021

Selected Press

- [1] Soft Fabric Necklace Monitors Care of Preterm, Low-Birth-Weight Infants. June 2024.
<https://www.engineering.columbia.edu/about/news/soft-fabric-necklace-monitors-care-preterm-low-birth-weight-infants>
- [2] Using light to move wireless data faster. Science Nation. March 2019.
https://nsf.gov/news/mmg/mmg_disp.jsp?med_id=185691&from=
- [3] Named in the 2018 IT List in New Hampshire Magazine. <https://www.nhmagazine.com/December-2018/2018-It-List/>
- [4] Eye-tracking glasses may give new vision for Augmented Reality. Yahoo! News, October 30, 2018.
<https://sg.news.yahoo.com/eye-tracking-glasses-may-vision-augmented-reality-123604542--finance.html>
- [5] Device Decodes Body Language Using Infrared Light. The University Network, April 17, 2018.
<https://www.tun.com/blog/device-decodes-body-language-using-infrared-light/>
- [6] Featured in Keep the Cloud Weird by Packet. <https://www.packet.com/weird/>
- [7] How to use a common household product to boost your WiFi signal. Newsweek, November 14, 2017.
<http://www.newsweek.com/how-use-common-household-product-boost-your-wifi-signal-711539>
- [8] Tinfoil hat for your router stops bad guys snooping your Wi-Fi. New Scientist, November 13, 2017.
<https://www.newscientist.com/article/2153032-tinfoil-hat-for-your-router-stops-bad-guys-snooping-your-wi-fi/>
- [9] You can use aluminum foil to strengthen your Wi-Fi signal. Popular Science, November 10, 2017.
<https://www.popsci.com/aluminum-strengthen-wi-fi-signal>
- [10] Researchers discover aluminum foil actually does improve your wireless speed, Techcrunch, November 8, 2017.
<https://techcrunch.com/2017/11/08/researchers-discover-aluminum-foil-actually-does-improve-your-wireless-speed/>
- [11] How Light Bulbs Watch You Buy Groceries. The Atlantic, November 18, 2016.
<http://www.theatlantic.com/technology/archive/2016/11/how-light-bulbs-watch-you-buy-groceries/508061/>
- [12] Communicating invisibly with dimmed down visible light. EE Times, October 20, 2016.
<http://www.electronics-eetimes.com/news/communicating-invisibly-dimmed-down-visible-light>
- [13] Visible light communication now possible in the dark. New Electronics, October 4, 2016.
<http://www.newelectronics.co.uk/electronics-news/visible-light-communication-now-possible-in-the-dark/146497/>
- [14] Smart Lighting Follows People. Communications of the ACM, August 16, 2016.
<http://cacm.acm.org/news/205978-smart-lighting-follows-people/>
- [15] Team uses smart light to track human behavior. Phys.ORG, June 15, 2016.
<http://phys.org/news/2016-06-team-smart-track-human-behavior.html>
- [16] Smart Light Captures Body in Motion. Biophotonics, October, 2015.
<http://www.photonics.com/Article.aspx?AID=57820>
- [17] Smart light lets you control your environment. Gizmag, August 19, 2015. <http://www.gizmag.com/smart-light/38872/>
- [18] Team uses smart light, shadows to track human posture. Phys.ORG, August 11, 2015.
<http://phys.org/news/2015-08-team-smart-shadows-track-human.html>

- [19] Researchers Test First 'Smart Spaces' Using Light to Send Data. Communications of the ACM, November 17, 2014. <http://cacm.acm.org/news/180506-researchers-test-first-smart-spaces-using-light-to-send-data/fulltext>
- [20] Dartmouth's Newest Networker Pursues Smartphone Stamina. April 4, 2014. Dartmouth Now. <http://now.dartmouth.edu/2014/04/dartmouths-newest-networker-pursues-smartphone-stamina/>
- [21] Going wireless in the data center. ComputerWorld, May 7, 2012. http://www.computerworld.com/s/article/9226889/Going_Wireless_in_the_Data_Center
- [22] Bouncing Data. MIT Technology Review, February 21, 2012. <http://www.technologyreview.com/computing/39651>
- [23] A Wireless Road Around Data Traffic Jams. New York Times, January 14, 2012. <http://www.nytimes.com/2012/01/15/business/a-wireless-way-around-data-center-traffic-jams.html>
- [24] Bouncing signals off ceiling can rev up data centers. Phys.ORG, December 21, 2011. <http://phys.org/news/2011-12-ceiling-rev-centers.html>
- [25] Bouncing Data Would Speed Up Data Centers. MIT Technology Review, December 20, 2011. <http://www.technologyreview.com/communications/39367/>
- [26] Speeding up the Internet by bouncing data off the ceiling. ExtremeTech, December 20, 2011. <http://www.extremetech.com/extreme/109765-speeding-up-the-internet-by-bouncing-data-off-the-ceiling>
- [27] Forget Ethernet, researchers want data centers to go wireless. GigaOM, December 20, 2011. <http://gigaom.com/cloud/forget-ethernet-researchers-want-data-centers-to-go-wireless>