

<b>CONTACT INFORMATION</b>	Electrical & Computer Engineering Department Volgenau School of Engineering George Mason University Fairfax VA, USA 22030	Office: +1(703)993-1617 Email: xchen26@gmu.edu
<b>RESEARCH INTERESTS</b>	<p><b>Computing Systems</b></p> <ul style="list-style-type: none"> <li>• Distributed and Collaborative Computing Systems</li> <li>• Edge Computing and Mobile Applications</li> <li>• High-Performance Computing</li> </ul> <p><b>Artificial Intelligence (AI)</b></p> <ul style="list-style-type: none"> <li>• Deep Learning Algorithms, Systems, and Middleware Designs</li> <li>• Trustworthy AI and Reliable AI Systems</li> </ul> <p><b>Electronic Design Automation (EDA)</b></p> <ul style="list-style-type: none"> <li>• Low Power System Analysis and Optimization</li> <li>• Mobile System Module Design (Sensor, Display, etc.)</li> </ul>	
<b>EDUCATION BACKGROUND</b>	<p><b>University of Pittsburgh, Pittsburgh PA, USA</b></p> <ul style="list-style-type: none"> <li>• Degree: Ph.D. Major: Computer Engineering 2012~2016</li> <li>• Degree: M.S. Major: Electrical Engineering 2010~2012</li> <li>• Adviser: Prof. <b>Yiran Chen</b> (currently, Duke University)</li> </ul> <p><b>Northeastern University, Shenyang, China</b></p> <ul style="list-style-type: none"> <li>• Degree: Bachelor Major: Automation 2006~2010</li> </ul>	
<b>PROFESSIONAL EXPERIENCES</b>	<p><b>George Mason University</b> Fairfax VA, USA Sep. 2016~Present Tenure-Track Assistant Professor</p> <p><b>Caritas Institute of Higher Education</b> Hong Kong Jul. 2017~Aug. 2017 Visiting Scholar</p> <p><b>City University of Hong Kong</b> Hong Kong Jun. 2015~Aug. 2015 Visiting Scholar</p> <p><b>Microsoft Research Asia</b> Beijing, China. Jun. 2014~Sep. 2014 Research Intern</p> <p><b>Samsung Research and Development</b> Dallas TX, USA Jul. 2013~Nov. 2013 Research Intern Sep. 2012~Dec. 2012</p>	
<b>AWARDS &amp; HONORS</b>	<p><b>Best Paper Awards and Nominations</b></p> <ul style="list-style-type: none"> <li>• <b>Best Paper Award — MLSys</b> 2022 The 5<sup>th</sup> Conference on Machine Learning and Systems “QuadraLib: A Performant Quadratic Neural Network Library for Architecture Optimization and Design Exploration”</li> <li>• <b>Best Paper Award — DATE</b> 2017 The 17<sup>th</sup> International Conference on Design Automation and Test in Europe “MoDNN: Local Distributed Mobile Computing System for Deep Neural Network”</li> </ul>	

AWARDS  
&  
HONORS  
(CONT'D)

- **Best Poster Award — MLSys-CrossFL** 2022  
The 5<sup>th</sup> Conference on Machine Learning and Systems (MLSys) Workshop on Cross Community Federated Learning, 2022.
- **Best Poster Award — ACM-SIGDA-SRF** 2015  
ACM Special Interest Group on Design Automation (SIGDA) Student Research Forum (SRF) Competition, associated with The 20<sup>th</sup> Asia and South Pacific Design Automation Conference (ASP-DAC), 2015.
- **Best Paper Award Nomination — DATE** 2020  
The 20<sup>th</sup> International Conference on Design Automation and Test in Europe “Attention-based Dynamic Optimization for Neural Network Runtime Efficiency”
- **Best Paper Award Nomination — ICCAD** 2016  
The 35<sup>th</sup> International Conference on Computer-Aided Design “Scope: Quality Retaining Display Rendering Workload Scaling based on User-Smartphone Distance”

**Competition Awards**

- **Winner Award — IEEE Services Hackathon** 2020  
“Federated Learning System for Transportation Mode Prediction based on Personal Mobility,” Hackathon Competition collocated with the IEEE World Congress on Services.
- **Second Prize — Big Idea Competition** 2014  
“Invisible Shield,” Randall Family Big Idea Start-up Competition, Pittsburgh PA.
- **Third Prize — ACM-SIGDA-SRF** 2012  
ACM Special Interest Group on Design Automation (SIGDA), Student Research Forum (SRF) Competition, associated with The 49<sup>th</sup> Design Automation Conference (DAC).

**Other Awards and Recognitions**

- **National Science Foundation CAREER Award** 2022  
“Adapt, Learn, Collaborate — Closing the Pervasive Edge AI Loop with Liquid Intelligence”
- **Microsoft Excellence Award** 2015  
Star of Tomorrow Research Internship Program (1% of 500)

RESEARCH  
GRANTS

**Federal Research Funding**

(Total Funding Collected: ~\$2M / Total Personal Allocated: ~\$1.26M)

- **National Science Foundation CNS-2146421** **Principal Investigator**  
“CAREER: Adapt, Learn, Collaborate — Closing the Pervasive Edge AI Loop with Liquid Intelligence.” \$580,000 (100%), 7/1/2022~6/30/2027.
- **National Science Foundation CNS-2003211** **Principal Investigator**  
“MLWiNS: Decentralized Heterogeneous Deep Learning for Efficient Wireless Spectrum Monitoring.” \$499,999 (60%) 10/1/2020~9/30/2023.
- **National Science Foundation CNS-1717775** **Principal Investigator**  
“CSR: Small: Collaborative Research: EURECa: Enabling Untethered VR/AR System via Human-centric Graphic Computing and Distributed Data Processing.” \$500,000 (50%), 9/1/2017~8/31/2021.
- **Air Force Research Lab FA8750-21-1-1015** **Sub-Contractor**  
“Out-of-Distribution Detection and Physical Adversarial Patch Investigation.” \$419,704 (31%), 9/14/2021~9/13/2023.

RESEARCH  
GRANTS  
(CONT'D)

**Awards and Scholarships** (*Total Award Collected: ~\$45K*)

- **IEEE Services Hackathon**  
“Federated Learning System for Transportation Mode Prediction based on Personal Mobility.” **\$1,000**, 1/1/2018~12/31/2021.
- **Innovation Works TCC University Grant**  
“Invisible Shield: Device Security via Gesture Authentication.” **\$25,000**, 2014~2015.
- **University of Pittsburgh Innovation Institute — Pitt Ventures**  
“The Invisible Shield: User Classification and Authentication for Mobile Device Based on Continuous Gesture Recognition.” **\$16,000**, 2014~2015.
- **Intel Cornell Cup — System Design Competition**  
“Koalakollar: Squad Tracking and Isolation Event Alert System.” **\$3,000**, 2013.

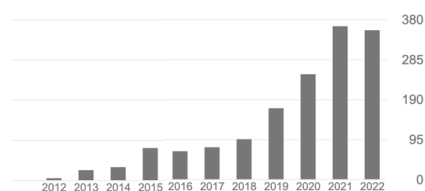
**Other Funding Management** (*Do not count towards the overall funding achievement.*)

- **National Science Foundation IIS-1741338** Substitute-PI  
“BIGDATA: F: Collaborative Research: Acquisition, Collection and Computation of Dynamic Big Sensory Data in Smart Cities.” **\$282,528**, 1/1/2018~12/31/2021.
- **National Science Foundation CCF-1527396** Substitute-PI  
“CIF: Small: Task-Cognizant Sparse Sensing for Inference.”  
**\$400,000**, 10/1/2017~7/31/2020.
- **National Science Foundation CNS-1704274** Substitute-PI  
“SaTC: CORE: Medium: Collaborative: Privacy Attacks and Defense Mechanisms in Online Social Networks.” **\$276,966**, 9/1/2017~8/31/2021.
- **National Science Foundation AST-1547329** Substitute-PI  
“EARS: Collaborative Research: Spectrum Sensing for Coexistence of Active and Passive Radio Services.” **\$295,691**, 1/1/2016~12/31/2019.

PUBLICATION  
RECORDS

**Google Citations** (*It may deviate from other records: ~1500 / H-index = 20*)

Note: \* and \* in front of the author list indicate the first author is supervised or co-supervised by me, respectively. Especially for supervised papers, I am located at the end of the list, which is usually reserved for the corresponding author. And ° indicates my first-authored papers. If neither my student nor I am the first author of the publication, usually that is a collaborated work led by some other researchers, and I give full credit to the leading collaborators for the publication.



**Book Chapters** (*Total: 1*)

**Ch-1** ° X. Chen, Z. Xu, and F. Yu. “Mobile Computer Framework for Federated Learning,” *Federated Learning: Theory and Practice*, Springer, 2022, in press.

**Refereed Journal Articles** (*Total: 11*)

**J-1.** [IEEE-TC '22] \* Z. Xu, F. Yu, J. Xiong, and X. Chen. “HeliosX: Heterogeneity-Aware Federated Learning for Dynamic Edge Collaboration Management,” *IEEE Transactions on Computers*, to appear.

- J-2.** [IEEE-TC '22] \* F. Yu, W. Zhang, Z. Qin, Z. Xu, D. Wang, C. Liu, Z. Tian, and X. Chen. "Fed<sup>2</sup>X: Feature-Aligned Large-Scale Federated Learning Systems," *IEEE Transactions on Computers*, to appear.
- J-3.** [IEEE-TC '22] \* Z. Xu, F. Yu, C. Liu, and X. Chen. "FalConX: Fine-grained Feature Map Sparsity Computing with Decomposed Convolutions," *IEEE Transactions on Computers*, to appear.
- J-4.** [ACM-TECS '22] \* Z. Xu, F. Yu, and X. Chen. "LanCeX: A Versatile and Lightweight Defense Method against Condensed Adversarial Attacks," *ACM Transactions on Embedded Computing Systems*, Aug. 2022.
- J-5.** [IEEE-TCAD '22] \* F. Yu, C. Liu, D. Wang, Y. Wang and X. Chen. "AntiDoteX: Attention-based Neural Network Runtime Efficiency Dynamic Optimization," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, Jan. 2022.
- J-6.** [JMLR '21] \* P. Xu, Y. Wang, X. Chen, and Z. Tian. "COKE: Communication-Censored Decentralized Kernel Learning," *Journal of Machine Learning Research*, Vol. 22, No. 196, pp. 1~35, Oct. 2021.
- J-7.** [IEEE-TCAD '21] \* Z. Qin, F. Yu, Z. Xu, C. Liu, and X. Chen. "CaptorX: A Class-Adaptive Convolutional Neural Network Reconfiguration Framework," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, Feb. 2021.
- J-8.** [IEEE-TCAD '20] \* F. Yu, Z. Qin, C. Liu, D. Wang, and X. Chen. "REIN the RobuTS: Robust DNN-based Image Recognition in Autonomous Driving Systems," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, Oct. 2020.
- J-9.** [IEEE-TCAD '20] \* Z. Xu, F. Yu, C. Liu, and X. Chen. "DiReCtX: Dynamic Resource-Aware CNN Reconfiguration Framework for Real-Time Mobile Application," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, May 2020.
- J-10.** [AMC-MFC '18] \* Z. Qin, F. Yu, C. Liu, and X. Chen. "How Convolutional Neural Networks See the World — A Survey of Convolutional Neural Network Visualization Methods," *Advances in Mathematics of Communications Journal on Mathematical Foundations of Computing*, Vol. 1, Iss. 2, No. 149, pp. 149~180, May 2018.
- J-11.** [ACM-ETCS '12] Z. Sun, X. Chen, Y. Zhang, H. Li, and Y. Chen. "Non-volatile Memories as the Data Storage System for Implantable ECG Recorder," *ACM Journal on Emerging Technologies in Computing Systems*, Vol. 8, Iss. 2, No. 13, pp. 1~16, Jun. 2012.

**Peer Reviewed Conference Publications (Total: 50)**

- C-1.** [ICC '22] \* W. Zhang, Y. Wang, F. Yu, Z. Qin, X. Chen, and Z. Tian. "Wideband Spectrum Sensing based on Collaborative Multi-Task Learning," in *Proceedings of the International Conference on Communication*, pp. 1~6, 2022.
- C-2.** [ICCCASP '22] \* P. Xu, Y. Wang, X. Chen, and Z. Tian. "Deep Kernel Learning Network with Multiple Learning Paths," in *Proceedings of the International Conference on Acoustics, Speech, & Signal Processing*, pp. 4438~4442, 2022.
- C-3.** [MLSys '22] \* Z. Xu, F. Yu, J. Xiong, and X. Chen. "QuadraLib: A Performant Quadratic Neural Network Library for Architecture Optimization and Design Exploration," in *Proceedings of the Conference on Machine Learning and Systems*, pp. 503~514, 2022.

- C-4.** [WACV '22] \* Z. Xu, F. Yu, C. Liu, H. Wang, and X. Chen. "FalCon: Fine-grained Feature Map Sparsity Computing with Decomposed Convolutions for Inference Optimization," in *Proceedings of the Winter Conference on Applications of Computer Vision*, pp. 3634~3644, 2022.
- C-5.** [WACV '22] \* F. Yu, D. Wang, Y. Chen, N. Karianakis, T. Shen, P Yu, D. Lymberopoulos, S. Lu, W. Shi, and X. Chen. "SC-UDA: Style and Content Gap Aware Unsupervised Domain Adaptation for Object Detection," in *Proceedings of the Winter Conference on Applications of Computer Vision*, pp. 1061~1070, 2022.
- C-6.** [ICCAD '21] \* F. Yu, S. Bray, D. Wang, L. Shangguan, X. Tang, C. Liu, and X. Chen. "Automated Runtime-Aware Scheduling for Multi-Tenant DNN Inference on GPU," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 1~9, 2021.
- C-7.** [DAC '21] \* Z. Xu, F. Yu, J. Xiong, and X. Chen. "Helios: Heterogeneity-Aware Federated Learning with Dynamically Balanced Collaboration," in *Proceedings of the Design Automation Conference*, pp. 997~1022, 2021.
- C-8.** [KDD '21] \* F. Yu, W. Zhang, Z. Qin, Z. Xu, D. Wang, C. Liu, Z. Tian, and X. Chen. "Fed<sup>2</sup>: Feature-Aligned Federated Learning," in *Proceedings of the ACM SigKDD Conference on Knowledge Discovery and Data Mining*, pp. 2066~2074, 2021.
- C-9.** [SEC '20] \* F. Yu, D. Stamoulis, D. Wang, D. Lymberopoulos, and X. Chen. "Exploring the Design Space of Efficient Deep Neural Networks," in *Proceedings of the ACM/IEEE Symposium on Edge Computing*, pp. 317~318, 2020.
- C-10.** [SEC '20] ° X. Chen and Z. Qin. "Exploring Decentralized Collaboration in Heterogeneous Edge Training," in *Proceedings of the ACM/IEEE Symposium on Edge Computing*, pp. 450~453, 2020.
- C-11.** [ISLPED '20] C. Liu, F. Yu, Z. Qin, and X. Chen. "Enabling Efficient ReRAM-based Neural Network Computing via Crossbar Structure Adaptive Optimization," in *Proceedings of the ACM/IEEE International Symposium on Low Power Electronics and Design*, pp. 133~138, 2020.
- C-12.** [ECCV '20] X. Ma, W. Niu, T. Zhang, S. Liu, S. Lin, H. Li, X. Chen, J. Tang, K. Ma, B. Ren, and Y. Wang. "An Image Enhancing Pattern-based Sparsity for Real-time Inference on Mobile Devices," in *Proceedings of the European Conference on Computer Vision*, pp. 629~645, 2020.
- C-13.** [DATE '20] \* F. Yu, C. Liu, D. Wang, Y. Wang, and X. Chen. "AntiDOte: Attention-based Dynamic Optimization for Neural Network Runtime Efficiency," in *Proceedings of the International Conference on Design Automation and Test in Europe*, pp. 951~956, 2020.
- C-14.** [DATE '20] \* F. Yu, Z. Qin, D. Wang, P. Xu, C. Liu, Z. Tian, and X. Chen. "DC-CNN: Computational Flow Redefinition for Efficient CNN Inference through Model Structural Decoupling," in *Proceedings of the International Conference on Design Automation and Test in Europe*, pp. 1097~1102, 2020.
- C-15.** [ASP-DAC '20] \* Z. Xu, F. Yu, C. Liu, and X. Chen. "LanCe: A Comprehensive and Lightweight CNN Defense Methodology against Physical Adversarial Attacks on Embedded Multimedia Applications," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 470~475, 2020.

- C-16. [ASP-DAC '20]** X. Ma, G. Yuan, S. Lin, C. Ding, F. Yu, T. Liu, W. Wen, X. Chen, and Y. Wang. "Tiny but Accurate: A Pruned, Quantized and Optimized Memristor Crossbar Framework for Ultra Efficient DNN Implementation," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 301~306, 2020.
- C-17. [CIKM '19]** X. Guo, A. Alipour-Fanid, L. Wu, H. Purohit, X. Chen, K. Zeng, and Liang Zhao. "Multi-stage Deep Classifier Cascades for Open World Recognition," in *Proceedings of the ACM International Conference on Information and Knowledge Management*, pp. 179~188, 2019.
- C-18. [BMVC '19]** \* Z. Qin, F. Yu, C. Liu, and X. Chen. "Functionality-Oriented Convolutional Filter Pruning," in *Proceedings of the British Machine Vision Conf.*, No. 229, 2019.
- C-19. [IJCAI '19]** \* F. Yu, Z. Qin, C. Liu, L. Zhao, Y. Wang, and X. Chen. "Interpreting and Evaluating Neural Network Robustness," in *Proceedings of the International Joint Conference on Artificial Intelligence*, pp. 4199~4205, 2019.
- C-20. [KDD '19]** J. Wang, F. Yu, X. Chen, and L. Zhao. "ADMM for Efficient Deep Learning with Global Convergence," in *Proceedings of the ACM SigKDD Conference on Knowledge Discovery and Data Mining*, pp. 111~119, 2019.
- C-21. [DAC '19]** \* Z. Xu, F. Yu, C. Liu, and X. Chen. "ReForm: Static and Dynamic Resource-Aware DNN Reconfiguration Framework for Mobile Devices," in *Proceedings of the Design Automation Conference*, pp. 183:1~183:6, 2019.
- C-22. [DAC '19]** \* Z. Xu, F. Yu, C. Liu, and X. Chen. "MASKER: Adaptive Mobile Security Enhancement against Automatic Speech Recognition in Eavesdropping," in *Proceedings of the Design Automation Conference*, pp. 163:1~163:6, 2019.
- C-23. [ASP-DAC '19]** \* Z. Xu, F. Yu, C. Liu, and X. Chen. "HAMPER: High-Performance Adaptive Mobile Security Enhancement against Malicious Speech and Image Recognition," in *Proceedings of the Asia and South Pacific Design Automation Conf.*, pp. 512~517, 2019.
- C-24. [ASP-DAC '19]** \* F. Yu, C. Liu, and X. Chen. "REIN: A Robust Training Method for Enhancing Generalization Ability of Neural Networks in Autonomous Driving Systems," in *Proceedings of the Asia and South Pacific Design Automation Conf.*, pp. 456~461, 2019.
- C-25. [ASP-DAC '19]** \* Z. Qin, F. Yu, C. Liu, and X. Chen. "CAPTOR: A Class Adaptive Filter Pruning Framework for Convolutional Neural Networks in Mobile Applications," in *Proceedings of the Asia and South Pacific Design Automation Conf.*, pp. 444~449, 2019.
- C-26. [GlobalSIP '18]** \* Z. Zhang, X. Chen, and Z. Tian. "A Hybrid Neural Network Framework and Application to Radar Automatic Target Recognition," in *Proceedings of the IEEE Global Conference on Signal and Information Processing*, pp. 246~250, 2018.
- C-27. [ISLPED '18]** \* Z. Xu, Z. Qin, F. Yu, C. Liu, and X. Chen. "DiReCt: Resource-Aware Dynamic Model Reconfiguration for Convolutional Neural Network in Mobile Systems," in *Proceedings of the ACM/IEEE International Symposium on Low Power Electronics and Design*, pp. 37:1~37:6, 2018.
- C-28. [ISVLSI '18]** C. Liu, Q. Dong, F. Liu, F. Yu, and X. Chen. "ReRise: An Adversarial Example Restoration System for Neuromorphic Computing Security," in *Proceedings of the IEEE Computer Society Annual Symposium on VLSI*, pp. 470~475, 2018.
- C-29. [ICCAD '17]** \* J. Mao, Z. Qin, Z. Xu, K. Nixon, X. Chen, H. Li, and Y. Chen. "AdaLearner: An Adaptive Distributed Mobile Learning System for Neural Networks," in *Proceedings of the International Conf. on Computer-Aided Design*, pp. 291~296, 2017.

- C-30. [ICCAD '17]** \* Z. Qin, Z. Xu, Q. Dong, Y. Chen, and X. Chen. "VoCaM: Visualization Oriented Convolutional Neural Network Acceleration on Mobile Systems," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 835~840, 2017.
- C-31. [ICCAD '17]** \* J. Mao, Z. Yang, W. Wen, C. Wu, L. Song, K. Nixon, X. Chen, H. Li, and Y. Chen. "MeDNN: A Distributed Mobile System with Enhanced Partition and Deployment for Large-Scale DNNs," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 751~756, 2017.
- C-32. [SoCC '17]** L. Broyde, K. Nixon, X. Chen, and H. Li. "MobiCore: An Adaptive Hybrid Approach for Power-Efficient CPU Management on Android Devices," in *Proceedings of the IEEE International System-on-Chip Conference*, pp. 221~226, 2017.
- C-33. [DATE '17]** \* J. Mao, X. Chen, K. Nixon, C. Krieger, and Y. Chen. "MoDNN: Local Distributed Mobile Computing System for Deep Neural Network," in *Proceedings of the International Conference on Design Automation and Test in Europe*, pp. 1396~1401, 2017.
- C-34. [ICCAD '16]** K. Nixon, X. Chen, and Y. Chen. "Scope: Quality Retaining Display Rendering Workload Scaling based on User-Smartphone Distance," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 1~6, 2016.
- C-35. [RSP '16]** ° X. Chen, J. Mao, K. Nixon, and Y. Chen. "MORPh: Mobile OLED Power Friendly Camera System," in *Proceedings of the International Symposium on Rapid System Prototyping*, pp. 7~11, 2016.
- C-36. [SoCC '16]** ° X. Chen, K. Nixon, and Y. Chen. "Practical Power Consumption Analysis with Current Smartphones," in *Proceedings of the IEEE International System-on-Chip Conference*, pp. 333~337, 2016.
- C-37. [DAC '16]** ° X. Chen, J. Mao, J. Gao, K. Nixon, and Y. Chen. "MORPh: Mobile OLED-friendly Recording and Playback System for Low Power Video Streaming," in *Proceedings of the Design Automation Conference*, pp. 1~6, 2016.
- C-38. [ASP-DAC '16]** K. Nixon, X. Chen, and Y. Chen. "Footfall: GPS Polling Scheduler for Power Saving on Wearable Devices," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 563~568, 2016.
- C-39. [ASP-DAC '16]** K. Nixon, X. Chen, and Y. Chen. "SlowMo: Enhancing Mobile Gesture-based Authentication Schemes via Sampling Rate Optimization," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 462~467, 2016.
- C-40. [DAC '15]** ° X. Chen, J. Xue, and Y. Chen. "DaTuM: Dynamic Tone Mapping Technique for OLED Display Power Saving based on Video Classification," in *Proceedings of Design Automation Conference*, pp. 8~12, 2015.
- C-41. [DAC '14]** ° X. Chen, M. Dong, C. Zhang, and Y. Chen. "Demystify Smartphone Power Consumption: The Evolution of Smartphone Communication Modules," in *Proceedings of the Design Automation Conference*, 2014.
- C-42. [CODES+ISSS '13]** M. Zhao, X. Chen, Y. Chen, and J. Xue. "Online OLED Dynamic Voltage Scaling for Video Streaming Applications on Mobile Devices," in *Proceedings of International Conf. on Hardware/Software Co-design and System Synthesis*, pp. 1~10, 2013.
- C-43. [RTSS '13]** M. Zhao, X. Chen, Y. Chen, and J. Xue. "Online OLED Dynamic Voltage Scaling for Video Streaming Applications on Mobile Devices," in *Proceedings of the IEEE Real-Time Systems Symposium*, Vol. 10, Iss. 2, No. 18, 2013.

- C-44.** [ASP-DAC '13] K. Nixon, X. Chen, Z. H. Mao, Y. Chen, and K. Li. "Mobile User Classification and Authorization based on Gesture Usage Recognition," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 384~389, 2013.
- C-45.** [ICCAD '12] ° X. Chen, J. Xue, and Y. Chen. "Mobile Devices User — The Subscriber and also the Publisher of Real-Time OLED Display Power Management Plan," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 687~690, 2012.
- C-46.** [ICCAD '12] ° X. Chen, B. Liu, M. Zhao, J. Xue, X. Guo, and Y. Chen. "Active Compensation Technique for the Thin-Film Transistor Variations and OLED Aging of Mobile Device Displays," in *Proceedings of the International Conference on Computer-Aided Design*, pp. 516~522, 2012.
- C-47.** [DAC '12] ° X. Chen, M. Zhao, J. Zeng, J. Xue, and Y. Chen. "Quality-Retaining OLED Dynamic Voltage Scaling for Video Streaming Applications on Mobile Devices," in *Proceedings of the Design Automation Conference*, pp. 1000~1005, 2012.
- C-48.** [ASP-DAC '12] ° X. Chen, J. Zeng, Y. Chen, and H. Li. "Fine-grained Dynamic Voltage Scaling on OLED Display," in *Proceedings of the Asia and South Pacific Design Automation Conference*, pp. 807~812, 2012.
- C-49.** [CICC '11] P. Wang, X. Chen, Y. Chen, H. Li, S. Kang, X. Zhu, and W. Wu. "A 1.0V 45nm Nonvolatile Magnetic Latch Design and Its Robustness Analysis," in *Proceedings of the IEEE Custom Integrated Circuits Conference*, pp. 1~4, 2011.
- C-50.** [WCSE '09] ° X. Chen, Z. Zhang, and R. Chen. "A Real-Time Driving Fatigue Monitoring DSP Device based on Computing Complexity of Binarized Image," in *Proceedings of IEEE International Workshop on Computer Science and Engineering*, pp. 84~89, 2009.

**Peer Reviewed Workshop Publications (Total: 10)**

- Cw-1.** [MLSys-CI '22] \* F. Yu, D. Wang, L. Shangguan, M. Zhang, C. Liu, T. Soyata, and X. Chen. "A Survey of Multi-Tenant Deep Learning Inference on GPU," in *Proceedings of the Conference on Machine Learning and Systems, Workshop on Cloud Intelligence / AIOps*, Aug. 2022.
- Cw-2.** [WebConf-EMDC '22] \* Y. Yu, F. Yu, Z. Xu, D. Wang, M. Zhang, A. Li, S. Bray, C. Liu, and X. Chen. "Powering Multi-Task Federated Learning with Competitive GPU Resource Sharing," in *Proceedings of the ACM Web Conference, Workshop on Efficiency of Modern Data Centers*, Jun. 2022.
- Cw-3.** [CVPR-V4AS '20] \* F. Yu, D. Wang, Y. Chen, N. Karianakis, P. Yu, D. Lymberopoulos, and X. Chen. "Unsupervised Domain Adaptation for Object Detection via Cross-Domain Semi-Supervised Learning," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, Workshop on Vision for all Seasons: Adverse Weather and Lighting Conditions*, Jun. 2020.
- Cw-4.** [SEC '19] \* Z. Qin, F. Yu, and X. Chen. "Task-Adaptive Incremental Learning for Intelligent Edge Devices," in *Proceedings of the ACM/IEEE Symposium on Edge Computing*, pp. 340~341, Nov. 2019.
- Cw-5.** [KDD-AIoT '19] \* Z. Xu, F. Yu, and X. Chen. "DoPa: A Fast and Comprehensive CNN Defense Methodology against Physical Adversarial Attacks," in *Proceedings of the ACM SigKDD Conference on Knowledge Discovery and Data Mining, Workshop on Artificial Intelligence of Things*, No. 3, Aug. 2019.



**Cw-6.** [NIPS-CDNNIA '18] \* Z. Qin, F. Yu, C. Liu, and X. Chen. "Demystifying Neural Network Filter Pruning," in *Proceedings of the Conference on Neural Information Processing Systems, Workshop on Compact Deep Neural Networks with Industrial Applications*, No.24, Dec. 2018.

**Cw-7.** [NIPS-CDNNIA '18] \* F. Yu, Z. Qin, and X. Chen. "Distilling Critical Paths in Convolutional Neural Networks," in *Proceedings of the Conference on Neural Information Processing Systems, Workshop on Compact Deep Neural Networks with Industrial Applications*, No. 34, Dec. 2018.

**Cw-8.** [USENIX HotPower '14] ° X. Chen, K. Nixon, H. Zhou, Y. Liu, and Y. Chen. "FingerShadow: An OLED Power Optimization based on Smartphone Touch Interactions," in *Proceedings of the International Workshop on Power-Aware Computing and System*, No. 6, Oct. 2014.

**Cw-9.** [USENIX HotPower '14] K. Nixon, X. Chen, H. Zhou, Y. Liu, and Y. Chen. "Mobile GPU Power Consumption Reduction via Dynamic Resolution and Frame Rate Scaling," in *Proceedings of the International Workshop on Power-Aware Computing and System*, No. 5, Oct. 2014.

**Cw-10.** [USENIX HotMobile '13] ° X. Chen, Y. Chen, Z. Ma, and F. Fernandes. "How is Energy Consumed in Smartphone Display Applications?" in *Proceedings of the International Workshop on Mobile Computing Systems and Applications*, No. 3, Feb. 2013.

#### Peer Reviewed Conference Posters, Tracks of Work-in-Progress (WIP) (Total: 8)

**Cp-1.** [MLSys-CrossFL '22] \* Y. Yu, F. Yu, Z. Xu, D. Wang, M. Zhang, A. Li, S. Bray, C. Liu, and X. Chen. "Powering Multi-Task Federated Learning with Competitive GPU Resource Sharing," *the Conference on Machine Learning and Systems, Workshop on Cross-Community Federated Learning: Algorithms, Systems and Co-designs*, Poster, Sep. 2022.

**Cp-2.** [DAC-WIP '22] \* Y. Yu, F. Yu, Z. Xu, D. Wang, M. Zhang, A. Li, S. Bray, C. Liu, and X. Chen. "Rethinking Multi-Tenant AI with GPU Computing," *the Design Automation Conference, Work-in-Progress Workshop*, Jul. 2022.

**Cp-3.** [DAC-WIP '22] \* S. Bray, Z. Xu, X. Chen, and C. Liu. "An In-Sensor Adversarial Attacks Defending Approach with Computing-in-Memory Engine," *the Design Automation Conference, Work-in-Progress Workshop*, Jul. 2022.

**Cp-4.** [DAC-WIP '21] \* F. Yu, Z. Xu, D. Wang, C. Liu, and X. Chen. "DeltaNet: High-Performance Federated Learning with Hybrid Data and Model Parallelism," *the Design Automation Conference, Work-in-Progress Workshop*, Dec. 2021.

**Cp-5.** [IBM-AICS '20] \* Z. Xu, J. Xiong, F. Yu, and X. Chen. "Efficient Neural Network Implementation with Quadratic Neuron," *the IBM IEEE CAS/EDS AI Compute Symposium*, Poster, Nov. 2020.

**Cp-6.** [IBM-AICS '19] \* Z. Xu, F. Yu, C. Liu, and X. Chen. "A Comprehensive and Lightweight CNN Defense Methodology against Physical Adversarial Attacks on Embedded Multimedia Applications," *the IBM IEEE CAS/EDS AI Compute Sym.*, Poster, Oct. 2019.

**Cp-7.** [SEC-EdgeSP '18] \* Z. Qin, F. Yu, C. Liu, Y. Wang, and X. Chen. "Adge: An ADMM-Based Audio Adversarial Example Generation Method," *the ACM/IEEE Symposium on Edge Computing, Workshop on Security and Privacy in Edge Computing*, Poster, Oct. 2018.

**Cp-8.** [DAC-WIP '18] \* F. Yu, Q. Dong, and X. Chen. "ASP: A Fast Adversarial Attack

Example Generation Framework based on Adversarial Saliency Prediction," *the Design Automation Conference, Work-in-Progress Workshop*, Jun. 2018.

**Cp-9.** [DAC-WIP '18] \* Z. Xu, F. Yu, and X. Chen. "Performance-Aware Dynamic Model Generation for Convolutional Neural Network in Mobile Systems," *the Design Automation Conference, Work-in-Progress Workshop*, Jun. 2018.

**Cp-10.** [DAC-WIP '13] ° X. Chen, Z. Ma, F. Fernandes, J. Xue, and Y. Chen. "Dynamic Tone Mapping on OLED Display based on Video Classification," *the Design Automation Conference, Work-in-Progress Workshop*, Jun. 2013.

**Cp-11.** [DAC-WIP '13] ° X. Chen, and H. Li. "P-Spectrum: A Personalized Smartphone Power Management Technique based on Real-time Battery and User Behavior Monitoring," *the Design Automation Conference, Work-in-Progress Workshop*, Jun. 2013.

**Cp-12.** [DAC-WIP '13] K. Nixon, X. Chen, Z. Mao, K. Li, and Y. Chen. "The Invisible Shield: User Classification and Authentication for Mobile Device based on Gesture Recognition," *the Design Automation Conference, Work-in-Progress Workshop*, Jun. 2013.

#### Archived Papers (Total: 7)

**A-1.** [arXiv '21] \* F. Yu, D. Wang, L. Shangguan, M. Zhang, X. Tang, C. Liu, and X. Chen. "A Survey of Large-Scale Deep Learning Serving System Optimization: Challenges and Opportunities," *arXiv:2111.14247*, Nov. 2021.

**A-2.** [arXiv '20] \* F. Yu, Z. Xu, T. Shen, D. Stamoulis, L. Shangguan, D. Wang, R. Madhok, C. Zhao, X. Li, N. Karianakis, D. Lymberopoulos, A. Li, C. Liu, Y. Chen, and X. Chen. "Towards Latency-aware DNN Optimization with GPU Runtime Analysis and Tail Effect Elimination," *arXiv:2011.03897*, Nov. 2020.

**A-3.** [arXiv '20] \* F. Yu, W. Zhang, Z. Qin, Z. Xu, D. Wang, C. Liu, Z. Tian, and X. Chen. "Heterogeneous Federated Learning," *arXiv:2008.06767*, Aug. 2020.

**A-4.** [arXiv '18] S. Ye, T. Zhang, K. Zhang, J. Li, K. Xu, Y. Yang, F. Yu, J. Tang, M. Fardad, S. Liu, X. Chen, X. Lin, and Y. Wang. "Progressive Weight Pruning of Deep Neural Networks using ADMM," *arXiv:1810.07378*, Oct. 2018.

**A-5.** [arXiv '18] \* F. Yu, C. Liu, Y. Wang, L. Zhao, and X. Chen. "Interpreting Adversarial Robustness: A View from Decision Surface in Input Space," *arXiv:1810.00144*, Oct. 2018.

**A-6.** [arXiv '18] \* Z. Xu, F. Yu, C. Liu, and X. Chen. "HASP: A High-Performance Adaptive Mobile Security Enhancement Against Malicious Speech Recognition," *arXiv:1809.01697*, Sep. 2018.

**A-7.** [arXiv '18] \* F. Yu, Z. Xu, Y. Wang, C. Liu, and X. Chen. "Towards Robust Training of Neural Networks by Regularizing Adversarial Gradients," *arXiv:1805.09370*, May 2018.

#### PROFESSIONAL Journal Editorial Services

##### SERVICE ACTIVITIES

- **Guest Editor — MDPI-VLSI** 2022  
Journal of Electronics (JE)  
Special Issue of VLSI Design, Testing and Applications (VLSI)
- **Associated Editor — TCAS** 2022  
IEEE Transactions on Circuits and Systems
- **Associated Editor — Frontiers** 2021  
Frontiers in Big Data 2021, Topic: AI for Sustainability

PROFESSIONAL  
SERVICE  
ACTIVITIES  
(CONT'D)

- **Associated Editor — IET-CPS** 2020  
Journal of the Institution of Engineering and Technology (IET)  
Special Issue of Cyber-Physical Systems (CPS)
- **Associated Editor — TC-CPS** 2017  
IEEE Technical Committee on Cyber-Physical System (CPS)
- **Editor — SIGDA News** 2017~Present  
ACM Special Interest Group Design Automation (SIGDA) E-Newsletter

**Conference General Chair, Executive, and Steering Committee (including Workshops)**

- **General Chair — ICS** IEEE Cloud Summit Oct. 2022
- **Co-Chair — NSF-PIM** Mar. 2021  
The 2021 NSF Workshop on Processing-in-Memory Technology
- **Chair — ArchEdge** Nov. 2020  
The 3<sup>rd</sup> ACM/IEEE Workshop on Computing Architecture for Edge Computing,  
in association of the 5<sup>th</sup> ACM/IEEE Symposium on Edge Computing
- **General Chair — SEC** The 4<sup>th</sup> ACM/IEEE Symposium on Edge Computing Nov. 2019
- **Chair — ArchEdge** Nov. 2019  
The 2<sup>nd</sup> ACM/IEEE Workshop on Computing Architecture for Edge Computing,  
in association of the 4<sup>th</sup> ACM/IEEE Symposium on Edge Computing
- **Chair — ArchEdge** Oct. 2018  
The 1<sup>st</sup> ACM/IEEE Workshop on Computing Architecture for Edge Computing,  
in association of the 3<sup>rd</sup> ACM/IEEE Symposium on Edge Computing

**Conference Organization**

- **Local Chair — CHASE** Nov. 2022  
The 7<sup>th</sup> IEEE/ACM international conference on Connected Health:  
Applications, Systems and Engineering Technologies
- **Publication Chair — IGSC** Oct. 2022  
The 13<sup>th</sup> International Green and Sustainable Computing Conference
- **Organization Committee — ISLPED** Aug. 2022  
The 25<sup>th</sup> ACM/IEEE International Symposium on Low Power Electronics
- **Organization Committee — ISLPED** Jul. 2021  
The 24<sup>th</sup> ACM/IEEE International Symposium on Low Power Electronics
- **Local Chair — GLSVLSI** May 2019  
The 29<sup>th</sup> ACM Great Lakes Symposium on VLSI
- **Organization Committee — CADthlon** Aug. 2017  
ACM Special Interest Group Design Automation (SIGDA) CADathlon, in asso-  
ciation with the International Conference on Computer-Aided Design (ICCAD)
- **Local Chair — NanoCom** Jul. 2017  
The 4<sup>th</sup> ACM International Conf. on Nanoscale Computing and Communication
- **Organization Committee — ICFC** Jul. 2016  
The Future Chip Forum 2016 by Tsinghua University

**PROFESSIONAL  
SERVICE  
ACTIVITIES  
(CONT'D)**

**Conference Session Chair**

- [DAC '22] The 59<sup>th</sup> Design Automation Conference  
Session: Be Water: Adaptive AI for Dynamic Systems Jul. 2022
- [ASP-DAC '21] The 26<sup>th</sup> Asia and South Pacific Design Automation Conference  
Session: Toward Energy-Efficient Embedded Systems Jan. 2021
- [SoCC '19] The 31<sup>rd</sup> IEEE International System-on-Chip Conference  
Session: Intelligent Design for Edge Computing Sep. 2019
- [DAC '19] The 56<sup>th</sup> Design Automation Conference  
Session: Emerging Memory in Emerging Applications Jun. 2019
- [DAC '18] The 55<sup>th</sup> Design Automation Conference  
Session: Go with the Flow — Microfluidics,  
Liquid State Machines, Reservoirs, and More! Jun. 2018
- [HALO '17] The SIGDA Workshop on Hardware & Algorithms  
for Learning On-a-Chip Nov. 2017
- [HALO '17] The SIGDA Workshop on Hardware & Algorithms  
for Learning On-a-Chip Nov. 2017

**Technical Program Committee Chair**

- [DAC '22] The 59<sup>th</sup> Design Automation Conference  
Research Track: AI/ML Design — System and Platform

**Technical Program Committee Member**

- [MLSys '23] The Conference on Systems and Machine Learning
- [ICDCS '23] The International Conference on Distributed Computing Systems
- [WACV '23] The Winter Conference on Applications of Computer Vision
- [CODES+ISSS '22] The International Conference on Hardware/Software Codesign  
and System Synthesis
- [GLVLSI '22] The 32<sup>nd</sup> ACM Great Lakes Symposium on VLSI
- [ICDCS '22] The International Conference on Distributed Computing Systems
- [ICPADS '22] IEEE International Conference on Parallel and Distributed Systems
- [KDD-AIoT '22] The 5<sup>th</sup> International Workshop on Artificial Intelligence of Things  
in association with The 28<sup>th</sup> ACM SigKDD Conference on  
Knowledge Discovery and Data Mining
- [SoCC '22] The 35<sup>th</sup> IEEE International System-on-Chip Conference
- [SEC '22] The 7<sup>th</sup> ACM/IEEE Symposium on Edge Computing
- [VLSI-SoC '22] The 30<sup>th</sup> IFIP/IEEE International Conference  
on Very Large Scale Integration
- [AAAI '21] The 35<sup>th</sup> AAAI Conference on Artificial Intelligence
- [ASAP '21] The 32<sup>nd</sup> Annual IEEE Int'l Conf' on Architectures and Processors
- [CODES+ISSS '21] The International Conference on Hardware/Software Codesign  
and System Synthesis

PROFESSIONAL  
SERVICE  
ACTIVITIES  
(CONT'D)

- [DAC '21] The 58<sup>th</sup> Design Automation Conference
- [ICONIP '21] The 28<sup>th</sup> Int'l Conference on Neural Information Processing
- [ASP-DAC '21] The 26<sup>th</sup> Asia and South Pacific Design Automation Conference
- [ASP-DAC SRF '21] The 26<sup>th</sup> Asia and South Pacific Design Automation Conference Student Research Forum (SRF) Competition
- [GLVLSI '21] The 31<sup>st</sup> ACM Great Lakes Symposium on VLSI
- [SoCC '21] The 34<sup>th</sup> IEEE International System-on-Chip Conference
- [VLSI-SoC '21] The 29<sup>th</sup> IFIP/IEEE International Conference on Very Large Scale Integration
- [DAC '20] The 57<sup>th</sup> Design Automation Conference
- [KDD-AIoT '20] The 3<sup>rd</sup> International Workshop on Artificial Intelligence of Things in association with The 26<sup>th</sup> ACM SigKDD Conference on Knowledge Discovery and Data Mining
- [AAAI-AIoT '20] The 2<sup>nd</sup> International Workshop on Artificial Intelligence of Things in association with The 34<sup>th</sup> AAAI Conf. on Artificial Intelligence
- [ICONIP '20] The 27<sup>th</sup> Int'l Conference on Neural Information Processing
- [ASP-DAC '20] The 25<sup>th</sup> Asia and South Pacific Design Automation Conference
- [ASP-DAC SRF '20] The 25<sup>th</sup> Asia and South Pacific Design Automation Conference Student Research Forum (SRF) Competition
- [SoCC '20] The 33<sup>rd</sup> IEEE International System-on-Chip Conference
- [GLVLSI '20] The 30<sup>th</sup> ACM Great Lakes Symposium on VLSI
- [ASAP '20] The 31<sup>st</sup> Annual IEEE Int'l Conference on Architectures and Processors
- [EdgeSP '20] ACM/IEEE Workshop on Security and Privacy in Edge Computing
- [DAC '19] The 56<sup>th</sup> Design Automation Conference
- [DAC-PF '19] The 56<sup>th</sup> DAC — Ph.D. Student Research Forum Competition
- [KDD-AIoT '19] The 1<sup>st</sup> International Workshop on Artificial Intelligence of Things in association with The 25<sup>th</sup> ACM SigKDD Conference on Knowledge Discovery and Data Mining
- [ASP-DAC '19] The 24<sup>th</sup> Asia and South Pacific Design Automation Conference
- [SoCC '19] The 32<sup>nd</sup> IEEE International System-on-Chip Conference
- [ASAP '19] The 30<sup>th</sup> Annual IEEE Int'l Conference on Architectures and Processors
- [GLVLSI '19] The 29<sup>th</sup> ACM Great Lakes Symposium on VLSI
- [COINS '19] The International Conference on Omni-Layer Intelligent Systems
- [EdgeSP '19] ACM/IEEE Workshop on Security and Privacy in Edge Computing
- [NanoArch '19] The 15<sup>th</sup> IEEE/ACM Int'l Symposium on Architectures and Processors
- [ASP-DAC SRF '18] The 24<sup>th</sup> Asia and South Pacific Design Automation Conference Student Research Forum (SRF) Competition

**PROFESSIONAL  
SERVICE  
ACTIVITIES  
(CONT'D)**

- **[EdgeSP '18]** ACM/IEEE Workshop on Security and Privacy in Edge Computing
- **[CCNCPS-ICC '18]** IEEE International Workshop on Communication, Computing, and Networking Conference in Cyber Physical Systems (CCNCPS) in association with IEEE International Conference on Communications (ICC)
- **[Euro-Par '18]** The 23<sup>rd</sup> International Conference on Parallel and Distributed Computing Workshops, Advanced Parallel Processing Technology for Artificial Intelligence
- **[SoCC '18]** The 31<sup>st</sup> IEEE International System-on-Chip Conference
- **[ASP-DAC SRF '17]** The 23<sup>rd</sup> Asia and South Pacific Design Automation Conference Student Research Forum (SRF) Competition
- **[GLVLSI '17]** The 27<sup>th</sup> ACM Great Lakes Symposium on VLSI
- **[CCNCPS-ICC '17]** IEEE International Workshop on Communication, Computing, and Networking Conference in Cyber Physical Systems (CCNCPS) in association with IEEE International Conference on Communications (ICC)
- **[CCNCPS-IPCCC '16]** IEEE International Workshop on Communication, Computing, and Networking Conference in Cyber Physical Systems (CCNCPS) in association with IEEE International Performance Computing and Communications Conference (IPCCC)
- **[DC '16]** IEEE International Workshop on Energy-Aware Data Centers: Design, Analysis, and Implementation

**Journal and Conference Referee**

- **[CEM]** IEEE Consumer Electronics Magazine
- **[COMCOM]** Elsevier Journal on Computer and Telecommunications
- **[DSN]** The International Journal of Distributed Sensor Network
- **[DSTI]** IEEE Journal of Design & Test
- **[ESL]** IEEE Embedded Systems Letters
- **[FGCS]** Elsevier Journal of Future Generation Computer Systems
- **[IA]** IEEE Access
- **[IJIP]** The International Journal of Image Processing
- **[ISCAS]** IEEE International Symposium on Circuits & Systems
- **[JEDS]** IEEE Journal of the Electron Devices Society
- **[JETC]** ACM Journal on Emerging Technologies in Computing Systems
- **[JETCAS]** IEEE Journal on Emerging and Selected Topics in Circuits and Systems
- **[JSA]** Elsevier Journal of Journal of Systems Architecture
- **[JVCI]** Elsevier Journal of Visual Communication and Image Representation
- **[NAS]** IEEE Int'l Conference on Networking Architecture, and Storage

**PROFESSIONAL  
SERVICE  
ACTIVITIES  
(CONT'D)**

- [NCAA] The International Journal of Neural Computing and Applications
- [NEUCOM] Elsevier Journal of Neurocomputing
- [PATMOS] IEEE International Symposium on Power and Timing Modeling, Optimization and Simulation
- [SUSCOM] Elsevier Journal of Sustainable Computing Informatics and Systems
- [SUSTDE] The MDPI Journal of Sustainability
- [TC] IEEE Transactions on Computers
- [TCAD] IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems
- [TCPS] ACM Transactions on Cyber Physical Systems
- [TECS] ACM Transactions on Embedded Computing Systems
- [THMS] IEEE Transactions on Human-Machine Systems
- [THPC] CCF Transactions on High Performance Computing
- [TIOT] ACM Transactions on Internet of Things
- [TNNLS] IEEE Transactions on Neural Networks and Learning Systems
- [TODAES] ACM Transactions on Design Automation of Electronic Systems
- [TPDS] IEEE Transactions on Parallel and Distributed Systems
- [TSC] IEEE Transactions on Services Computing
- [TSMC] IEEE Transactions on Systems, Man and Cybernetics: Systems
- [TVLSI] IEEE Transactions on Very Large Scale Integration Systems
- [TWC] IEEE Transactions on Wireless Communications
- [UIST] ACM Symposium on User Interface Software and Technology

**Proposal, Panel, and Other Reviews**

- National Science Foundation (NSF) Panelist and Ad Hoc Reviewer
- Department of Energy (DOE) Panelist and Ad Hoc Reviewer
- Research Grants Council of Hong Kong (RGC) Ad Hoc Reviewer
- Swiss National Science Foundation Ad Hoc Reviewer
- Jeffress Trust Awards Program Ad Hoc Reviewer

**University Service — George Mason University**

- ECE Faculty Recruitment Committee 2018
- ECE Graduate Recruitment Committee for International Students 2017, 2018
- Mentor, Aspiring Scientists Summer Internship Program (ASSIP) 2017~2019
- Co-Director, Signal processing, Mobile Computing, Artificial intelligence Research and Technology (SMART) 2019~Present
- Director, Intelligence Fusion Lab (IF-Lab) 2016~Present

- INVITED TALKS, SEMINAR, & PRESENTATIONS
- T-1.** “Rethinking GPU Computing for Multi-Tenant Artificial Intelligence,” *the ACM SigKDD Conference on Knowledge Discovery and Data Mining, Workshop on Artificial Intelligence of Things*, Invited Talk, Washington D.C., 8/15/2022.
- T-2.** “MLWiNs: Decentralized Heterogeneous Deep Learning for Efficient Wireless Spectrum Monitoring — Phase 3,” *the Intel/NSF Workshop on Machine Learning and Wireless Networking*, Online Seminar Series, 10/7/2021.
- T-3.** “MLWiNs: Decentralized Heterogeneous Deep Learning for Efficient Wireless Spectrum Monitoring — Phase 2,” *the Intel/NSF Workshop on Machine Learning and Wireless Networking*, Online Seminar Series, 5/21/2021.
- T-4.** “MLWiNs: Decentralized Heterogeneous Deep Learning for Efficient Wireless Spectrum Monitoring — Phase 1,” *the Intel/NSF Workshop on Machine Learning and Wireless Networking*, Online Seminar Series, 10/19/2020.
- T-5.** “The Software and Hardware Approaches for Deep Learning Security Enhancement,” *School of Engineering and Applied Sciences(SEAS), University of the District of Columbia*, SEAS Research and Education Seminar, Washington D.C., 11/19/2019.
- T-6.** “Interpreting and Evaluating Neural Network Robustness,” *the 2<sup>nd</sup> IBM IEEE CAS/EDS AI Compute Symposium (IBM-AICS), IBM Thomas J. Watson Research Center*, Presentation, Yorktown Heights NY, 10/17/2019.
- T-7.** “High-Performance and Robust Computing for Artificial Intelligence Computing,” *IBM Thomas J. Watson Research Center*, Invited Talk, Yorktown Heights NY, 10/9/2019.
- T-8.** “Interpretable Artificial Intelligence in High-Performance Computing,” *the EDA Workshop, in association with the TPC Meeting of the 25<sup>th</sup> Asia and South Pacific Design Automation Conference (ASP-DAC)*, Seminar, Taipei Taiwan, 8/27/2019.
- T-9.** “Interpreting and Evaluating Neural Network Robustness,” *the 28<sup>th</sup> International Joint Conference on Artificial Intelligence (IJCAI)*, Presentation, Macao China, 8/14/2019.
- T-10.** “ReForm: Static and Dynamic Resource-Aware DNN Reconfiguration Framework for Mobile Device,” *the 56<sup>th</sup> Design Automation Conference (DAC)*, Presentation, Las Vegas NV, 6/6/2019.
- T-11.** “MASKER: Adaptive Mobile Security Enhancement against Automatic Speech Recognition in Eavesdropping,” *the 56<sup>th</sup> Design Automation Conference (DAC)*, Presentation, Las Vegas NV, 6/6/2019.
- T-12.** “High-Performance and Robust Computing for Artificial Intelligence on Edge,” *Comcast Research Lab*, Invited Talk, Washington D.C., 3/20/2019.
- T-13.** “The Software-Hardware Approaches for Deep Learning Security Enhancement,” *the IEEE Workshop on SecArch: Built-in Security-Architecture, Chip and System, in association with the 25<sup>th</sup> IEEE International Symposium on High-Performance Computer Architecture (HPCA)*, Invited Talk, Washington D.C., 2/17/2019.
- T-14.** “Interpretation, Evaluation, and Enhancement of Neural Network Robustness,” *the International Workshop on Hardware and Algorithms for Learning On-a-Chip (HALO), in association with the 37<sup>th</sup> IEEE International Conference on Computer-Aided Design (ICCAD)*, Invited Talk, San Diego CA, 11/8/2018.
- T-15.** “Interpretation, Evaluation, and Enhancement of Neural Network Robustness,” *National Science Foundation (NSF) Workshop on Internet-of-Things (IoT) Systems*, Seminar,



San Diego CA, 11/4/2018.

INVITED TALKS,  
SEMINAR, &  
PRESENTATIONS  
(CONT'D)

- T-16.** "Adversarial Examples, Threats or Promises: Mobile Application Case Studies," *the International Workshop on Design Automation for Analog and Mixed-Signal Circuit (AMS), in association with the 37<sup>th</sup> IEEE International Conference on Computer-Aided Design (ICCAD)*, Invited Talk, San Diego CA, 11/8/2018.
- T-17.** "Adge: An ADMM-Based Audio Adversarial Example Generation Method," *the 1<sup>st</sup> ACM/IEEE Workshop on Security and Privacy in Edge Computing (EdgeSP)*, Presentation, Seattle WA, 10/28/2018.
- T-18.** "Security of Machine Learning in Mobile Systems," *National Science Foundation (NSF) Workshop on Cyber-Physical Systems (CPS), University of North Carolina at Charlotte*, Seminar, Charlotte NC, 7/27/2018.
- T-19.** "Challenges and Opportunities in Mobile Development," *George Washington University*, Invited Talk, Washington D.C., 2/22/2018.
- T-20.** "Adversarial Attacks in Mobile Neural Network System," *Beijing Normal University*, Invited Talk, Beijing China, 1/18/2018.
- T-21.** "Adversarial Attacks in Mobile Neural Network System," *Capital Normal University*, Invited Talk, Beijing China, 1/16/2018.
- T-22.** "Adversarial Attacks in Mobile Neural Network System," *Chinese University of Hong Kong*, Invited Talk, Hong Kong, 1/14/2018.
- T-23.** "Adversarial Attacks in Mobile Neural Network System," *Northeastern University*, Invited Talk, Shenyang China, 12/24/2017.
- T-24.** "Challenges and Opportunities in Next-gen VR/AR Development," *Huawei Beijing Research Center*, Invited Talk, Beijing China, 1/9/2017.
- T-25.** "VoCaM: Visualization Oriented Convolutional Neural Network Acceleration on Mobile System," *the 36<sup>th</sup> IEEE International Conference on Computer-Aided Design (ICCAD)*, Presentation, Irvine CA, 11/13/2017.
- T-26.** "Challenges and Opportunities in Next-gen VR/AR Development," *Lenovo Innovation Center*, Invited Talk, Beijing China, 12/15/2016.
- T-27.** "Challenges and Opportunities in Mobile Development," *Northeastern University*, Invited Talk, Shenyang China, 12/29/2016.
- T-28.** "Challenges and Opportunities in Mobile Development," *Peking University*, Invited Talk, Beijing China, 12/28/2016.
- T-29.** "Challenges and Opportunities in Mobile Development," *Beijing University of Post and Telecommunication*, Invited Talk, Beijing China, 12/26/2016.
- T-30.** "Challenges and Opportunities in Mobile Development," *Shandong University*, Invited Talk, Jinan China, 12/21/2016.
- T-31.** "Challenges and Opportunities in Mobile Development," *Beijing University of Technology*, Invited Talk, Beijing China, 12/19/2016.
- T-32.** "Challenges and Opportunities in Mobile Development," *Beihang University*, Invited Talk, Beijing China, 12/18/2016.
- T-33.** "Practical Power Consumption Analysis with Current Smartphones," *the 29<sup>th</sup> IEEE International System-on-Chip Conference (SoCC)*, Presentation, Seattle WA, 9/9/2016.

INVITED TALKS, SEMINAR, & PRESENTATIONS (CONT'D)

- T-34. "MORPh: Mobile OLED-friendly Recording and Playback System for Low Power Video Streaming," *the 53<sup>rd</sup> Design Automation Conf. (DAC)*, Presentation, Austin TX, 6/9/2016.
- T-35. "From Pixels to People — Designing a Power Efficient, Smart, and Secure Mobile System," *George Mason University*, Invited Talk, Fairfax VA, 3/28/2016.
- T-36. "From Device to End-user: The Evolution in Smartphone Power Optimization," *Hong-Kong City University*, Invited Talk, Hong Kong, 8/19/2015.
- T-37. "From Device to End-user: The Evolution in Smartphone Power Optimization," *Peking University*, Invited Talk, Beijing China, 7/24/2015.
- T-38. "DaTuM: Dynamic Tone Mapping Technique for OLED Display Power Saving based on Video Classification," *the 52<sup>nd</sup> Design Automation Conference (DAC)*, Presentation, San Francisco CA, 6/10/2015.
- T-39. "FingerShadow: An OLED Power Optimization based on Smartphone Touch Interactions," *the 6<sup>th</sup> International Workshop on Power-Aware Computing and System (USENIX HotPower)*, Presentation, Denver CO, 10/5/2014.
- T-40. "Smartphone and Display Power Consumption Analysis and Optimization," *Tsinghua University*, Invited Talk, Beijing China, 8/29/2014.
- T-41. "OREO: Tri-layer Optimization for Power Efficient OLED Display," *Microsoft Research Asia*, Invited Talk, Beijing China, 6/4/2014.
- T-42. "How is Energy Consumed in Smartphone Display Applications?" *the 16<sup>th</sup> International Workshop on Mobile Computing Systems and Applications (USENIX HotMobile)*, Presentation, Jekyll Island GA, 2/26/2013.
- T-43. "OLED Display Power Optimization in Android UI System," *Samsung R&D Lab*, Invited Talk, Dallas TX, 12/15/2012.
- T-44. "Active Compensation Technique for the Thin-Film Transistor Variations and OLED Aging of Mobile Device Display," *the 31<sup>st</sup> International Conference on Computer-Aided Design (ICCAD)*, Presentation, Austin TX, 12/7/2012.
- T-45. "Quality-retaining OLED Dynamic Voltage Scaling for Video Streaming Applications on Mobile Device," *the 49<sup>th</sup> Design Automation Conference (DAC)*, Presentation, San Francisco CA, 6/19/2012.

TEACHING ACTIVITIES

**New Course Development — George Mason University**

- *ECE-617 Distributed and Federated Learning*
- *ECE-616 Advanced Mobile Systems and Applications*
- *ECE-516 Mobile Systems and Applications*

**Teaching History — George Mason University**

- |   |              |             |
|---|--------------|-------------|
| • <i>ECE-617 Distributed and Federated Learning</i>       | 14 Graduates | Spring 2022 |
| • <i>ECE-516 Mobile Systems and Applications</i>          | 35 Graduates | Spring 2022 |
| • <i>ECE-616 Advanced Mobile Systems and Applications</i> | 10 Graduates | Fall 2021   |
| • <i>ECE-516 Mobile Systems and Applications</i>          | 14 Graduates | Spring 2021 |

TEACHING  
ACTIVITIES  
(CONT'D)

• <i>ECE-616 Advanced Mobile Systems and Applications</i>	23 Graduates	Fall 2020
• <i>ECE-301 Digital Electronics</i>	93 Undergraduates	Fall 2020
• <i>ECE-516 Mobile Systems and Applications</i>	25 Graduates	Spring 2020
• <i>ECE-445 Computer Organization</i>	66 Undergraduates	Spring 2020
• <i>ECE-616 Advanced Mobile Systems and Applications</i>	11 Graduates	Fall 2019
• <i>ECE-516/590 Mobile Systems and Applications</i>	11 Graduates	Spring 2019
• <i>ECE-301 Digital Electronics</i>	80 Undergraduates	Spring 2019
• <i>ECE-301-01 Digital Electronics</i>	88 Undergraduates	Fall 2018
• <i>ECE-301-02 Digital Electronics</i>	92 Undergraduates	Fall 2018
• <i>ECE-516/590 Mobile Systems and Applications</i>	16 Graduates	Spring 2018
• <i>ECE-616/699 Advanced Mobile Systems and Applications</i>	12 Graduates	Fall 2017
• <i>ECE-516/590 Mobile Systems and Applications</i>	22 Graduates	Spring 2017

**Teaching History — University of Pittsburgh** (as a Graduate Teaching Assistant)

• <i>ECE-0501 Digital System Laboratory</i>	2012
• <i>ECE-0101 Linear Circuit System</i>	2012, 2014
• <i>ECE-1160/2160 Introduction to Embedded Systems</i>	2012~2015
• <i>ECE-1161/2161 Embedded Computer System Design II</i>	2012~2015
• <i>ECE-1192/2192 Introduction to VLSI Design</i>	2011~2013

**Supervised PostDoc, Ph.D., and M.S. Students as Primary Advisor**

(<sup>†</sup>, <sup>‡</sup>, <sup>II</sup> indicates the students co-supervised with Prof. Zhi (Gerry) Tian, Prof. Yiran Chen, and Prof. Chenchen Liu, respectively.)

Zhe Zhang <sup>†</sup>	PostDoc	George Mason Univ.	2016.12~2020.06	First Job: Chinese Academy of Science
Chenhui Xu	Ph.D.	George Mason Univ.	2022.09~2027.05	(Expected)
Min Zhang	Ph.D.	George Mason Univ.	2022.09~2027.05	(Expected)
Tianhao Wu	Ph.D.	George Mason Univ.	2022.09~2027.05	(Expected)
Angel Martinez	Ph.D.	George Mason Univ.	2021.09~2026.05	(Expected)
Yongbo Yu	Ph.D.	George Mason Univ.	2021.09~2026.05	(Expected)
Shawn Bray <sup>II</sup>	Ph.D.	Univ. Maryland B.C.	2020.09~2025.05	(Expected)
Weishan Zhang <sup>†</sup>	Ph.D.	George Mason Univ.	2019.09~2024.05	(Expected)
Fuxun Yu	Ph.D.	George Mason Univ.	2017.09~2022.05	Microsoft Research
Zirui Xu	Ph.D.	George Mason Univ.	2017.09~2022.05	CVS Research
Zhuwei Qin	Ph.D.	George Mason Univ.	2017.09~2020.09	San Francisco State University
Jiachen Mao <sup>‡</sup>	Ph.D.	Duke University	2017.09~2020.09	Apple
Qide Dong	M.S.	George Mason Univ.	2016.09~2017.07	Exacloud Inc.
Genqian Hu	M.S.	George Mason Univ.	2016.09~2017.07	

**TEACHING  
ACTIVITIES  
(CONT'D)**

Po-Shun Liu M.S. George Mason Univ. 2016.09~2017.07  
 Chien-Hung Shun M.S. George Mason Univ. 2016.09~2017.07

**Visiting Students**

Zhao Yang Ph.D. Northwestern Polytechnical University 2019.08~2021.07

**Dissertation Committees**

Juan F. R. Rochac Ph.D. Univ. of the District of Columbia 2017.09~2022.05  
 Xinda Wang Ph.D. George Mason Univ. 2017.09~  
 Md Shohidul Islam Ph.D. George Mason Univ. 2019.09~  
 Hossein Sayadi Ph.D. George Mason Univ. 2015.05~2019.05  
 Saurabh Deshpande M.S. George Mason Univ. 2017.08~2018.08  
 Onkar Randive M.S. George Mason Univ. 2017.08~2018.08  
 Bhoopal Gunna M.S. George Mason Univ. 2016.01~2017.08  
 Sandhya R. S. Raju M.S. George Mason Univ. 2016.01~2017.08

**STUDENT  
AWARDS**

- Fuxun Yu Outstanding Academic Achievement Award 2022  
 Electrical and Computer Engineering Department, George Mason University
- Yongbo Yu Richard Newton Young Fellow Award 2022  
 The 59<sup>th</sup> Design Automation Conference
- Fuxun Yu Richard Newton Young Fellow Award 2021  
 The 57<sup>th</sup> Design Automation Conference
- Zhuwei Qin Summer Research Fellowship 2020  
 George Mason University
- Zhuwei Qin Richard Newton Young Fellow Award 2017  
 The 54<sup>th</sup> Design Automation Conference

**TRAVEL  
GRANTS**

- Zirui Xu, Student Research Forum (SRF) \$1,000 2015  
 The 25<sup>th</sup> Asia and South Pacific Design Automation Conference
- Xiang Chen, NSF CSR PI Meeting \$1,000 2019
- Xiang Chen, NSF CPS Workshop \$1,000 2018
- Xiang Chen, International Young Scholar Forum \$2,300 2017  
 Northeastern University, Shenyang China
- Xiang Chen, Young Faculty Workshop \$600 2016  
 The 53<sup>th</sup> Design Automation Conference
- Xiang Chen, Ph.D. Forum \$650 2016  
 The 53<sup>th</sup> Design Automation Conference
- Xiang Chen, ACM Student Research Competition (SRC) \$1,000 2015  
 The 34<sup>th</sup> International Conference on Computer-Aided Design
- Xiang Chen, Student Research Forum (SRF) \$450 2015  
 The 20<sup>th</sup> Asia and South Pacific Design Automation Conference

**TRAVEL  
GRANTS  
(CONT'D)**

- |   |       |      |
|---|-------|------|
| • Xiang Chen, Young Student Support Program (YSSP)<br>The 49 <sup>th</sup> Design Automation Conference   | \$610 | 2012 |
| • Xiang Chen, ACM Student Research Competition (SRC)<br>The 49 <sup>th</sup> Design Automation Conference | \$450 | 2012 |
| • Xiang Chen, Non-Volatile Memories Workshop (SRC)  | \$350 | 2012 |