CURRICULUM VITAE – SONG HAN

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RESEARCH INTEREST

Industrial Internet-of-Things (IIoT), Cyber-Physical Systems (CPS), Real-Time and Embedded Systems, Wireless Networks and Mobile Computing, Real-Time Data Analytics and Machine Learning, Smart and Connected Health

EDUCATION

Ph.D. in Computer Science, University of Texas at Austin, 2012.
Advisor: Professor Aloysius K. Mok
Dissertation: “Networking Infrastructure and Data Management for Cyber-Physical Systems”

M.Phil. in Computer Science, City University of Hong Kong, 2006.
Advisor: Kam-Yiu Lam
Thesis: “Scheduling and Sampling Technologies for Sensor Data”

B.S. in Computer Science, Nanjing University, 2003.

EMPLOYMENT

1. Pratt & Whitney Associate Professor in Advanced Systems Engineering, School of Computing, University of Connecticut. (1/25 - now)
2. Director of the Senior Design Program, School of Computing, University of Connecticut. (08/23 - now)
3. Associate Professor, School of Computing, University of Connecticut. (08/20 – 12/24)
4. Castleman Term Professor in Engineering Innovation, School of Computing, University of Connecticut. (01/20 – 12/22)
5. Assistant Professor, School of Computing, University of Connecticut. (08/13 -8/20)
6. Postdoctoral Fellow, Department of Computer Science, the University of Texas at Austin. (12/12 – 08/13)

LEADERSHIP ROLES in ACM/IEEE

1. Associate Editor, ACM Transactions on Cyber-Physical Systems (TCPS)
2. Executive Committee Member, ACM Special Interest Group on Embedded Systems (SIGBED)
3. Advisory Council Member, Research Directions: Cyber-Physical Systems, Cambridge University Press

4. Industrial Liaison, IEEE IES Technical Committee on Cloud and Wireless Systems for Industrial Applications

AWARDS AND HONORS

1. UConn Research Excellence Program Award, 2024
2. Outstanding Service Award, ICII, 2019
3. Outstanding Paper Award, RTSS, 2019
4. UConn Research Excellence Program Award, 2019
5. Best Paper Award, ICII, 2018
6. Best Paper Award Nomination, EMSOFT, 2018
7. UConn Research Excellence Program Award, 2015
8. Best Paper Award, RTSS, 2013
9. Best Paper Award Nomination, RTAS, 2011
10. Emerson Publication Award, Emerson Automation Solutions, 2011
11. James C. Browne Graduate Fellowship, UT Austin, 2009-2010
12. Emerson Publication Award, Emerson Automation Solutions, 2008
13. Microelectronics and Computer Development (MCD) Fellowship, UT Austin, 2006-2009
14. Excellent Graduate Award, Nanjing University, 2003

GRANTS AND CONTRACTS (in the descending order of the project end time)

1. Lead PI, “Collaborative Research: VINES: Track 1: NSF-SRC: Towards Resilient and Converged NextG Manufacturing Systems”, NSF/SRC, $1,425,000, 10/1/2026 – 9/30/2029. (Recommended and the award is under processing).
2. Co-PI, “PDaSP Track 2: A Holistic Privacy Preserving Collaborative Data Sharing System for Intelligent Transportation”, NSF/FHWA, $1,200,000 (UConn Share $464,000, my share: 50%), 10/1/2025 – 9/30/2028.
3. Co-PI, “University of Connecticut Safe System for All Road Users”, Safe Streets and Roads for All (SS4A) Planning and Demonstration Program, US DOT, $1,576,751 (the overall project cost is $1,971,102, my share: 10%), 12/2025 – 06/2028.
4. Co-PI, “Collaborative Research: CSR: Small: Accurate and Private Multi-Camera Surveillance System on Time-Sensitive Networks”, NSF, $600,000 (UConn Share $399,999, my share: 50%), 4/15/2025 – 3/31/2028.
5. Co-PI, “Bimodular Nanoarray Sensors for Surface Fouling Monitoring in Gasifier Internal Components”, Department of Energy (DOE), $624,998 (my share: 25%), 10/1/2024 – 9/22/2026.
6. PI, “Towards Commercialization of a Full-stack Programmable RT High-speed Wireless Platform for Large-scale IIoT Systems”, UConn SPARK Program, $50,000 (my share: 100%), 4/1/2024 – 05/22/2026.

7. PI, “Towards Real-Time Traffic Management in Industrial 5G Radio Access Networks”, UConn Research Excellence Program (REP), $25,000 (my share: 100%), 6/1/2024 – 05/22/2026.
8. Co-PI, “Towards the Design of a Secure and Efficient Data Communication Framework for Massive IoT Devices with Lightweight Authentication”, NSF Center for Hardware and Embedded Systems Security and Trust (CHEST), $82,500 (my share: 50%), 7/1/2024 - 1/14/2026.
9. Co-PI, “Wireless Joint Monitoring for Large Movement Expansion Joints for Highway Bridge Resilience”, Transportation Infrastructure Durability Center (TIDC), US DOT, $91,463 (my share: 30%), 10/23 – 9/2025.
10. PI, “RT 5G RAN Resource Management Framework Design and Experimentation for Industrial IoT Systems”, Supplemental Research Award, NSF PAWR Office, $49,994 (my share: 100%), 08/1/2023-09/30/2025.
11. PI, “CNS Core: Small: Dynamic and Composite Resource Management in Large-scale Industrial IoT Systems”, NSF, $475,571 (my share: 100%), 10/1/2020 – 9/30/2025.
12. Co-I, “Taking the Next Step: Increasing Gait Speed Assessment in Primary Care – An Implementation Effectiveness Hybrid Pilot Study”, Claude D. Pepper Older Americans Independence Centers, NIH, $100,000, 09/01/2024 – 8/31/2025.
13. Co-PI, “Collaborative Perception with Adaptive V2X Communication Support for Enhanced CAV Safety and Coordination”, US DOT New England University Transportation Center (NEUTC), $166,400 (my share: 50%), 09/2024 – 08/2025.
14. Co-PI, “SCC-PG: Towards A User-Centered and Equity-Aware Micromobility Sharing Co-Design Network to Interact with A Distressed Municipality”, NSF, $158,000 (my share: 10%), 9/2023 – 8/2025.
15. Co-PI, “5G-enabled Safe and Robust Deep Multi-agent Reinforcement Learning Framework for CAV Coordination”, US DOT NEUTC, $229,977 (my share: 50%), 01/2024 – 8/2025.
16. Co-PI (UConn Site), “Resilient ExtraTerrestrial Habitats institute”, (Lead Institute: Purdue University), NASA, $15,000,000 (UConn Share: $3,250,000, my share: 20%), 9/2019 – 8/2025.
17. Lead PI, “CPS: Small: Collaborative Research: A Secure Communication Framework with Verifiable Authenticity for Immutable Services in IIoT Systems”, NSF, $499,866 (my share: 50%), 10/2019 – 9/2024.
18. Co-PI, “Wireless Joint Monitoring System (w-JMS) for Safety of Highway Bridges”, Transportation Infrastructure Durability Center (TIDC), US DOT, $173,608 (my share: 30%), 10/21 – 9/2024.
19. Co-PI, “Materials and Processes for Smart, Agile Air Force Manufacturing Technologies”, Air Force Research Lab (AFRL), $7,953,698 (my share: 30% of Project 8 “IoT-Enabled and AI-Controlled Cobots for Manufacturing”, $560,615), 10/2020 – 8/2024.
20. Subaward PI, “Gait Velocity Detection Device for Targeted Recruitment in Geriatric Clinic”, Claude D. Pepper Older American Independence Center, UConn Health/NIH, $50,000 (my share: 100%), 06/2022- 06/2024.
21. PI, “Collaborative Research: PPoSS: Planning: S3-IoT: Design and Deployment of Scalable, Secure, and Smart Mission-Critical IoT Systems”, NSF, $55,988 (my share: 100%), 10/2020 – 3/2024.
22. Lead PI, “CCRI: Planning: Collaborative Research: Towards a Software-defined Wireless Communications Network Research Infrastructure for the Industrial Internet of Things”, NSF, $100,000 (my share: 40%),

10/2019 – 9/2022.

23. PI, “Towards Quantitative Cybersecurity Risk Assessment in Transportation Infrastructure”, Transportation Infrastructure Durability Center (TIDC), US DOT, $241,250 (my share: 100%), 10/2018 – 6/2022.
24. PI, “PFI-TT: Developing a Configurable Real-time High-speed Wireless Communication Platform for Large-scale Industrial Control Systems”, NSF, $250,000 (my share: 100%), 8/2019 – 3/2022.
25. Co-PI, “RI: Small: Multi-view Latent Class Discovery and Prediction with a Streamlined Analytics Platform”, NSF, $450,000 (my share: 40%), 8/2017 – 7/2021.
26. PI, “Development of a Wearable Earpiece Sensor System to Assess Dietary Behaviors and Physical Activity among Underserved Groups”, Connecticut Institute for Clinical and Translational Science (CICATS), $15,000 (my share: 100%), 4/2018 – 2/2021.
27. PI, “Towards Real-Time Data Retrieval with Mobile Edge Devices in Wireless-Powered Industrial IoT Systems”, UConn Research Excellence Program (REP), $24,994 (my share: 100%), 5/2019 – 1/2021.
28. Co-PI, “US Ignite: Focus Area 1: SD2N: Software-Defined Urban Distribution Network for Smart Cities”, NSF, $600,000 (my share: 25%), 1/2017 – 12/2020.
29. PI, “Security Framework for Industrial IoT systems using Blockchain”, Emerson Automation Solutions, $50,000 (my share: 100%), 9/2018 – 9/2020.
30. Co-PI, “Software-Defined Smart Grid”, UConn Academic Plan Level-1, $300,000 (my share: 25%), 7/2017-6/2020.
31. Senior Personnel, “REU Site: Trustable Embedded Systems Security Research”, NSF, $358,263 (my share: N/A), 02/2017 - 1/2020.
32. PI, “AM335x Sitara Based Industrial Gateway Management System”, Texas Instruments (TI), $120,000 (my share: 100%), 04/2017-03/2019.
33. PI, “Towards Full-blown 6TiSCH Network Testbed”, Equipment Donation, Texas Instruments (TI), $2,800 (my share: 100%), 9/2018.
34. Co-PI, “SD^{2}N: Software-Defined Urban Distribution Network for Smart Cities”, UConn Scholarship Facilitation Award, $2,000 (my share: N/A), 2017.
35. Co-PI, “EAGER: Wireless Power Quality Management System for Residential Applications”, NSF, $194,120 (my share: 40%), 8/2014 – 8/2016.
36. PI, “Big Data Analytics for Process Control”, Emerson Process Management, $215,000 (my share: 100%), 9/2013 – 8/2016.
37. PI, “Towards a Real-Time Data Analytics Platform on Microsoft Azure for Large-scale Industrial Process Monitoring and Control”, Microsoft Research, $20,000 (my share: 100%), 9/2015 – 8/2016.
38. PI, “A Configurable Real-time High-speed Wireless Communication Platform for Large-scale Sensing and Control Systems”, UConn Research Excellence Program (REP), $24,938 (my share: 100%), 3/2015 – 3/2016.
39. PI, “IPv6 over the TSCH mode of IEEE 802.15.4e”, Rosemount Measurements, $25,000 (my share: 100%),

9/2014 – 8/2015.

40. PI, “Embedded imaging system for process monitoring and control”, Rosemount Measurements, $25,000 (my share: 100%), 9/2014 – 8/2015.

PUBLICATIONS (200+ scholarly works and 8600+ citations. Please refer to Google Scholar for the details)

THESES

1. **Song Han**, "Networking Infrastructure and Data Management for Cyber-Physical Systems", Dissertation for the Ph.D. Degree in University of Texas at Austin. (Advisor: Dr. Aloysius K. Mok)
2. **Song Han**, “Sampling and Scheduling Techniques for Sensor Data”, Thesis for the Degree of Master of Philosophy in City University of Hong Kong. (Advisor: Dr. Kam-Yiu Lam)

BOOK CHAPTERS

1. Kefan Wu, Jiachen Wang, Tianyu Zhang, Sharon X. Hu, **Song Han**, "Adaptive and Hierarchical Resource Partitioning in Real-Time Wireless Networks", book chapter in the book “Embedded Computing and Storage: Essays Dedicated to Tei-Wei Kuo on the Occasion of His 60th Birthday”, Springer, 2026.
2. Zelin Yun, Natong Lin, Shengli Zhou, **Song Han**, "Software-Defined Radio (SDR)-Based Real-Time WLANs for Industrial Wireless Sensing and Control." book chapter in the book “Wireless Sensor Networks in Smart Environments: Enabling Digitalization from Fundamentals to Advanced Solutions”: 129-155, John Wiley & Sons, Inc., 2025.
3. Chenchen Fu, Xiaoxing Qiu, Weiwei Wu, Shengli Zhou, **Song Han**, “Availability-constrained Fresh Data Retrieval in RT Cyber-physical Systems”, book chapter in the Springer Handbook of Data Engineering, 2025.
4. Zelin Yun, Shengli Zhou, **Song Han**, “Software-defined Radio based Real-Time WLANs for Industrial wireless Sensing and Control”, book chapter in the book “Wireless Sensor Networks in Smart Environments: Enabling Digitalization”, IEEE/Wiley, 2024.
5. Tianyu Zhang, Tao Gong, Xiaobo Sharon Hu, Qingxu Deng, **Song Han**, “Dynamic Resource Management in Real-Time Wireless Networks”, book chapter in the book “Wireless Networks and Industrial IoT - Applications, Challenges and Enablers”, Springer Nature Switzerland AG, 2020.
6. Nelson Wai-Hung Tsang, Kam-Yiu Lam, Umair Mujtaba Qureshi, Joseph Kee-Yin Ng, Ioannis Papavasileiou, **Song Han**, "Indoor Activity Tracking for Elderly Using Intelligent Sensors", book chapter in the book “Intelligent Data Sensing and Processing for Health and Well-being Applications”, Elsevier, 2018.
7. **Song Han**, Mark Nixon, Deji Chen, Aloysius K. Mok, Paul Muston, “WirelessHART™ sensor networks”, book chapter in Handbook of industrial wireless sensor networks: Monitoring, control and automation, Woodhead Publishing, 2015.
8. Kam-Yiu Lam, Joseph Kee-Yin Ng, Nelson Wai-Hung Tsang, Jiantao Wang, Calvin Ho Chuen Kam, **Song Han**, "Pervasive Data Capturing and Analysis for Patients with Alzheimer’s Diseases", book chapter in the

IGI Book: Advanced Technological Solutions for Dementia Patient Monitoring, 2015.

PATENTS

1. Mark Nixon, Paul Muston, Deji Chen, **Song Han**, "Managing big data in process control systems", US Patent No. 9665088, May 2017.
2. Mark Nixon, **Song Han**, Eric Rotvold, Deji Chen, “Communicating data frames across communication networks that use incompatible network routing protocols”, US Patent No. 8908666, December 2014.

JOURNAL ARTICLES

1. Tianyu Zhang, Jiachen Wang, Sharon X. Hu, **Song Han**, "5G-TPS: A Two-Phase Real-Time Scheduling and Adaptation Framework for 5G Radio Access Networks", IEEE Transactions on Mobile Computing (TMC), 25(1): 1320-1336, 2026.
2. Prakash Bhandari, Shinae Jang, **Song Han**, Ramesh B. Malla, “Bridge Health Monitoring and Assessment in Industry 5.0: Lessons Learned from Long-term Real-time Field Monitoring of Highway Bridges”, Infrastructures, 2026, 11(2), 55 **(Invited Paper)**.
3. Yihang Feng, Yi Wang, Xinhao Wang, Bo Zhao, Jinbo Bi, **Song Han**, Yangchao Luo, “Food Additive Lens: An on-device AI application for real-time science-based consumer education on food additives using retrieval-augmented generation”, RSC Digital Discovery, 2026, 5, 1172-1190.
4. Yihang Feng, Yi Wang, Xinhao Wang, Bo Zhao, Jinbo Bi, **Song Han**, Zhenlei Xiao, Yangchao Luo, "RGB-D Food Nutrient Estimation Supported by FLAVA Contrastive Learning", Journal of Food Composition and Analysis (JFCA), Volume 150, 2026.
5. Zixu Zhang, Sreehari Manikkan, Murali Krishnan Rajasekharan Pillai, Mohsen Azimi, Luca Vaccino, Jiachen Wang, Chuanyu Xue, **Song Han**, Shirley J. Dyke, Ilias Bilionis, Paul Parsons, “Managing Delay-Induced Challenges in Remote Monitoring of Uncrewed Space Habitats: The Impact of Forecasting Telemetry Visualizations”, Acta Astronautica, Volume 241, 2026, Pages 1-18.
6. Chuanyu Xue, Tianyu Zhang, Yuanbin Zhou, Andrew Loveless, Mark Nixon and **Song Han**, "A Survey and Experimental Study of Real-Time Scheduling Methods for 802.1Qbv TSN Networks", ACM Computing Survey (CSUR), 58(2): 46:1-46:37, 2025.
7. Tianyu Zhang, Gang Wang, Chuanyu Xue, Jiachen Wang, Mark Nixon, **Song Han**, “Time-Sensitive Networking (TSN) for Industrial Automation: Current Advances and Future Directions”, ACM Computing Survey (CSUR), 57(2): 30:1-30:38, 2025.
8. Xiaoxing Qiu, Chenchen Fu, Sujunjie Sun, Yuhan Du, Weiwei Wu, Junzhou Luo and **Song Han**, “Minimizing Age of Result in Multi-Task Networked Control Systems”, in IEEE Journal on Selected Areas in Communications (JSAC), vol. 43, no. 9, pp. 3150-3166, Sept. 2025.
9. Murali Krishnan, Zixu Zhang, Kairui Hao, Sreehari Manikkan, Jiachen Wang, Chuanyu Xue, Mohsen Azimi, Paul Parsons, **Song Han**, Shirley Dyke and Ilias Bilionis, "HabSim-HMS: A Testbed for Investigating Situational Awareness and Autonomy for ExtraTerrestrial Habitat Systems", American Institute of Aeronautics and Astronautics (AIAA) Journal, 2025 63:2, 389-403.

10. Natong Lin, Zelin Yun, Shengli Zhou, **Song Han**, "GR-WiFi: A GNU Radio-based WiFi Platform with Single-User and Multi-User MIMO Capability", Physical Communications (PHYCOM), Volume 72, 2025.
11. Mainak Mondal, Fei Dou, Jinbo Bi, **Song Han**, "Deep Q-Learning-based Mobile Charger Path Planning in Wireless Powered Communication Networks", ACM Transactions on Embedded Computing Systems (TECS), 24, 6, Article 158 (November 2025), 32 pages.
12. Prakash Bhandari, Shinae Jang, Ramesh Malla, **Song Han**, “ANN-based Bridge Support Fixity Quantification using Thermal Response Data from RT Wireless Sensing”, Sensors, 24(16):5350, 2024.
13. Hasnain Nisar, Leila Chebbo, Ali Bazzi, Yang Zhang, Chuanyu Xue, Jiong Tang, **Song Han**, “Advancing Future Space Habitation: A Cyber-Physical Testbed for Space Power System”, IEEE Power Electronics Magazine (MPEL), vol. 11, no. 3, pp. 26-36, Sept. 2024.
14. Xiaoxing Qiu, Chenchen Fu, Weiwei Wu, Zining Zhou, Sujunjie Sun, Yuanyuan Song, **Song Han**, "Joint Device Charging and Fresh Data Retrieval with Mobile Edge Device in Wireless-Powered IoT Systems", in Transactions on Consumer Electronics (TCE), 70, 4 (Nov. 2024), 7385–7397.
15. Chenchen Fu, Xiaoxing Qiu, Vincent Chau, Zelin Yun, Chun Jason Xue, Weiwei Wu, Junzhou Luo, **Song Han**, “Fresh Data Retrieval with Speed-adjustable Mobile Devices in Cyber-Physical Systems”, IEEE Transactions on Knowledge and Data Engineering (TKDE), vol. 36, no. 8, pp. 3851-3866, Aug. 2024.
16. Wei-Ju Chen, Peng Wu, Peggy Huang, Aloysius K. Mok, **Song Han**, “Regular Composite Resource Partitioning and Reconfiguration in Open Systems”, ACM Transactions on Embedded Computing Systems (TECS) 22 (5), 1-29, 2023.
17. Pierredens Fils, Shinae Jang, Daisy Ren, Jiachen Wang, **Song Han** and Ramesh Malla, "Full-Scale Bridge Expansion Joint Monitoring using a Real-Time Wireless Network", Structural Monitoring and Maintenance (SMM) 9 (4), 359, 2023.
18. Zimeng Zhou, Chenchen Fu, Chun Jason Xue, **Song Han**, Wei Zhang, and Lei Ju, “Optimizing Worst-Case Age of Information in RF-Powered IoT Systems”, in IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), vol. 42, no. 9, pp. 2877-2888, Sept. 2023.
19. Tianyu Zhang, Tao Gong, Mingsong Lyu, Nan Guan, **Song Han**, Xiaobo Sharon Hu, “Reliable Dynamic Packet Scheduling with Slot Sharing for Real-Time Wireless Networks”, in IEEE Transactions on Mobile Computing (TMC), vol. 22, no. 11, pp. 6723-6741, 1 Nov. 2023.
20. Yuan-Hao Chang, Jalil Boukhobza and **Song Han**. "Introduction to the special issue on memory and storage systems for embedded and IoT applications." ACM Transactions on Embedded Computing Systems (TECS) 21, no. 1 (2022): 1-4.
21. Chunjiang Zhu, **Song Han**, Kam-yiu Lam, “A Fast Algorithm for Source-Wise Round-Trip Spanners”, Theoretical Computer Science (TCS), 2021.
22. Evan Faulkner, Zelin Yun, Shengli Zhou, Zhijie Shi, **Song Han**, and Georgios Giannakis, “An Advanced GNU-Radio Receiver of IEEE 802.15.4 OQPSK Physical Layer”, in IEEE IoT Journal (IoTJ), 2021.
23. Wei-Ju Chen, Peng Wu, Pei-Chi Huang, Aloysius K. Mok, **Song Han**, "Online Reconfiguration of Regularity-based Resource Partitions in Cyber-Physical Systems", in Real-Time Systems Journal (RTSJ),

the special issue on RTSS 2019 outstanding papers, 2021.

24. Tianyu Zhang, Tao Gong, **Song Han**, Qingxu Deng and Xiaobo Sharon Hu, "Fully Distributed Packet Scheduling Framework for Handling Disturbances in Lossy Real-Time Wireless Networks," in IEEE Transactions on Mobile Computing (TMC), vol. 20, no. 2, pp. 502-518, 1 Feb. 2021.
25. Zimeng Zhou, Chenchen Fu, Jason Xue, **Song Han**, "Energy-Constrained Data Freshness Optimization in Self-Powered Networked Embedded Systems", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2020.
26. Federico Tramarin, Aloysius K. Mok, **Song Han**, "Real-Time and Reliable Industrial Control over Wireless LANs: Algorithms, Protocols and Future Directions", Proceedings of the IEEE (PIEEE), 2019.
27. Chen Pan, Mimi Xie, **Song Han**, Zhi-Hong Mao, Jintong Hu, "Modeling and Optimization for Non-Volatile IoT Edge Devices with Ultra-Low Harvesting Power", ACM Transactions on Cyber-Physical Systems (TCPS), 2019.
28. Yong Liu, Kam-Yiu Lam, **Song Han**, Qingchun Chen, "Mobile Data Gathering and Energy Harvesting in Rechargeable Wireless Sensor Networks", Information Sciences (IS), 2019.
29. Chenchen Fu, Qiangqiang Liu, Peng wu, Minming Li, Chun Jason Xue, Yingchao Zhao, Jingtong Hu, **Song Han**, "Real-Time Data Retrieval in Cyber-Physical Systems with Temporal Validity and Data Availability Constraints", IEEE Transactions on Knowledge and Data Engineering (TKDE), vol. 31, no. 9, pp. 1779-1793, 1 Sept. 2019.
30. Quan Leng, Wei-Ju Chen, Pei-Chi Huang, Yi-Hung Wei, Aloysius K. Mok, **Song Han**. 2019. Network Management of Multicluster RT-WiFi Networks, ACM Transactions on Sensor Networks (TOSN), 15, 1, Article 12 (February 2019), 26 pages.
31. Tianyu Zhang, Tao Gong, Chuancai Gu, **Song Han**, Qingxu Deng, Xiaobo Sharon Hu, "D2-PaS: A Distributed Dynamic Packet Scheduling Framework for Handling Disturbances in Real-Time Wireless Networks", IEEE Transactions on Mobile Computing (TMC), 2018.
32. Chenchen Fu, Peng Wu, Minming Li, Chun Jason Xue, Yingchao Zhao, **Song Han**, "Real-Time Data Retrieval with Multiple Availability Intervals in CPS under Freshness Constraints", IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 37(11), pp.2743-2754, 2018.
33. Emiliano Sisinni, Abusayeed Saifullah, **Song Han**, Ulf Jennehag, Mikael Gidlund, "Industrial Internet of Things: Challenges, Opportunities, and Directions", IEEE Transactions on Industrial Informatics (TII), 14, no. 11 (2018): 4724-4734.
34. Yi-Hung Wei, Quan Leng, Wei-Ju Chen, Aloysius K. Mok, **Song Han**, "Schedule Adaptation for Ensuring Reliability in RT-WiFi-Based Networked Embedded Systems", ACM Transactions on Embedded Computing Systems (TECS), 17(5), (2018): p.85.
35. Wenhao Deng, Ioannis Papavasileiou, Wenlong Zhang, Kam-yiu Lam, **Song Han**, "Advances in Automation Technologies for Lower-extremity Neurorehabilitation: A Review and Future Challenges", IEEE reviews in biomedical engineering (RBME) 11 (2018): 289-305.
36. Mikael Gidlund, **Song Han**, Emiliano Sisinni, Abusayeed Saifullah, Ulf Jennehag, "Guest Editorial: From

Industrial Wireless Sensor Networks to Industrial Internet of Things", IEEE Transactions on Industrial Informatics (TII), vol. 14, no. 5, pp. 2194-2198, May 2018.

37. Wenlong Zhang, Masayoshi Tomizuka, Peng Wu, Yi-Hung Wei, Quan Leng, **Song Han**, Aloysius K. Mok, "A Double Disturbance Observer Design for Compensation of Unknown Time Delay in a Wireless Motion Control System", IEEE Transactions on Control Systems Technology (TCST) 26 (2), 675-683, 2018.
38. Lingyu Ren, Yanyuan Qin, Yan Li, Peng Zhang, Bing Wang, Peter Luh, **Song Han**, Taofeek Orekan, and Tao Gong, 2018. Enabling resilient distributed power sharing in networked microgrids through software defined networking. Applied Energy, 210, pp.1251-1265, 2018.
39. Ioannis Papavasileiou, Wenlong Zhang, **Song Han**, "Real-time Data-driven Gait Phase Detection using Ground Contact Force Measurements: Algorithms, Platform Design and Performance", Smart Health, vol.1-2, June 2017, pp. 34-49, Elsevier.
40. Kam-yiu Lam, Nelson Wai-Hung Tsang, **Song Han**, Wenlong Zhang, Joseph Kee-Yin Ng, Ajit Nath, "Activity Tracking and Monitoring of Patients with Alzheimer's Disease", Multimedia Tools and Applications (MTAP), January 2017, Volume 76, Issue 1, pp 489–521.
41. **Song Han**, Kam-yiu Lam, Deji Chen, Ming Xiong, Jiantao Wang, Krithi Ramamritham, Aloysius K. Mok, “Online Mode Switch Algorithms for Maintaining Data Freshness in Dynamic Cyber-Physical Systems”, IEEE Transactions on Knowledge and Data Engineering (TKDE) 28(3): 756-769, 2016.
42. Bing Ai, Luis Sentis, Nicholas Paine, **Song Han**, Aloysius K. Mok, Donald Karg, “Analysis of a Time-Delayed Actuator Control System with Experimental Validation”, ASME Journal of Dynamic Systems, Measurement and Control (JDSMC), 138(5), 2016.
43. Chunjiang Zhu, Kam-yiu Lam, **Song Han**, "Approximate Path Searching for Supporting Shortest Path Queries on Road Networks", Information Sciences (IS), Vol. 325, Pages 409–428, 2015.
44. **Song Han**, Jianping Song, Xiuming Zhu, Aloysius K. Mok, Deji Chen, Mark Nixon, Wally Pratt, Veena Gondhalekar, "Wi-HTest: Compliance Test Suite for Diagnosing Devices in Real-Time WirelessHART Mesh Networks", Wireless Networks, Volume 21, Issue 6, pp 1999-2018, 2015.
45. Kam-Yiu Lam, Jiantao Wang, Joseph Kee Yin Ng, **Song Han**, Limei Zheng, Calvin Ho Chuen Kam, "SmartMood: Pervasive Mood Tracking and Analysis for Patients with Mania", IEEE Transactions on Human-Machine Systems (THMS), No.99, pp. 1-6, 2014.
46. Wenlong Zhang, Yi-Hung Wei, Quan Leng and **Song Han**, "A High-speed, Real-time Mobile Gait Rehabilitation System", ACM XRDS Magazine - Cyber-Physical Systems, Volume 20 Issue 3, Spring 2014, Pages 46-51. **(Invited Feature Article)**
47. **Song Han**, Deji Chen, Ming Xiong, Kam-yiu Lam, Aloysius K. Mok, Krithi Ramamritham, "Schedulability Analysis of Deferrable Scheduling Algorithms for Maintaining Real-Time Data Freshness", IEEE Transactions on Computers (TC), 63(4):979-994, 2014.
48. Xiuming Zhu, Pei-Chi Huang, Jianyong Meng, **Song Han**, Aloysius K. Mok, Deji Chen, Mark Nixon. "ColLoc: A Collaborative localization and tracking System on WirelessHART", ACM Transactions on Embedded Computing Systems (TECS), 13(4s): Article No. 125, 2014.

49. Mao Yan, Kam-yiu Lam, **Song Han**, Edward Chan, Qingchun Chen, Pingzhi Fan, Deji Chen, Mark Nixon: Hypergraph-based data link layer scheduling for reliable packet delivery in wireless sensing and control networks with end-to-end delay constraints. Information Sciences (IS). 278: 34-55 (2014).
50. **Song Han**, Kam-yiu Lam, Jiantao Wang, Krithi Ramamritham, Aloysius K. Mok. "On Co-Scheduling of Update and Control Transactions in Real-time Sensing and Control Systems: Algorithms, Analysis and Performance", IEEE Transactions on Knowledge and Data Engineering (TKDE), 25(10): 2325-2342, 2013.
51. Yi-Hung Wei, Quan Leng, **Song Han**, Aloysius K. Mok, Wenlong Zhang, Masayoshi Tomizuka, Tianji Li, David Malone, Douglas J. Leith: RT-WiFi: real-time high speed communication protocol for wireless control systems. ACM SIGBED Review 10(2): 28, 2013.
52. **Song Han**, Kam-yiu Lam, Jiantao Wang, Sang H. Son, Aloysius K. Mok, "Adaptive Co-Scheduling for Periodic Update and Application Transactions in Real-Time Database Systems", Journal of Systems and Software (JSS) 85(8): 1729-1743, 2012.
53. Jiantao Wang, **Song Han**, Kam-yiu Lam, Aloysius K. Mok. "Maintaining Temporal Consistency of Real-time Data in Distributed Real-Time Systems", Real-time System Journal (RTSJ), Volume 48, Number 4, pp. 387-429, April, 2012.
54. Ming Xiong, **Song Han**, Deji Chen, K. Y. Lam, Shan Feng. "DESH: Overhead Reduction Algorithms for Deferrable Scheduling", Real-Time System Journal (RTSJ), Volume 44, Issue 1-3, pp. 1-25, March, 2010.
55. Guihai Chen, Hongxin Li, **Song Han**, Zifei Zhong, Edward Chan. "Coding-Aware Multi-path Routing in Multi-Hop Wireless Networks", Journal of Software 21 (8), 1908-1919, 2010.
56. Edward Chan, **Song Han**. "Energy Efficient Residual Energy Monitoring in Wireless Sensor Networks", In the International Journal of Distributed Sensor Networks (IJDSN), Vol. 5, pp. 1-23, 2009.
57. Ming Xiong, **Song Han**, K. Y. Lam, Deji Chen. "Deferrable Scheduling for Maintaining Real-Time Data Freshness: Algorithm, Analysis and Results", in IEEE Transactions on Computers (TC), vol. 57, no. 7, pp. 952-964, July, 2008.
58. **Song Han**, Edward Chan, Reynold Cheng, K. Y. Lam. "A Statistics-based Sensor Selection Scheme for Continuous Queries in Sensor Networks", In Real Time Systems Journal (RTSJ), Vol. 35, No. 1, pp. 33-58, Jan 2007.

CONFERENCE AND WORKSHOP PAPERS

1. Yannian Liu, **Song Han**, Minmei Wang, “STEM^2: A Fast and Space-efficient Data Structure for Exact Multi-Set Membership Query”, in the 52nd International Conference on Very Large Data Bases (VLDB), 2026.
2. Chuanyu Xue, Tianyu Zhang, Andrew Loveless, **Song Han**, “KeepON: Supporting Deterministic Traffic on Standard NICs”, in the 23rd USENIX Symposium on Network Systems Design and Implementation (NSDI) 2026.
3. Natong Lin, Jiachen Wang, Lisa Barry and **Song Han**, “RFID-based Real-Time Geriatric Gait Speed Monitoring System: Design, Implementation and Clinical Evaluation”, in the IEEE/ACM international conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), 2026.

4. Tianyu Zhang, Jiachen Wang, Kefan Wu, Chuanyu Xue, Sharon X. Hu, **Song Han**, "Flexibility-aware Resource Partitioning for Dynamic Real-Time Networks", in the 46th IEEE Real-Time System Symposium (RTSS) 2025.
5. Lina Pu, Yu Luo, **Song Han**, Junming Diao, “Your Cable, My Antenna: Eavesdropping Serial Communication via Backscatter Signals”, in the 46th IEEE Symposium on Security and Privacy (S&P), 2025.
6. Xi Yang, Jiachen Wang, **Song Han**, Suining He, "Micromobility Flow Prediction: A Bike Sharing Station-level Study via Multi-level Spatial-Temporal Attention Neural Network", in the 13th International Workshop on Urban Computing (UrbComp), held in conjunction with the 30th ACM SIGKDD 2024.
7. Chuanyu Xue, Tianyu Zhang, Yuanbin Zhou Andrew Loveless, Mark Nixon, **Song Han**, “Real-Time Scheduling for 802.1Qbv Time-Sensitive Networking (TSN): A Systematic Review and Experimental Study”, in the 29th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2024.
8. Chuanyu Xue, Tianyu Zhang, **Song Han**, “Towards Cost-Effective Real-Time High-Throughput End Station Design for Time-Sensitive Networking (TSN)”, in Design Automation Conference (DAC), 2024.
9. Xiaoxing Qiu, Weiwei Wu, Chenchen Fu, Zelin Yun, Vincent Chau, **Song Han**, “Minimizing AoI of Non-uniform Multi-source Real-time Data Updates: Model Generalization, Analysis and Performance Evaluation”, in the 44th IEEE Real-Time System Symposium (RTSS), 2023.
10. Tianyu Zhang, Jiachen Wang, Xiaobo Sharon Hu, **Song Han**, “Real-Time Flow Scheduling in Industrial 5G New Radio”, in the 44th IEEE Real-Time System Symposium (RTSS), 2023.
11. Jiachen Wang, Tianyu Zhang, Sharon Xiaobo Hu, **Song Han**, “Resource Virtualization with End-to-End Timing Guarantees for Multi-Hop Multi-Channel Real-Time Wireless Networks”, in the 44th IEEE Real-Time System Symposium (RTSS), 2023.
12. Amy Thompson, Matthew D. Stuber, **Song Han**, Abhishek Dutta, Hongyi Xu, Shengli Zhou, Qian Yang, Fei Miao, George M. Bollas, "Applying a Competency-Based Education Approach for Designing a Unique Interdisciplinary Graduate Program: A Case Study for a Systems Engineering Program", in ASEE Annual Conference & Exposition (ASEE), 2023.
13. Tianyu Zhang, Sharon Xiaobo Hu, **Song Han**, “Contention-Free Configured Grant Scheduling for 5G URLLC Traffic”, in Design Automation Conference (DAC), 2023.
14. Minmei Wang, Shouqian Shi, Xiaoxue Zhang, **Song Han** and Chen Qian, “LOIS: Low-cost Packet Header Protection for IoT Devices”, in the 8th ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI), 2023.
15. Chenchen Fu, Xinhang Lu, Xiaoxing Qiu, Sujunjie Sun, Xueyong Xu, Weiwei Wu, Jason Xue and **Song Han**, “Throughput Maximization in Wireless IoT Systems Powered by Hybrid Energy Harvesting”, in the ACM SIGBED International Conference on Embedded Software (EMSOFT), 2022.
16. Dawei Shen, Tianyu Zhang, Jiachen Wang, Qingxu Deng, **Song Han**, Xiaobo Sharon Hu. “Distributed Successive Packet Scheduling for Multi-Channel Real-Time Wireless Networks with Spatial Reuse and Workload Perturbations”, in the 28th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA) 2022.

17. Dawei Shen, Tianyu Zhang, Jiachen Wang, Qingxu Deng, **Song Han**, Xiaobo Sharon Hu, “QoS Guaranteed Resource Allocation for Coexisting eMBB and URLLC Traffic in 5G Industrial Networks”, in the 28th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA) 2022.
18. Jiachen Wang, Tianyu Zhang, Dawei Shen, Sharon Hu, **Song Han**. “HARP: Hierarchical Resource Partitioning in Dynamic Real-Time Wireless Networks”, in the 42nd IEEE International Conference on Distributed Computing Systems (ICDCS), 2022.
19. Zelin Yun, Peng Wu, Shengli Zhou, Mark Nixon, Aloysius K. Mok, **Song Han**. “RT-WiFi on Software-Defined Radio: Design and Implementation”, in the 28th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2022.
20. Peng Wu, Chenchen Fu, Minming Li, Yingchao Zhao, Jason Xue, **Song Han**, “Composite Resource Scheduling in Networked Control Systems”, in the 42nd IEEE Real-Time System Symposium (RTSS), 2021.
21. Chenchen Fu, Xiaoxing Qiu, Zelin Yun, Weiwei Wu, **Song Han**, “Keep Fresh: Real-Time Data Retrieval with Speed Adaptation in Mobile Cyber-Physical Systems”, in the 42nd IEEE Real-Time System Symposium (RTSS), 2021.
22. Xiaolong Guo, **Song Han**, Sharon Hu, Xun Jiao, Yier Jin, Fanxin Kong, Mike Lemmon, “Towards Scalable, Secure, and Smart Mission-Critical IoT Systems: Review and Vision”, in the ACM SIGBED International Conference on Embedded Software (EMSOFT), 2021.
23. Zelin yun, **Song Han**, “Towards a Real-Time Wireless Powered Communication Network: Design, Implementation and Evaluation”, in the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2021.
24. Jiachen Wang, Tianyu Zhang, Dawei Shen, Xiaobo Sharon Hu, **Song Han**, “APaS: An Adaptive Partition-Based Scheduling Framework for 6TiSCH Networks”, in the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2021.
25. Zimeng Zhou, Zelin Yun, Chenchen Fu, Jason Xue, **Song Han**, "Maintaining Real-Time Data Freshness in Wireless Powered Communication Networks", in the Proceedings of the 41st IEEE Real-Time System Symposium (RTSS), 2020.
26. Areej Althubaity, Tao Gong, Kim-Kwang Raymond Choo, Mark Nixon, Reda Ammar, **Song Han**, “Specification-based Distributed Detection of Rank-related Attacks in RPL-based Resource-Constrained Real-Time Wireless Networks”, in the Proceedings of the 3rd IEEE International Conference on Industrial Cyber-Physical Systems (ICPS 2020).
27. Wei-Ju Cheng, Peng Wu, Pei-Chi Huang, Aloysius K. Mok, **Song Han**, “Online Reconfiguration of Regularity-based Resource Partitions in Cyber-Physical Systems”, in the Proceedings of the IEEE Real-Time System Symposium (RTSS), 2019. **(Outstanding Paper Award)**
28. Kevin Kerliu, Alexandra Ross, Tao Gong, Zelin Yun, Zhijie Shi, **Song Han** and Shengli Zhou, "Secure Over-The-Air Firmware Updates for Sensor Networks", in the Proceedings of the 6th National Workshop for REU Research in Networking and Systems (REUNS), co-located with 16th IEEE International Conference on Mobile Ad-hoc Sensor Systems (MASS), 2019.

29. Hossam Farag, Patrik O sterberg, Mikael Gidlund, **Song Han**, "RMA-RP: A Reliable Mobility-Aware Routing Protocol for Industrial IoT Networks", in the Proceedings of the IEEE Global Conference on Internet of Things (GCIoT), 2019.
30. Gang Wang, Zhijie Jerry Shi, Mark Nixon, **Song Han**, "SoK: Sharding on Blockchain", in the Proceedings of the first ACM conference on Advances in Financial Technologies (AFT), 2019.
31. Gang Wang, Zhijie Jerry Shi, Mark Nixon, **Song Han**, "ChainSplitter: Towards Blockchain-based Industrial IoT Architecture for Supporting Hierarchical Storage", in the Proceedings of the 2nd IEEE International Conference on Blockchain (Blockchain), 2019.
32. Chunjiang Zhu, Sabine Storandt, Kam-yiu Lam, **Song Han**, Jinbo Bi, "Improved Dynamic Graph Learning through Fault-Tolerant Sparsification", in the Proceedings of the thirty-sixth International Conference on Machine Learning (ICML), 2019.
33. Tao Gong, Tianyu Zhang, Xiaobo Sharon Hu, Qingxu Deng, Michael Lemmon, **Song Han**, "Reliable Dynamic Packet Scheduling over Lossy Real-Time Wireless Networks", in the Proceedings of the 31th Euromicro Conference on Real-Time Systems (ECRTS), 2019.
34. Zimeng Zhou, Chenchen Fu, Jason Xue, **Song Han**, "Transmit or Discard: Optimizing Data Freshness in Networked Embedded Systems with Energy Harvesting Sources", in the Proceedings of the 56th Design Automation Conference (DAC), 2019.
35. Gang Wang, Zhijie Jerry Shi, Mark Nixon, **Song Han**, "SMChain: A Scalable Blockchain Protocol for Secure Metering Systems in Distributed Industrial Plants", in the Proceedings of the 4th ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI), 2019.
36. Chunjiang Zhu, Tan Zhu, Kam-yiu Lam, **Song Han**, Jinbo Bi, "Communication-Optimal Distributed Dynamic Graph Clustering", in the Proceedings of the 33rd AAAI Conference on Artificial Intelligence (AAAI), 2019.
37. **Song Han**, Tao Gong, Mark Nixon, Eric Rotvold, Kam-yiu Lam, Krithi Ramamritham, "RT-DAP: A Real-Time Data Analytics Platform for Large-scale Industrial Process Monitoring and Control", in the Proceedings of 1st IEEE International Conference on Industrial Internet (ICII), 2018. **(Best Paper Award)**
38. Chenchen Fu, Peng Wu, Minming Li, Chun Jason Xue, Yingchao Zhao, **Song Han**, "Real-Time Data Retrieval with Multiple Availability Intervals in CPS under Freshness Constraints", in the Proceedings of the ACM International Conference on Embedded Software (EMSOFT), 2018. **(Best Paper Award Nomination)**
39. Ioannis Papavasileiou, Wenlong Zhang, Jinbo Bi, **Song Han**, "Classifying Neurological Gait Disorders using Scalable and Integrative Learning of Biosensing Data", in the Proceedings of the 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), mini-symposium on "Classifying neuro-pathological movement pattern", 2018. **(Invited paper)**
40. Peng Wu, Wenlong Zhang, **Song Han**, "Self-triggered Nonsingular Terminal Sliding Mode Control", in the Proceedings of 2018 American Control Conference (ACC 2018).
41. Tianyu Zhang, Tao Gong, Zelin Yun, **Song Han**, Qingxu Deng, Xiaobo Sharon Hu, "FD-PaS: A Fully Distributed Packet Scheduling Framework for Handling Disturbances in Real-Time Wireless Networks", in the Proceedings of the 24th IEEE Real-Time and Embedded Technology and Applications Symposium

(RTAS), 2018.

42. Wei-Ju Chen, Pei-Chi Huang, Quan Leng, Aloysius K. Mok, **Song Han**, “Regular Composite Resource Partition in Open Systems”, in the Proceedings of the 38th Real-Time System and Symposium (RTSS), 2017.
43. Areej Althubaity, Huayi Ji, Tao Gong, Mark Nixon, Reda Ammar, **Song Han**, "ARM: A Hybrid Specification-based Intrusion Detection System for Rank Attacks in 6TiSCH Networks", in the Proceedings of the 22nd IEEE International Conference on Emerging Technologies And Factory Automation (ETFA 2017).
44. Ioannis Papavasileiou, Wenlong Zhang, Xin Wang, Jinbo Bi, Li Zhang, **Song Han**, "Classification of Neurological Gait Disorders Using Multi-task Feature Learning", in the Proceedings of the 2nd IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), 2017.
45. Tao Gong, Tianyu Zhang, Chuancai Gu, Huayi Ji, **Song Han**, Qingxu Deng, Xiaobo Sharon Hu, "Distributed Dynamic Packet Scheduling for Handling Disturbances in Real-Time Wireless Networks", in the Proceedings of the 23rd IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2017.
46. Nelson Wai-Hung TSANG, Kam-Yiu LAM, Umair Mujtaba Qureshi, Joseph Kee-Yin NG, **Song Han**, Ioannis Papavasileiou, "Tracking Indoor Activities of Patients with Mild Cognitive Impairment Using Motion Sensors", in the Proceedings of the 31st IEEE International Conference on Advanced Information Networking and Applications (AINA), 2017.
47. S M Rakiul Islam, Shawn Maxwell, Sung-Yeul Park, Shaobo Zheng, Tao Gong, **Song Han**, "Wireless Networked Dynamic Control Testbed for Power Converters in Smart Home Applications", in the Proceedings of the 32nd Annual IEEE Applied Power Electronics Conference & Exposition (APEC), 2017.
48. Deji Chen, Mark Nixon, Shaobo Zheng, Tao Gong, Aloysius K. Mok, **Song Han**, "Synchronization Considerations for Real-Time Wireless Sensor and Actuator Networks", in the Proceedings of the 22nd IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2016.
49. Ioannis Papavasileiou, Wenlong Zhang, **Song Han**, "Real-time Data-driven Gait Phase Detection using Infinite Gaussian Mixture Model and Parallel Particle Filter", in the Proceedings of the 1st IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), 2016.
50. Abdurrahman Arikan, Yuexin Mao, Xiaolan Zhang, Bing Wang, Shengli Zhou, **Song Han**, "Network Coding based Transmission Schemes in Networks with Group Meetings", in the Proceedings of the 34th IEEE International Performance Computing and Communications Conference (IPCCC), pp. 1-8, 2015.
51. Terry Blevins, Deji Chen, **Song Han**, Mark Nixon, Willy Wojsznis, "Process Control over Wireless Sensor and Actuator Networks", in the Proceedings of the 12th IEEE International Conference on Embedded Software and Systems (ICESS), 2015. **(Invited Paper)**
52. Shengyan Hong, Xiaobo Sharon Hu, Tao Gong, **Song Han**, "On-line Data Link Layer Scheduling in Wireless Networked Control Systems", in the Proceedings of the 27th Euromicro Conference on Real-Time Systems (ECRTS), 2015.
53. Wenlong Zhang, Masayoshi Tomizuka, Yi-Hung Wei, Quan Leng, **Song Han**, and Aloysius K. Mok, "Robust Time Delay Compensation in a Wireless Motion Control System with Double Disturbance Observers", in the

Proceedings of the 2015 American Control Conference (ACC), 2015.

54. Kam-Yiu Lam, Nelson Wai-Hung Tsang, **Song Han**, Joseph Kee-Yin Ng, Sze-Wei Tam, "SmartMind: Activity Tracking and Monitoring for Patients with Alzheimer's Disease", in the Proceedings of the 29th International Conference on Advanced Information Networking and Applications (AINA), 2015.
55. Quan Leng, Yi-Hung Wei, **Song Han**, Aloysius K. Mok, Wenlong Zhang, Masayoshi Tomizuka, "Improving Control Performance by Minimizing Jitter in RT-WiFi Networks", in the Proceedings of the 35th Real-Time Systems Symposium (RTSS), 2014.
56. Joseph Kee-Yin Ng, Jiantao Wang, Kam-Yiu Lam, Calvin Ho-Chuen Kam, **Song Han**, "Capturing and Analyzing Pervasive Data for SmartHealth", in the Proceedings of the 28th International Conference on Advanced Information Networking and Applications (AINA), 2014.
57. Wenlong Zhang, Masayoshi Tomizuka, Yi-Hung Wei, Quan Leng, **Song Han**, Aloysius K. Mok, "Time Delay Compensation in a Wireless Tracking Control System with Previewed Reference", in the Proceedings of 2014 American Control Conference (ACC), 2014.
58. Yi-Hung Wei, Quan Leng, **Song Han**, Aloysius K. Mok, Wenlong Zhang, Masayoshi Tomizuka, "RT-WiFi: Real-Time High-Speed Communication Protocol for Wireless Cyber-Physical Control Applications", in the Proceedings of 34th IEEE Real-Time Systems Symposium (RTSS), pp. 140-149, 2013. **(Best Paper Award)**
59. **Song Han**, Aloysius K. Mok, Jianyong Meng, Yi-Hung Wei, Pei-Chi Huang, Quan Leng, Xiuming Zhu, Luis Sentis, Kwan Suk Kim and Risto Miikkulainen, "Architecture of a Cyberphysical Avatar", in the Proceedings of the 4th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), pp. 189-198, 2013.
60. Wenlong Zhang, Xiuming Zhu, **Song Han**, Nancy Byl, Aloysius K. Mok, Masayoshi Tomizuka, "Design of a Network-based Mobile Gait Rehabilitation System", in the Proceedings of IEEE International Conference on Robotics and Biomimetics (ROBIO), pp. 1773-1778, 2012.
61. Xiuming Zhu, Pei-Chi Huang, **Song Han**, Al Mok, Deji Chen and Mark Nixon. "MinMax: A Sampling Interval Control Algorithm for Process Control Systems", in the Proceedings of the 18th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), pp. 68-77, 2012.
62. Xiuming Zhu, Pei-Chi Huang, **Song Han**, Aloysius K. Mok, Deji Chen, Mark Nixon, "RoamingHART: A Collaborative Localization System on WirelessHART", in the Proceedings of the 18th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), pp. 241-250, 2012.
63. Jiantao Wang, Kam-yiu Lam, **Song Han**, Sang H. Son, and Aloysius K. Mok, "On Co-Scheduling of Periodic Update and Application Transactions with Fixed Priority Assignment for Real-Time Monitoring", in the Proceedings of the 26th IEEE Conference on Advanced Information Networking and Applications (AINA), pp. 253-260, 2012.
64. **Song Han**, Tianji Li, Chen Qian, Douglas Leith, Aloysius K. Mok, Simon S. Lam, "HartFi: An Energy-Efficient Localization System", in the Proceedings of the ACM SIGCOMM Workshop on Energy and IT: from Green Networking to Smarter Systems (GreenNet), Toronto, ON, Canada, 2011.
65. Xiuming Zhu, **Song Han**, Pei-Chi Huang, Aloysius K. Mok, Deji Chen, "MBStar: A Real-time Communication Protocol for Wireless Body Area Networks", in the Proceedings of the 23rd Euromicro Conference on

Real-Time Systems (ECRTS), Porto, Portugal, 2011.

66. **Song Han**, Xiuming Zhu, Deji Chen, Aloysius K. Mok, Mark Nixon, "Reliable and Real-time Communication in Industrial Wireless Mesh Networks" in the Proceedings of the 17th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 3-12, 2011. **(Best Paper Award Nomination)**
67. **Song Han**, Xiuming Zhu, Aloysius K. Mok, Mark Nixon, Terry Blevins, Deji Chen. "Control over WirelessHART Network", in the Proceedings of the 36th Annual Conference of the IEEE Industrial Electronics Society (IECON), Phenix, AZ, 2010.
68. **Song Han**, Xiuming Zhu, Jianping Song, Aloysius K. Mok, Deji Chen, Mark Nixon, Wally Pratt, Veena Gondhalekar. "A Virtual Network Approach for Testing Wireless Mesh in Industrial Process Control", in the Proceedings of the 16th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 387-392, Macau, China, 2010.
69. Junghoon Lee, **Song Han**, Aloysius K. Mok. "Design of a Reliable Communication System for Grid-Style Traffic Control Networks", in the proceedings of the 16th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), pp. 133-142, Stockholm, Sweden, 2010.
70. **Song Han**, Deji Chen, Ming Xiong, Aloysius K. Mok. "Online Scheduling Switch for Maintaining Data Freshness in Flexible Real-Time Systems", in the Proceedings of the 30th IEEE Real-Time Systems Symposium (RTSS), pp. 115-124, Washington, D.C., USA, 2009.
71. Xiuming Zhu, Wei Dong, Aloysius K. Mok, **Song Han**, Jianping Song, Deji Chen, Mark Nixon. "A Location-determination Application in WirelessHART", in the Proceedings of the 15th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), pp. 263-270, Beijing, P. R. China, 2009.
72. **Song Han**, Jianping Song, Xiuming Zhu, Aloysius K. Mok, Deji Chen, Mark Nixon, Wally Pratt and Veena Gondhalekar. "Wi-HTest: Compliance Test Suite for Diagnosing Devices in Real-Time WirelessHART Networks", in the Proceedings of the 15th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), pp. 327-336, San Francisco, CA, 2009.
73. **Song Han**, Deji Chen, Ming Xiong, Al Mok. "A Schedulability Analysis of Deferrable Scheduling Using Patterns", in the Proceedings of the 20th Euromicro Conference on Real-Time Systems (ECRTS), pp. 47-56, Prague, Czech Republic, 2008.
74. Jianping Song, **Song Han**, Al Mok, Deji Chen, Mike Lucas, Mark Nixon and Wally Pratt. "WirelessHART: Applying Wireless Technology in Real-Time Industrial Process Control", in the Proceedings of the 14th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), pp.377-386, 2008.
75. **Song Han**, Zifei Zhong, Hongxing Li, Guihai Chen, Edward Chan, Aloysius K. Mok. "Coding-Aware Multi-path Routing in Multi-Hop Wireless Networks", in the Proceedings of the 27th IEEE International Performance Computing and Communications Conference (IPCCC), pp. 93-100, Austin, TX, 2008.
76. Ming Xiong, **Song Han**, Deji Chen. "Deferrable Scheduling for Temporal Consistency: Schedulability Analysis and Overhead Reduction", in the Proceedings of the 12th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), pp. 117-124, 2006.

77. Ming Xiong, **Song Han**, K. Y. Lam. "A Deferrable Scheduling Algorithm for Real-Time Transactions Maintaining Data Freshness", in the Proceedings of the 26th IEEE Real-Time Systems Symposium (RTSS), pp. 27-37, Miami, FL, 2005.

DEMO AND POSTERS

1. Chuanyu Xue, Elaine Hu, Tianyu Zhang, **Song Han**, “Work-in-Progress: An Open-source Toolkit for Time-Sensitive Networking Research”, in IEEE Real-Time System Symposium (RTSS), Brief Presentation, 2025.
2. Lisa C. Barry, Kathryn E. Callahan, Mariana Wingood, Richard Fortinsky, Karina Berg, Natong Lin, **Song Han**, Nicholas Pajewski, "Taking the Next Step: Increasing Gait Speed Assessment in Primary Care", in Gerontological Society of America (GSA) Annual Scientific Meeting, Abstract, 2025.
3. Keshawn Smith, Zhili Zhang, H M Sabbir Ahmad, Ehsan Sabouni, Maniak Mondal, **Song Han**, Wenchao Li, Fei Miao, "Robust and Safe Multi-Agent Reinforcement Learning Framework with Communication for Autonomous Vehicles", in Northeast Robotics Colloquium (NERC), Poster, 2025.
4. Chenchen Fu, Zining Zhou, Sujunjie Sun, Weiwei Wu, **Song Han**, "Where and How to Charge: Effective Charging with Mobile Agent in Wireless Powered CPS", in the 61st Design Automation Conference (DAC), WiP Poster Session, 2024.
5. Zelin Yun, Peng Wu, Shengli Zhou, Mark Nixon, Aloysius K. Mok, **Song Han**. “Demo Abstract: Open RT-WiFi Platform on Software-Defined Radio”, in the 28th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Demo Session, 2022.
6. Vincent Chau, Chenchen Fu, Shu Han, **Song Han**, Minming Li, Peng Wu and Yingchao Zhao. "Joint Resource Scheduling in Wireless Networked Control Systems with Energy Constraint", in the 59th Design Automation Conference (DAC), WiP Poster Session, 2022.
7. Zelin Yun, **Song Han**, “Demo: RT-WPCN: A Multi-hop Real-time Wireless Powered Communication Network”, in the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) Demo Session, 2021.
8. Jiachen Wang, Tianyu Zhang, Xiaobo Sharon Hu, **Song Han**, “Demo: A Full-Blown 6TiSCH Network with Partition-based Network Resource Management for Large-scale RT Wireless Applications”, in the 27th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) Demo Session, 2021.
9. Evan Faulkner, Zelin Yun, Shengli Zhou, Zhijie Shi, **Song Han**, and Georgios Giannakis, "An Advanced GNU-Radio Receiver of IEEE 802.15.4 OQPSK Physical Layer", poster presentation in the 10th New England Workshop on Software Defined Radio (NEWSDR), 2020.
10. Peng Wu, Chenchen Fu, Minming Li, Chun Jason Xue, Yingchao Zhao, **Song Han**, "Work-In-Progress: Joint Network and Computing Resource Scheduling for Wireless Networked Control Systems", in the Work-in-Progress (WiP) Session of 39th IEEE Real-Time System Symposium (RTSS), pp. 181-184, 2018.
11. Tao Gong, Huayi Ji, Tianyu Zhang, Jianwei Zhou, Xiaolin Lu, Xiaobo Sharon Hu, **Song Han**, "Demo Abstract: 6TiSCH in Full Bloom: From Dynamic Resource Management to Cloud-based Network Analytics", in the 24th

IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Demo Session, 2018.

12. Tao Gong, Shaobo Zheng, Mark Nixon, Eric Rotvold, **Song Han**, "Demo Abstract: Industrial IoT Field Gateway Design for Heterogeneous Process Monitoring and Control", in the 24th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Demo Session, 2018.
13. Tao Gong, Huayi Ji, **Song Han**, Tianyu Zhang, Chuancai Gu, Xiaobo Sharon Hu, Mark Nixon, "Demo Abstract: A Cross-device Testing and Debugging System for Large-scale Real-Time Wireless Networks", in IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Demo Session, 2017.
14. Ioannis Papavasileiou, Savanna Smith, Jinbo Bi, **Song Han**, "Gait-based Continuous Authentication using Multimodal Learning", in the 2nd IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), Poster Session, 2017.
15. **Song Han**, Yi-Hung Wei, Aloysius K. Mok, Deji Chen, Mark Nixon, Eric Rotvold, "Networking Infrastructure of Wireless Embedded Internet", in IEEE Real-Time System Symposium (RTSS), Demo Session, 2012.
16. Jiantao Wang, Kam-Yiu Lam, Yuan-Hao Chang, Jen-Wei Hsieh, **Song Han**, Yuang-Hung Kuan, Aloysius K. Mok. "Cluster-Based Multi-version B+-Tree in Flash-Based Embedded Database Systems" in IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), WiP Session 2012.
17. **Song Han**, Deji Chen, Ming Xiong, Al Mok. "Online Scheduling Policy Switch Based on Validity Constraint", in IEEE Real-Time Systems Symposium (RTSS), WiP Session, 2008.
18. Xuming Zhu, Aloysius K. Mok, **Song Han**, Jianping Song, Deji Chen, Mark Nixon. "A Location Aware Application in WirelessHART", in IEEE Real-Time Systems Symposium (RTSS), WiP Session, 2008.
19. Jianping Song, **Song Han**, Xiuming Zhu, Al Mok, Deji Chen, Mark Nixon. "Demonstration of a Complete WirelessHART Network", in ACM Conference on Embedded Networked Sensor Systems (SenSys), Demo Session, pp. 381-382, Raleigh, NC, 2008.
20. **Song Han**, Jianping Song, Xiuming Zhu, Al Mok, Deji Chen, Mark Nixon,Wally Pratt, Veena Gondhalekar. "HTest-W: Testing Suite for Diagnosing WirelessHART Devices and Networks", in ACM Conference on Embedded Networked Sensor Systems (SenSys), Poster Session, pp. 437-438, Raleigh, NC, 2008.

POSTDOCTORAL FELLOW SUPERVISION

1. Dr. Tianyu Zhang: now Tenure-track Assistant Professor in the Computer Science Department at the University of Iowa
2. Dr. Chunjiang Zhu: now Tenure-track Assistant Professor in the Computer Science Department at the Old Dominion University

GRADUATE STUDENT ADVISING

1. Rayhanul Islam (Ph.D.): Time-Sensitive Networking for Dynamic Systems
2. Kefan Wu (Ph.D.): Cyberinfrastructure Design for Digital Twin Networks

3. Chuanyu Xue (Ph.D.): Time-Sensitive Networking in Mission-Critical Systems
4. Jiachen Wang (Ph.D.): Real-Time Network Management and Virtualization
5. Natong Lin (Ph.D.): Software-defined Radio (SDR)-based Real-Time WiFi System
6. Mainak Mondal (Ph.D.): Wireless Powered Communication Networks
7. Piyush Shrivastav (Ph.D.): Real-Time Data Analytics in Industrial Automation Systems
8. Yihang Feng (M.Sc): AI for Food Additive Recognition
9. Tao Gong (Ph.D., graduated): Real-Time Wireless Sensor and Actuator Networks
10. Zelin Yun (Ph.D., graduated): Wireless Powered Communication
11. Peng Wu (Ph.D., graduated): Real-Time Heterogeneous Resource Management
12. Gang Wang (Ph.D., graduated): Blockchain Technologies in Industrial IoT Systems
13. Areej Althubaity (Ph.D., graduated): Security and Privacy in Internet-of-Things
14. Ioannis Papavasileiou (Ph.D., graduated): Healthcare Data Analytics
15. Abdurrahman Arikan (Ph.D, graduated): Energy Transportation in Electric Vehicle Networks
16. Chenyu Zhang (M.S., graduated)
17. Qiangqiang Liu (M.S., graduated)
18. Huayi Ji (M.S., graduated)
19. Shaobo Zheng (M.S., graduated)

CLASSROOM TEACHING

1. CSE3150: C++ Essentials
2. CSE3300: Computer Networks and Data Communications
3. CSE4300: Operating Systems
4. CSE4709/CSE5095: Networked Embedded Systems
5. CSE5095: Time-Sensitive Networking for Industrial Applications
6. CSE5300: Advanced Computer Networks
7. SE5301: Embedded/Networked Systems Modeling Abstractions
8. SE5303: Design Flows for Embedded/Networked Systems
9. SE5395: Capstone Projects - Embedded Systems
10. SE5402: Architecture of Internet-of-Things

SELECTED PROFESSIONAL SERVICE

1. Panelist, National Science Foundation (NSF), 2014 – 2022, 2025, 2026.

2. External Reviewer, Hong Kong Research Grants Council (RGC), 2021, 2023, 2026.
3. Associated Editor for ACM Transactions on Cyber-Physical Systems (TCPS), 2018-present.
4. Co-Chair of the Cyber-Physical Systems (CPS) Track, ACM/SIGAPP SAC, 2020 and 2021.
5. TPC Co-Chair, the 24th International Symposium on Real-Time Distributed Computing (ISORC), 2021.
6. TPC Co-Chair, the 15th International Conference on Embedded Software and Systems (ICESS), 2020.
7. TPC Co-Chair, the 2nd IEEE International Conference on Industrial Internet (ICII), 2019.
8. TPC Co-Chair, the 1st Workshop on Industrial Internet of Things (IIoT), 2019.
9. TPC members for RTSS, RTAS, ECRTS, EMSOFT, SAC, DAC, ICCAD, ICDCS, CHASE, RTCSA on a regular basis.
10. Guest editor for IEEE IoT Journal, 2020.
11. Guest editor for ACM Transactions on Embedded Computing Systems (TECS), 2020.
12. Guest editor for IEEE Transactions on Industrial Informatics (TII), 2017.

SELECTED EXTERNAL TALKS

1. “KeepON: Supporting Deterministic Traffic on Standard NICs”, NSDI, 2026.
2. “Towards Large-scale Heterogenous Industrial IoT Systems: Protocol Design, Resource Management and Applications”, IEEE Distinguished IoT Webinar, 2024.
3. “Towards the Design of Large-scale Industrial IoT Systems” Invited talk, Research Agenda for Industry 4.0 Technology Implementation Workshop, NSF/Texas A&M, 2023.
4. “Real-Time Flow Scheduling in Industrial 5G New Radio”, RTSS, 2023.
5. “Resource Virtualization with End-to-End Timing Guarantees for Multi-Hop Multi-Channel Real-Time Wireless Networks”, RTSS, 2023.
6. “HARP: Hierarchical Resource Partitioning in Dynamic Real-Time Wireless Networks”, ICDCS, 2022.
7. “Large-scale Heterogeneous Industrial IoT Systems: Protocol Design, Resource Management and Community Open Infrastructure”, Invited talk, Texas Instruments, 2019.
8. “Large-scale Heterogeneous Industrial IoT Systems: Protocol Design, Resource Management and Community Open Infrastructure”, Invited talk, Emerson Automation Solutions, 2019.
9. “SMChain: A Scalable Blockchain Protocol for Secure Metering Systems in Distributed Industrial Plants”, IoTDI, 2019.
10. "Dynamic Resource Management for Wireless Networked Control Systems", Distinguished talk, DGIST, 2018.
11. "RT-DAP: A Real-Time Data Analytics Platform for Large-scale Industrial Process Monitoring and Control", ICII, 2018.

12. “Quantitative Gait Rehabilitation using Wearable Devices and Machine Learning”, Invited talk, Nanjing Brain Hospital, 2017.
13. “Azure-based FCG Industrial IoT Demonstration System”, Invited talk, Fieldcomm Group, 2017.
14. “Classification of Neurological Gait Disorders Using Multi-task Feature Learning”, CHASE, 2017.
15. “Distributed Dynamic Packet Scheduling for Handling Disturbances in Real-Time Wireless Networks”, RTAS 2017.
16. “Real-Time Wireless Communication Platform for Industrial Sensing and Control Applications”, Invited talk, Texas Instruments, 2016.
17. "Microgrid Cloud: An IoT-enabled Integrative Framework for Community Microgrids Monitoring, Analytics and Optimization", Invited talk, Global City Teams Challenge (GCTC) Tech Jam, 2016.
18. "High-Speed Real-Time Communication Platform for Wireless Cyber-Physical Sensing and Control Applications", Invited talk, Middle Sweden University, 2015.
19. "High-Speed Real-Time Communication Platform for Wireless Cyber-Physical Sensing and Control Applications", Invited talk, University of Notre Dame, 2015.
20. "High-Speed Real-Time Communication Platform for Wireless Cyber-Physical Sensing and Control Applications", Invited talk, Tongji University, 2015.
21. "On-line Data Link Layer Scheduling in Wireless Networked Control Systems", ECRTS, 2015.
22. "Real-Time Analytics Platform for Large-scale Industrial Process Monitoring and Control", RTSS, 2014.
23. "High-Speed Real-Time Communication Platform for Wireless Cyber-Physical Sensing and Control Applications", Invited talk, ABB Corporate Research, Sweden, 2014.
24. "Architecture of a Cyberphysical Avatar", ICCPS'13.
25. "Network Infrastructure and Data Management for Cyber-Physical Systems", Invited talk, UC Berkeley DREAM Seminar, 2013.
26. "Network Infrastructure and Data Management for Cyber-Physical Systems", Invited talk, Hamilton Institute, National University of Ireland at Maynooth, 2012.
27. "Cluster-based Multi-version B+-Tree in Flash-Based Embedded Database Systems", RTAS’12.
28. "HartFi: An Energy-Efficient Localization System", SIGCOMM’11.
29. "Reliable and Real-time Communication in Wireless Industrial Mesh Networks", RTAS’11.
30. "Control over WirelessHART Networks", IECON’10.
31. "A Virtual Network Approach for Testing Wireless Mesh in Industrial Process Control", RTCSA’10.
32. "Online Scheduling Switch for Maintaining Data Freshness in Flexible Real-Time Systems", RTSS’09.
33. "Wi-HTest: Compliance Test Suite for Diagnosing Devices in Real-Time WirelessHART Network", RTAS’09.
34. "Online Scheduling Policy Switch Based on Validity Constraint”, RTSS’08.
35. "Coding-Aware Multi-path Routing in Multi-Hop Wireless Networks", IPCCC’08.

36. "A Statistics-based Sensor Selection Scheme for Continuous Queries in Sensor Networks", RTCSA'05.
37. "Probabilistic Continuous Update Scheme in Location Dependent Continuous Queries", APPT'05.
38. "Hierarchy Energy Scan in Wireless Sensor Network using in-network aggregation", ISPA'04.

AD-HOC JOURNAL REVIEWS

IEEE Transactions on Networking (ToN); IEEE Transactions on Industrial Electronics (TIE); ISA Transactions; Cyber-Physical Systems Journal (CPSJ); Wireless Networks (WINE); ACM Transactions on Cyber-Physical Systems (TCPS); Electronics; International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC); IEEE System Journal; China Communication; Computer Networks (COMNET); IEEE Transactions on Cloud Computing (TCC); IEEE Transaction on Computers (TC); Journal of System Architecture (JSA); IEEE Journal of Biomedical and Health Informatics (JBHI); Expert Systems with Applications (ESWA); Transactions on Mobile Computing (TMC); Embedded System Letters (ESL); IEEE Transactions on Knowledge and Data Engineering (TKDE); International Journal of Distributed Sensor Networks (IJDSN); Control Engineering Practice; IEEE Transactions on Very Large Scale Integration Systems(TVLSI); IEEE Transactions on Wireless Communications(TWC); ACM Transactions on Embedded Computing Systems (TECS); Information Processing Letters (IPL); Journal of Circuits, Systems and Computers (JCSC);Sensors; The Computer Journal (COMPJ); IEEE Transactions on Vehicular Technology (TVT); IEEE Transactions on Instrumentation & Measurement (TIM); International Journal of Computational Science and Engineering (IJCSE); Transactions on Parallel and Distributed Systems (TPDS); Journal of Communications and Networks (JCN); International Journal of Communication Systems (IJCS); Journal of Global Optimization (JGO); Knowledge and Information Systems (KAIS); ACM Transactions on Sensor Networks (TOSN); Wireless Communications and Mobile Computing (WCM); Ad Hoc Networks (ADHOC); Journal of System and Software (JSS); Future Internet; ACM Computing Surveys; IEEE Transactions on Industrial Informatics (TII); IEEE Communication Letter (CL); Journal of Computer Science and Technology(JCST);