Shan Lin

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Research Interest

cyber physical systems, networked information systems, and wireless networks

broad interest in networked systems, distributed embedded systems, physical computing, sensor systems, data analytics for large scale information systems, pervasive computing, and robotics

Employment

Tenure Track Assistant Professor, ECE, Stony Brook University	Aug 2014 – present
Visiting Professor, CIS, University of Pennsylvania	Sep 2010 – Aug 2015
Tenure Track Assistant Professor, CIS, Temple University	Jul 2010 – Aug 2014

Education

Ph. D. in Computer Science, University of Virginia Advisor: John. A. Stankovic Thesis: Taming Networking Challenges with Feedback Control	May 2010 Charlottesville VA
M. S. in Computer Science, University of Virginia Advisor: John. A. Stankovic Thesis: Adaptive Transmission Power Control in Wireless Sensor Networks	Jan 2007 Charlottesville VA
B. E. in Computer Science and Engineering, Shanghai Jiao Tong University	Jun 2004 Shanghai China

Honor and Award

Stony Brook OVPR Seed Grant Award	2020
NSF Career Award	2016
Best Paper Finalist at ACM MSWiM	2018
Best Paper Finalist at ACM/IEEE ICCPS	2015
Best Poster Runner-up at ACM MobiHoc	2014
Grant Academy Award	2014
Local Arrangement Chair Award for CPSWeek	2013
SAIC Scholar Award	2010
Cyber Physical System Summer School Fellowship	2009
Excellent Internship Award at Intel China Software Center	2004
Outstanding Student Scholarship of Shanghai Jiaotong University	2000-2004
Exceptional Student Award of Shanghai Jiaotong University	2001, 2003
Freshman Scholarship of Shanghai Jiaotong University	2000
Award for Exemption of Chinese National University Entry Examinations	2000

Grant

NSF CNS-1952096
SCC-IRG Track 1: Socially Informed Services Conflict Governance through Specification, Detection, Resolution and Prevention
Stony Brook PI: Shan Lin (Stony Brook University)
Total: 2.2M, PI Lin: 382K
Years: 2020-2023

OVPR Seed Grant
A Smart Artificial Pancreas for Patients with Diabetes
PIs: Shan Lin, Scott Smolka, Marina Charitou
Total: $45K, PI Lin: $45K
Years: 2020-2022

NSF CNS-1553273
NeTS: CAREER: Safe and Secure Network Control for Smart and Connected Hospitals
PI: Shan Lin (Stony Brook University)
Total: 450K
Years: 2016-2021

DE-FOA-0001383
Human-in-the-loop Sensing and Control for Commercial Building Energy Efficiency and Occupant Comfort
PIs: Mario Berges, Anthony Rowe (Carnegie Mellon University), Shan Lin (Stony Brook University), Sirajum Munir (BOSCH)
Total: 1.36M, PI Lin: $300K
Years: 2016-2019

NSF CNS-1239108
CPS: Synergy: Collaborative Research: Multiple-level Predictive Control of Mobile Cyber Physical Systems with Correlated Context
PIs: John Stankovic (University of Virginia), Shan Lin (Stony Brook University), George Pappas (University of Pennsylvania), Tian He (University of Minnesota)
Total: 1M, PI Lin: $200K
Years: 2012-2018

NSF CNS-1218718
NeTS: Small: Collaborative Research: Non-isotropic Networked Sensor Deployment for Smart Buildings
PIs: Jie Gao, Shan Lin (Stony Brook University)
Total: $500K, PI Lin: $270K
Years: 2012-2018

NSF IIS-1231680
SHB: Type I (EXP): Collaborative Research: Heterogeneous Large-Scale Telemedicine for Cardiology Patients
PIs: Shan Lin (Stony Brook University), Oleg Sokolsky (University of Pennsylvania)
Total: $600K, PI Lin: $300K
Years: 2012-2017

NSF CNS-1138963
EAGER: A Meso-Scale GENI WiMAX Project
PIs: Jie Wu, Gene Kawtny, Shan Lin, Chiu Tan (Temple University), Kapil Dandekar etc (Drexel University)
Total: $300K
Years: 2011-2014

NSF CCF-1301774

NSF CAREER Workshop
PIs: Jie Wu, Shan Lin, Chiu C. Tan (Temple University)
Total: 50K
Years: 2013

NSF/DoD CNS-1156574
REU Site: Enhancing Undergraduate Experience in Next Generation Networking Technologies
PIs: Jie Wu, Chiu Tan, Shan Lin, Abdallah Khreishah (Temple University)
Total: $320K
Years: 2012-2014

Microsoft Research Hawaii Project Award
PIs: Shan Lin, Jie Wu (Temple University)
Total: $10K
Years: 2010-2011

Journal Paper

- F. Shmarov et al., "Automated Synthesis of Safe Digital Controllers for Sampled-Data Stochastic Nonlinear Systems," in IEEE Access, vol. 8, 2020.
- H. Huang, C. Ni, J. Gao, X. Ban, A. Schnerider, **S. Lin**. Connected Wireless Camera Network Deployment with Visibility Coverage. In Proc. of the ACM Transactions on Internet of Things (TIOT), 2020.
- H. Huang and **S. Lin**. WiDet: Robust Device Free Intrusion Detection with Multiresolution Wavelet Analysis. Accepted to the Computer Communications *(COMCOM)*, 2020.
- S. Munir, H. Yang, **S. Lin**, E. Hoque, S. M. S. Nirjon, C. Lin, J. Stankovic, K. Whitehouse. Reliable Communication and Latency Bound Generation in Wireless Cyber-Physical System. Accepted to the ACM Transactions on Cyber Physical Systems (TCPS), 2019.
- N. Paoletti, K. Liu, H. Chen, S. Smolka, and **S. Lin**. Data-Driven Robust Control for a Closed-Loop Artificial Pancreas. Accepted to Special Issue of the IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), 2019.
- L. Bu, W. Xiong, C. M. Liang, S. Han, D. Zhang, **S. Lin** and X. Li. Systematically Ensuring the Confidence of Real Time Home Automation IoT Systems. Accepted to *the ACM Transactions on Cyber Physical Systems (TCPS),2018.*
- K. S. Liu, S. Munir, **S. Lin**, and C. Shelton. Understanding Occupancy Patterns in a Commercial Space. In Proceeding of the IEEE Technical Committee on Cyber-Physical Systems Newsletter, 2018.
- F. Miao, Shuo Han, **S. Lin**, S. Munir, J. A. Stankovic, H. Huang, D. Zhang, T. He and G. J. Pappas. Data-Driven Robust Taxi Dispatch under Demand Uncertainties. Accepted to the IEEE Transactions on Control Systems Technology, 2018.
- Y. Ma, G. Zhou, **S. Lin**, and H. Chen. RoFi: Rotation-aware WiFi Channel Feedback. In Proc. of the IEEE Internet of Things Journal, 2017.
- D. Zhang, T. He, **S. Lin**, S. Munir, J. A. Stankovic. Taxi-Passenger-Demand Modeling Based on Big Data from a Roving Sensor Network. Accepted to Proc. of the IEEE Transactions on Big Data (TBD), 2016.
- F. Miao, Shuo Han, **S. Lin**, S. Munir, J. A. Stankovic, H. Huang, D. Zhang, T. He and G. J. Pappas. Taxi Dispatch with Real-Time Sensing Data in Metropolitan Areas: A Receding Horizon Control Approach. Accepted to Proc. of the *IEEE Transactions on Automation Science and Engineering (TASE)*, 2016.
- L. Chen, W. Wang, H. Huang, and **S. Lin**. Time-constrained Data Harvesting in WSNs: Theoretical Foundation and Algorithm Design. Accepted to the *IEEE/ACM Transactions on Networking (ToN)*, 2016.

- H. Xu, L. Huang, C. Qiao, W. Long, **S. Lin**, and Y. Sun. Shared Relay Assignment (SRA) for Many-to-One Traffic in Cooperative Networks. Accepted to the Proc. of *the IEEE Transactions on Mobile Computing (TMC)*, 2016.
- Y. Wu, K. Liu, T. He, J. Stankovic, **S. Lin**. Efficient Multi-Channel Communications in Wireless Sensor Networks. In Proc. of *the ACM Transactions on Sensor Networks (TOSN)*, 2015.
- **S. Lin**, M. Fei, J. Zhang, G. Zhou, L. Gu, T. He, J. Stankovic, S. Son, and G. Pappas. ATPC: Adaptive Transmission Power Control for Wireless Sensor Networks. In Proc. of the *ACM Transactions on Sensor Networks (TOSN)*, 2015.
- H. Xu, L. Huang, L. Chen, **S. Lin**. Joint relay assignment and rate–power allocation for multiple paths in cooperative networks. In Proc. of the *Wireless Networks*, 2015.
- L. X, G. Chen, J. Cao, **S. Lin**, H. Dai, X. Wu. Towards Energy-Efficiency Optimization for Latency-optimal Broadcast Scheduling in Low-Duty-Cycle Sensor Networks. In Proc. of the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2015.
- **S. Lin**, G. Zhou, M. Al-Hami, K. Whitehouse, Y. Wu, J. Stankovic, T. He, X. Wu, and H. Liu. Towards Stable Network Performance in Wireless Sensor Networks: A Multilevel Perspective. In Proc. of the *ACM Transactions on Sensor Networks (TOSN)*, 2015.
- D. Zhang, T. He, **S. Lin**, S. Munir, J. A. Stankovic. pCruise: Online Cruising Mile Reduction for Large-Scale Taxicab Networks. In Proc. of the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2015.
- D. Zhang, T. He, Y. Liu, **S. Lin**, and J. A. Stankovic. CallCab: A Unified Recommendation System for Carpooling and Regular Taxicab Services. In Proc. of the *IEEE Transaction on Emerging Topics in Computing (TETC)*, 2014.
- H. Dai, X. Wu, G. Chen, L. Xu and **S. Lin**, Minimizing the Number of Mobile Chargers for Large-scale Wireless Rechargeable Sensor Networks. In Proc. of the *Computer Communications (COMCOM)*, 2014.
- X. Hei, X. Du, **S. Lin**, I. Lee, and O. Sokolsky. Patient Infusion Pattern based Access Control Schemes for Wireless Insulin Pump System. In Proc. of the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2014.
- H. Liu, J. Li, Z. Xie, **S. Lin**, J. A. Stankovic, K. Whitehouse, and D. Siu, An Automatic, Robust, and Efficient Multi-User Breadcrumb System for Emergency Response Applications. In Proc. of *the IEEE Transactions on Mobile Computing (TMC)*, 2013.
- S. Munir, J. A. Stankovic, C. M. Liang, and **S. Lin**, Reducing Waste for Computers by Human-in-the-Loop Control, In Proc. of *the IEEE Transactions on Emerging Topics in Computing (TETC)*, 2013.
- X. Li, J. Wu, **S. Lin**, and X. Du. Channel switching control policy for wireless mesh networks. Proc. of the *Journal of Parallel and Distributed Computing (JPDC)*, 2012.
- G. Zhou, Q. Li, J. Li, Y. Wu, **S. Lin**, J. Lu, C. Wan, M. D. Yarvis, and J. A. Stankovic. Adaptive and Radio-Agnostic QoS for Body Sensor Networks. *ACM Transactions on Embedded Computing Systems (TECS)*, 2011.

Journal Paper under Review

- L. Chen, **S. Lin**, and H. Huang. Charge Me If You Can: Charging Path Optimization and Scheduling in Mobile Networks. Submitted to the *IEEE/ACM Transactions on Networking (ToN)*.
- H. Xu, G. Zhao, **S. Lin**, C. Qiao, P. Wang, L. Huang, Delay-Constrained Flow Rule Deployment for Software Defined Networks. Submitted to *the IEEE Transactions on Cloud Computing (TCC)*.

- H. Huang, **S. Lin**, L. Chen, J. Gao, A. Mamat, J. Wu. Dynamic Mobile Charger Scheduling in Heterogeneous Wireless Sensor Networks. Submitted to ACM *Transactions on Sensor Networks*.
- K. S. Liu, B. Schiler, J. Gao, **S. Lin**, J. Mitchel Optimizing Sensor Deployment with Line-Of-Sight Constraints: Theory and Practice. Submitted to ACM TOSN.

Conference Paper

- Y. Yuan, M. Ma, S. Han, D. Zhang, F. Miao, J. Stankovic, **S. Lin**. DeResolver: A Decentralized Negotiation and Conflict Resolution Framework for Smart City Services. Accepted to the ACM/IEEE 11th International Conference on Cyber-Physical Systems (ICCPS), 2021.
- L. Chen, A. Giovanidis, W. Wang, and **S. Lin**. Sequential Resource Access: Theory and Algorithm. Accepted to the IEEE International Conference on Computer Communications (INFOCOM), 2021.
- C. Kushan, S. Nagaraj, R. Thielke, and **S. Lin**. mDB: Monitoring Dysfunctional Behaviors for Patients with Bipolar Disorder. Accepted to the 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'20).
- H. Huang and **S. Lin**. MET: A Novel Magneto-Inductive Sensing Based Electric Toothbrushing Monitoring System. Accepted to the 26th ACM Annual International Conference on Mobile Computing and Networking (MobiCom), 2020.
- Y. Yuan, K. S. Liu, S. Munir, J. Francis, C. Shelton, and **S. Lin**. Leveraging Fine-Grained Occupancy Estimation Patterns for Effective HVAC Control, accepted to the ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI), 2020.
- H. Chen, N. Paoletti, S. Smolka, and S. Lin. MPC-guided Imitation Learning of Neural Network Policies for the Artificial Pancreas. In Proc. of the Healthcare Systems, Population Health, and the Role of Health-Tech workshop (HSYS), 2020.
- C. Kushan, S. Nagaraj, R. Thielke, and **S. Lin**. mDB: Monitoring Dysfunctional Behaviors for Patients with Bipolar Disorder. Accepted to the 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'20).
- H. Huang, H. Chen and **S. Lin**. MagTrack: Enabling Safe Driving Monitoring with Wearable Magnetics. In Proc. of the 17th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2019.
- Y. Yuan, D. Zhang, F. Miao, J. Chen, T. He and **S. Lin**. p^2Charging: Proactive Partial Charging for Electric Taxi Systems. In Proc. of the 39th IEEE International Conference on Distributed Computing Systems (ICDCS), 2019.
- Y. Yuan, **S. Lin**, G. Zhou. QoE Control for Dynamic Adaptive Video Streaming over HTTP at Access Point. In Proc. of the 2019 IEEE International Conference on Industrial Internet (ICII), 2019.
- H. Chen, N. Paoletti, S. Smolka and **S. Lin**. Committed Moving Horizon Estimation for Meal Detection and Estimation in Type 1 Diabetes. In Proc. of the 2019 American Control Conference (ACC), 2019.
- H. Yang, S. Tsai, K. Liu, **S. Lin**, and J. Gao. Patrol Scheduling Against Adversaries with Varying Attack Durations. In Proc. of the 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2019.
- S. Tsai, H. Yang, K. S. Liu, **S. Lin**, R. Chowdhury, and J. Gao. Multi-Channel Assignment and Link Scheduling for Prioritized Latency-Sensitive Applications. In Proc. of the 15th International Symposium on Algorithms and Experiments for Wireless Sensor Networks (AlgoSensors), 2019.
- N. Paoletti, Z. Jiang, M. A. Islam, H. Abbas, R. Mangharam, **S. Lin**, Z. Gruber and S. Smolka. Synthesizing Stealthy Reprogramming Attacks on Cardiac Devices. In Proc. of the 10th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), 2019.

- K. S. Liu, B. Schiler, J. Gao, **S. Lin**, J. Mitchel Optimizing Sensor Deployment with Line-Of-Sight Constraints: Theory and Practice. In Proc. of the 16th International Conference on Embedded Wireless Systems and Networks (EWSN), 2018.
- H. Huang and **S. Lin**. WiDet: Robust Device Free Intrusion Detection with Multiresolution Wavelet Analysis. In Proc. of *the 21st ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, 2018. Best Paper Runner-up!
- K. Liu, J. Gao, X. Wu, and **S. Lin**. On-Street Parking Guidance with Real-Time Sensing Data for Smart Cities. In Proc. of *the 15th IEEE International Conference on Sensing, Communication and Networking (SECON)*, 2018.
- Y. Yuan, D. Zhang, F. Miao, J. A. Stankovic, T. He, G. Pappas, and **S. Lin**. Dynamic Integration of Heterogeneous Transportation Modes under Disruptive Events. In Proc. of *the 9th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*, 2018.
- D. Phan, N. Paoletti, U. Mehmood, R. Grosu, **S. Lin**, S. Stoller, A. Tiwari, J. Yang and S. Smolka. Declarative vs Rule-based Control for Flocking Dynamics. In Proc. of *the 33rd ACM/SIGAPP Symposium On Applied Computing (SAC)*, 2018.
- H. Yang, S. Tsai, J. Gao, and **S. Lin**. Optimal Safety Patrol Scheduling Using Randomized Traveling Salesman Tour. In Proc. of *the 27th Annual Fall Workshop on Computational Geometry (FWCG)*, 2017.
- U. Mehmood, N. Paoletti, D. Phan, R. Grosu, **S. Lin**, S. Stoller, A. Tiwari, J. Yang and S. Smolka. Declarative vs Rule-based Control for Flocking Dynamics. In Proc. of *the 27th Annual Fall Workshop on Computational Geometry (FWCG)*, 2017.
- F. Shmarov, N. Paoletti, E. Bartocci, **S. Lin**, S. Smolka, and P. Zuliani. SMT-based Synthesis of Safe and Robust PID Controllers for Stochastic Hybrid Systems. In Proc. of *the 13th Haifa Verification Conference (HVC)*, 2017.
- N. Paoletti, K. Liu, S. Smolka, and **S. Lin**. Data-driven Robust Control for Type-1 Diabetes Under Meal and Exercise Uncertainties. In Proc. of *the 15th Conference on Computational Methods in Systems Biology (CMSB)*, 2017.
- K. Liu, E. Pinto, S. Munir, J. Francis, C. Shelton, M. Berges, **S. Lin**. Poster Abstract: COD: A Dataset of Commercial Building Occupancy Traces. In Proc. of *the 4th ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys)*, 2017.
- Y. Ma, G. Zhou, and **S. Lin**. EliMO: Eliminating Channel Feedback from MIMO. In Proc. of *the 3rd IEEE Conference on Smart Computing (SMARTCOMP)*, 2017.
- H. Yang, K. Liu, J. Gao, **S. Lin**, S. Munir, K. Whitehouse, J. Stankovic, Reliable Stream Scheduling with Minimum Latency for Wireless Sensor Networks. In Proc. of *the 14th IEEE International Conference on Sensing, Communication and Networking (SECON)*, 2017.
- H. Huang, **S. Lin**. Poster Abstract: Toothbrushing Recognition using Neural Networks. In Proc. of *the 1st ACM/IEEE International Conference on Internet-of-Things Design and Implementation (IoTDI)*, 2017.
- K. Liu, S. Munir, **S. Lin**, J. Francis, C. Shelton. Poster Abstract: Long Term Occupancy Estimation in a Commercial Space: An Empirical Study. In Proc. of *the 16th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN)*, 2017.
- K. S. Liu, T. Mayer, H. T. Yang, E. Arkin, J. Gao, M. Goswami, M. P. Johnson, N. Kumar, **S. Lin**, Joint Sensing Duty Cycle Scheduling for Heterogeneous Coverage Guarantee, Proceedings of the *36th Annual IEEE International Conference on Computer Communications (INFOCOM'17)*, 2017.
- H. Huang, **S. Lin**. Tooth Brushing Monitoring using Wrist Watch. In Proc. of the *14th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2016.

- L. Chen, **S. Lin**, H. Huang. Charge Me If You Can: Charging Path Optimization and Scheduling in Mobile Networks. In Proc. of the *17th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, 2016.
- K. Liu, J. Gao, **S. Lin**, H. Huang, B. Schiller. Joint Sensor Duty Cycle Scheduling with Coverage Guarantee. In Proc. of the *17th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, 2016.
- F. Miao, **S. Lin**, S. Munir, J. A. Stankovic, H. Huang, D. Zhang, T. He and G. J. Pappas. Data-Driven Robust Taxi Dispatch Approaches. Poster in the Proc. of the *ACM/IEEE 6th International Conference on Cyber-Physical Systems (ICCPS)*, 2016.
- G. Peng, G. Zhou, D. T. Nguyen, X. Qi, **S. Lin**. HIDE: AP-assisted Broadcast Traffic Management to Save Smartphone Energy. In Proc. of the *36th IEEE International Conference on Distributed Computing Systems (ICDCS)*, 2016.
- K. S. Liu, T. Mayer, H. Yang, E. Arkin, J. Gao, M. Goswami, M. P. Johnson, N. Kumar and **S. Lin**. Joint Sensing Duty Cycle Scheduling for Heterogeneous Coverage Guarantee. In Proc. of the 26th Annual Fall Workshop on Computational Geometry (FWCG), 2016.
- K. Joshi, **S. Lin**, S. Nirjon, H. Yang. Sensemo: An Emotion Sensing System using Physiological Cues. Poster in Proc. of the *17th International Workshop on Mobile Computing Systems and Applications (HotMobile)*, 2016.
- F. Miao, S. Han, **S. Lin**, G. Pappas. Taxi Dispatch under Model Uncertainties. In Proc. of the *54th IEEE Conference on Decision and Control (CDC)*, 2015.
- H. Huang, **S. Lin**, L. Chen, J. Gao, A. Mamat, J. Wu. Dynamic Mobile Charger Scheduling in Heterogeneous Wireless Sensor Networks. In Proc. of the *12th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, 2015.
- F. Miao, **S. Lin**, S. Munir, J. Stankovic, H. Huang, D. Zhang, T. He, and G. Pappas. Taxi Dispatch with Real-Time Sensing Data in Metropolitan Areas - a Receding Horizon Control Approach. Best paper finalist in the *6th ACM International Conference on Cyber-Physical Systems (ICCPS)*, 2015.
- B. Schiller, **S. Lin**, K. Liu, and J. Gao. Device Free Indoor Localization Using Infrared. the *Microsoft Indoor Localization Competition*, 2015.
- C. Lin, W. Wang, H. Huang, and **S. Lin**. Time-constrained Data Harvesting in WSNs: Theoretical Foundation and Algorithm Design. In Proc. of the *34th Annual IEEE International Conference on Computer Communications (IEEE Infocom)*, 2015.
- J. Huang, G. Xing, J. Niu, and **S. Lin**. CodeRepair: PHY-layer Partial Packet Recovery Without the Pain. In Proc. of the *34th Annual IEEE International Conference on Computer Communications (IEEE Infocom)*, 2015.
- Q. Xiang, H. Zhang, J. Wang, G. Xing, **S. Lin**, and L. Xiu. On Optimal Diversity in Network-Coding-Based Routing in Wireless Networks. In Proc. of the *34th Annual IEEE International Conference on Computer Communications (IEEE Infocom)*, 2015.
- V. Martin, A. Coulaby, N. Schaff, C. Tan, and **S. Lin**. Bandwidth Prediction on a WiMAX Network. In the Proc. of the *First National Workshop for REU Research in Networking and Systems*, 2014.
- X. Hei and **S. Lin**, Multi-Part File Encryption for Electronic Health Records Cloud. In Proc. of the *4th ACM MobiHoc Workshop on Pervasive Wireless Healthcare (MobileHealth)*, 2014.
- X. Hei, X. Du, and **S. Lin**. Near Field Communication based Access Control for Wireless Medical Devices. Poster in *the 15th ACM International Symposium on Mobile Ad Hoc Networking and Computing (ACM Mobihoc)*, 2014. (Best Poster Runner-up)
- H. Huang, C. Ni, J. Gao, X. Ban, A. Schnerider, **S. Lin**. Connected Wireless Camera Network Deployment with Visibility Coverage. In Proc. of the *33rd Annual IEEE International Conference on Computer Communications (INFOCOM)*, 2014.

- D. Zhang, T. He, **S. Lin**, S. Munir, and J. A. Stankovic. Dmodel: Online Taxicab Demand Model from Big Sensor Data in a Roving Sensor Network. In the Proc. of *the IEEE International Congress on Big Data (BigData)*, 2014.
- L. Xu, J. Cao, **S. Lin**, H. Dai, X. Wu, and G. Chen, Energy-efficient Broadcast Scheduling with Minimum Latency for Low-Duty-Cycle Wireless Sensor Networks. Accepted to the *10th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, 2013.
- H. Dai, X. Wu, L. Xu, G. Chen, and **S. Lin**, Using Minimum Mobile Chargers to Keep Large-scale Wireless Rechargeable Sensor Networks Running Forever. In Proc. of the *22nd International Conference on Computer Communications and Networks (ICCCN)*, 2013.
- S. Munir, J. A. Stankovic, C. M. Liang, and **S. Lin**, New Cyber Physical System Challenges for Human-in-the-Loop Control. In Proc. of the *8th International Workshop on Feedback Computing*, 2013.
- H. Huang, **S. Lin**, A. Mamat, and J. Wu, Predictive Scheduling for Spatial-dependent Tasks in Wireless Sensor Networks. In WIP of the *19th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, 2013.
- H. Huang, C. Ni, X. Ban. J. Gao, and **S. Lin**, Connected Wireless Camera Network Deployment with Visibility Coverage. Poster in Proc. of *the 12th ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN)*, 2013.
- Y. Sun, S. Zhang, H. Xu, and **S. Lin**, Cooperative Communications for Wireless Ad Hoc and Sensor Networks. Proc. of the *International Journal of Distributed Sensor Networks*, 2013.
- X. Hei, X. Du, and **S. Lin**, Two Vulnerabilities in Android OS Kernel. Proc. of *the IEEE International Conference on Communications (ICC)*, 2013.
- Y. Sun, S. Zhang, H. Xu, and **S. Lin**, New Technologies and Research Trends for Mobile Wireless Sensor Networks, 2013.
- X. Hei, X. Du, **S. Lin**, and I. Lee, PIPAC: Patient Infusion Pattern based Access Control Scheme for Wireless Insulin Pump System. Proc. of the *33rd Conference on Computer Communications (INFOCOM)*, 2013.
- P. Asare, D. Cong, S. Vattam, B. Kim, **S. Lin**, O. Sokolsky, M. Mullen-Fortino, and I. Lee, The Medical Device Dongle: An Open-Source Standards-Based Platform for Interoperable Medical Device Connectivity. Proc. of the *ACM SIGHIT International Health Informatics Symposium (IHI)*, 2012.
- D. Lexie, **S. Lin**, and J. Wu, Adaptive Control based Battery Charging Scheduling with Bursty Loads. Proc. of the *IEEE Global Communications Conference (Globecom)*, 2012.
- H. Liu, Z. Xie, J. Li, **S. Lin**, K. Whitehouse, and J. A. Stankovic. Exploiting Efficient Coordination among Multiple Firefighters in Indoor Breadcrumb Systems. Proc. of *the 22nd Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2011.
- J. N. Contractor, and **S. Lin**, Exploring Cloud Services with Body Area Networks for Medical Care. Poster in Proc. of *the IEEE Body Area Networks (Bodynets)*, 2011.
- P. Asare, D. Cong, S. Vattam, B. Kim, **S. Lin**, O. Sokolsky, M. Mullen-Fortino, and I. Lee, Demo of the Medical Device Dongle: An Open-Source Standards-Based Platform for Interoperable Medical Device Connectivity. Proc. of *Wireless Health Conference (WH)*, 2011.
- H. Liu, J. Li, Z. Xie, **S. Lin**, J. A. Stankovic, K. Whitehouse, D. Siu. Automatic and Robust Breadcrumb System Deployment for Indoor Fire-fighter Applications. Proc. of *the 8th Annual International Conference on Mobile Systems, Applications and Services (MobiSys)*, 2010.

- S. Munir, **S. Lin**, E. Hoque, S. M. Nirjon, J. A. Stankovic, and K. Whitehouse. Addressing Burstiness for Reliable Communication and Latency Bound Generation in Wireless Sensor Networks. Proc. of *the 9th ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN)*, 2010.
- **S. Lin**, G. Zhou, K. Whitehouse, Y. Wu, J. A. Stankovic, and T. He. Towards Stable Network Performance in Wireless Sensor Networks. Proc. of *the 30th IEEE Real-Time Systems Symposium (RTSS '09)*, Dec. 2009.
- **S. Lin**, John A. Stankovic. Performance Composition for Cyber Physical Systems. Proc. of *the Ph.D. Forum of the 30th Real-Time Systems Symposium (RTSS)*, 2009.
- **S. Lin**, G. Zhou, Y. Wu, J. A. Stankovic, T. He and K. Whitehouse. Achieving Stable Network Performance in Wireless Sensor Networks. Poster in Proc. of *the 6th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2008.
- Y. Wu, T. He, J. A. Stankovic, and **S. Lin**. Realistic and Efficient Multi-Channel Communications in Dense Sensor Networks. In Proc. of *the 27th Conference on Computer Communications (INFOCOM)*, May 2008.
- **S. Lin**, T. He, and J. A. Stankovic. CPS-IP: Cyber Physical Systems Interconnection Protocol. Proc. of *the 28th Ph.D. Forum of the Real-Time Systems Symposium (RTSS)*, 2007.
- **S. Lin**, J. Zhang, G. Zhou, L. Gu, T. He, and J. A. Stankovic. ATPC: Adaptive Transmission Power Control for Wireless Sensor Networks. Proc. of *the 4th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2006.
- G. Virone, A. Wood, L. Selavo, Q. Cao, L. Fang, T. Doan, Z. He, R. Stoleru, **S. Lin,** and J. A. Stankovic. An Advanced Wireless Sensor Network for Health Monitoring. Proc. *of 1st Transdisciplinary Conference on Distributed Diagnosis and Home Healthcare (D2H2)*, 2006.
- A. Wood, G. Virone, T. Doan, Q. Cao, L. Selavo, Y. Wu, L. Fang, Z. He, **S. Lin**, and J. A. Stankovic. ALARM-NET: Wireless Sensor Networks for Assisted-Living and Residential Monitoring. *Technical Report CS-2006-11*, Department of Computer Science, University of Virginia, 2006.
- J. A. Stankovic, Q. Cao, T. Doan, L. Fang, Z. He, R. Kiran, **S. Lin**, S. Son, R. Stoleru, and A. Wood. Wireless Sensor Networks for In-Home Healthcare: Potential and Challenges. Proc. of the *High Confidence Medical Device Software and Systems Workshop (HCMDSS)*, 2005.

Professional Talk

mDB: Monitoring Dysfunctional Behaviors for Patients with Bipolar Disorder	Invited Talk at the Psychiatry Department, Stony Brook 2020
Safe Driving Monitoring with Wearable Magnetics	Invited Talk at Tsinghua University, Jun 2019
A Data Driven Approach Towards A Secure and Fully Closed Loop Artificial Pancreas System	Invited Seminar for IEEE EMBS LI Chapter, Nov 2018
Smart Transportation Systems	Presentation at Stony Brook ECE Industrial Board Meeting, March 2018
Tooth Brushing Monitoring using Wrist Watch	Invited Talk at USTC Suzhou, Jul 2017

Model Predictive Control for Smart Transportation Systems	Invited Talk at Tsinghua University, Jun 2017
Long Term Occupancy Estimation in a Commercial Space: An Empirical Study	Presentation at ACM IPSN, Apr 2017
Telemedicine for Congestive Heart Failure Patients	NSF Smart and Connected Health PI Meeting, Boston University, Nov 2016
Smart Building Testbed - A CPS Approach	CEAS Workshop on Smart and Resilient Cities and Ecosystems at Stony Brook Univ, Aug 2016
Smart Transportation Systems	Vienna Univ of Technology at Vienna Austria, Delft Univ of Technology at Amsterdam Netherlands, Jul 2016
HIDE: AP-assisted Broadcast Traffic Management to Save Smartphone Energy	ICDCS at Nara Japan, Jun 2016
Data Driven Robust Control for Artificial Pancreas	NSF CyberCardia Workshop at Stony Brook Univ, Apr 2016
MPC for Urban Transportation Systems	Imperial College London, Univ of Edingburgh, Jun 2015
Taxi Dispatch with Real-Time Sensing Data in Metropolitan Areas - a Receding Horizon Control Approach	Invited Talk at CS Dept Stony Brook Univ, Apr 2015
Assuring Food Safety with Supply Chain Co-Location Control	NSF Workshop on Food Safety Global Supply Chain Research Needs, Jan 2014
Data Driven Control for Large Scaled Networked Information Systems	USTC, Nanjing Univ, Beijing Univ of Posts and Telecommunications, Beijing Normal Univ, Institute of Information Engineering at Chinese Academy of Sciences, Jan 2014
Large Scale Heterogeneous Telemedicine for Congestive Heart Failure Patients	Univ of Virginia, Aug 2013
Power Control in Cyber Physical Systems	Univ of Rome, Apr 2013
Network Control in Cyber Physical Systems	Univ of Memphis, Mar 2013
Wireless Network Virtualization	Institute of Information Engineering at Chinese Academy of Sciences, Dec 2012
Feedback Control in Cyber Physical Systems	Beihang Univ, Shandong Univ, Nanjing Univ, Univ of Science and Technology of China, Dec 2012
Control Design for Cyber Physical System	HK Univ of Science and Technology, Jun 2012
Exploring Cloud Services with Body Area Networks	BodyNets, Nov 2011
Heterogeneity and its Challenges in Wireless Networks	FutureHetNets, Apr 2011
Taming Wireless Network Challenges with Feedback Control	Univ of Delaware, Mar 2011

Taming Wireless Network Challenges with Feedback Control	Univ of Pennsylvania, Dec 2011
Taming Wireless Network Challenges with Feedback Control	Univ. of Connecticut, Nov 2010
Towards Stable Network Performance in Wireless Sensor Networks	IEEE RTSS, Dec 2009
Performance Composition for Cyber Physical Systems	IEEE RTSS, Dec 2009
Stable Routing for Dynamic Wireless Sensor Networks	Univ. of Virginia, Aug 2009
Achieving Stable Network Performance for Wireless Sensor Networks	ACM SenSys, Nov 2008
CSP-IP: An Interconnection Protocol for Cyber Physical Systems	IEEE RTSS, Dec 2007
ATPC: Adaptive Transmission Power Control for Wireless Sensor Networks	ACM SenSys, Nov 2006

Research Collaboration

John A. Stankovic, Kamin Whitehouse	University of Virginia
Insup Lee, George Pappas, Oleg Sokolsky	University of Pennsylvania
Scott Smolka, Jie Gao	Stony Brook University
Mario Berges, Anthony Rowe	Carnegie Mellon University
Tian He	University of Minnesota
Lin Chen	Univ. Paris-Sud 11
Shahriar Nirjon	Univ. of North Carolina at Chapel Hill
Munir Sirajum	Bosch Research and Technology Center
Gang Zhou	College of William and Mary

Research Experience

Software Engineer Intern Intel China Software Center	2003 - 2004 Shanghai China
Research Assistant SJTU-IBM Research Center	2002 - 2003 Shanghai China
Training Team Member ACM ICPC Team, Shanghai Jiao Tong University	2002 - 2003 Shanghai China

Teaching Experience

Lecturer, Stony Brook University

Deterministic Signal and Systems (ESE 305)	Springs 17-18
Mobile Cloud Computing (ESE 543/343)	Springs 15-20
Cyber Physical Systems (ESE 534)	Falls 14-20

REU Advisor, Temple University 2012-2014

Lecturer, Temple University

Seminar Topic: Computer Architecture (CIS4350)	Spring 2014
System Programming (CIS2139)	Falls 2013 - 2012
Computer Architecture (CIS4350)	Springs 2011 - 2013
Mobile Cloud Computing (CIS4350)	Fall 2011

Teaching Assistant, University of Virginia

Cyber Physical Systems (CS851)	Spring 2007
Feedback Control for Computer Systems (CS851)	Spring 2006
Discrete Mathematics II (CS302)	Spring 2005
Discrete Mathematics I (CS202)	Fall 2004

Professional Activity

Guest Editor, International Journal of Distributed Sensor Networks Special Issue of Cooperative Communication for Wireless Networks	2012
Guest Editor, International Journal of Distributed Sensor Networks Special Issue of New Technologies and Research Trends for Mobile Wireless Sensor Networks	2013
NSF CyberCardia Workshop Co-Organizer, Stony Brook University	2016
NSF CAREER Workshop Co-Organizer, Philadelphia, PA	2013
Local Arrangement Chair, CPSWEEK, Philadelphia, PA	2013
TPC Co-Chair, Wireless Ad Hoc and Sensor Networks Symposium, IEEE International Conference on Computing, Networking and Communications	2018
TPC Vice Chair, IEEE Conference on BodyArea Networks (BodyNet)	2013
TPC Track Chair, International Conference on Computing, Networking and Communications (ICNC)	2017
WISE academic advising of ECE students	Fall 2019
CEAS Diversity and Outreach Committee	2019-present
CEAS Strategic Planning Committee, Stony Brook University	2019-present
Undergraduate Committee, ECE, Stony Brook University	2016-present
Graduate Admission Committee, ECE, Stony Brook Univeristy	2015-present
Qualifying Exam Committee, ECE, Stony Brook University	2015-present
CEAS Scholarship Committee, ECE, Stony Brook University	2017-present
Ranking Committee Chair, ECE, Stony Brook University	2017-present
NSF REU Mentor	2012-2014

Technical Committee Member

IEEE Conference on Computer Communications (INFOCOM)	2012 - 2018
ACM International Conference on Information Processing in Sensor Networks (IPSN)	2018
IEEE Real-Time Systems Symposium (RTSS)	2015 – 2017
Medical Cyber Physical Systems Workshop (MCPS)	2014 - 2016
IEEE BodyArea Networks (BodyNet) (TPC Vice Chair)	2013

IEEE International Conference on Distributed Computing Systems (ICDCS)	2012 - 2016
High Confidence Medical Devices, Software, and Systems and Medical Device Plug-and-Play Interoperability Workshop (HCMDSS)	2011 - 2013
IEEE International Conference on Cyber-Physical Systems (ICCPS)	2012 - 2013
IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)	2011 - 2015
International Conference on Computer Communications and Networks (ICCCN)	2012 - 2013
IEEE International Conference on Networking, Architecture, and Storage	2011 - 2013
IEEE International Conference on Computing, Networking and Communications	2012 - 2013
IEEE BodyArea Networks (BodyNet)	2011 - 2012
IEEE Conference on Computer Communications workshop on Machine-to-Machine Communications and Networking	2012
International Workshop on Cyber-Physical Networking Systems	2012 - 2013
IEEE International Conference on Service Oriented Computing & Applications	2012
IEEE International Conference on Embedded and Ubiquitous Computing	2012 - 2013
IEEE Wireless Communications and Networking Conference	2012 - 2013
International Conference on Networked Sensing Systems	2012 - 2013
IEEE International Conference on Distributed Computing in Sensor Systems	2012
International Conference on High Performance Computing & Simulation	2012

Reviewer

ACM/IEEE ToN, TMC, TOSN, TETC, TPDS, TCPS, TII	2010 - 2016
Faculty Advisor, Sigma Alpha Mu, Stony Brook University	2017
CEAS Scholar Committee, Stony Brook University	2016-2017
Ranking Committee, Stony Brook University	2017
Colloquium Coordinator, Temple University	2014
Merit Committee Member, Temple University	2012
Undergraduate Study Committee Member, Temple University	2010 - 2012

ACM, IEEE Senior Member

Volunteer, ACM/IEEE Conference on Information Processing in Sensor Networks, ACM Conference on Embedded Networked Sensor Systems, Workshop on Embedded Networked Sensors	2007 - 2009
Vice President, Chinese Student and Scholar Society, University of Virginia	2005 - 2007

Student

Current PhD Students:

Yukun Yuan, Hao-Tsung Yang, Hongkai Chen

Current Master Students:

Kushal Penugonda, Zhaoyang Li, Karan Joshi, Jie Zhang, Sanjitha Chintalapati, Xianzi Shi, Reuben Mulholland

Past Postdoc:

Nicola Paoletti (Royal Holloway, University of London)

Graduated PhD Student:

Xiali Hei (Assistant Professor at University of Louisiana at Lafayette)

Kin Sum Liu (Machine Learning Researcher at Twitter)

Hua Huang (Assistant Professor at University of California Mercedes)

Graduated Master Student:

Jigar Contractor 2011; Priyam Basu 2013; Anand Madhusoodanan 2013; Saumil A Pradhan 2013, Yang Cao 2014, Karan Joshi 2016, Jie Zhang 2016, Sumit Gupta (partially supported by my start-up grant) 2017, Nirali Nayan Shah 2017, Nidha Shah 2017, Neha Gupta 2018, Aswin Netash Venkatesh 2018, Kewei Wang 2018, Shiqi Nan 2018, Sukrutha Jade 2018.

Mentored Undergraduate Students:

Jianian Wang, Sun Woo Kim, Kawing Fong, Xuhao Yang, Chaojie Wang, Lin Huang, Xujin Zhang, Kam Hou U, Jianwei Qiu, A. S. M. Abdul Kader, Dylan Lexie, Adama Coulibaly, Neil Asnani. Hichem Nassiri, Hao M Vi, Andrew Thomas Schneider

Senior Design Projects 2014-2019:

Group 1 - Hanchen Li Guozhou Wu Ye Wang

Group 2 - David Sternheim Vraj Parikh Shimul Biswas

Group 1 - Zeshi Du, Rong Chen, Wesley Huang, Xinyun Xiao

Group 2 - Stanley Li, Amdadul Chowdhury, Kwanin Leung, Rakibul Hossain

Group 3 - Chaojie Wang, Huang Lin

Group 4 - Marcko Sicoco, Lisa Yee

Group 5 - Chaojie Wang and Huang Lin
Group 6 - Sanford Zheng, Benny Yang, and Shiyu Lin
Group 7 - Richie Agarwal and Krisshanth Venkidupathy
Group 8 - Chun Lu and Ibrar Javaid
Group 9 - Bryan Hallock and Anthony Brangaitis

Mentored REU Students:

Nathan Schaaf (William & Marry), Jodi Lo (Notre Dame), Rafael Henrique (Temple Univ)

PhD Thesis Committee: Jong-Ha Lee 2011, Temple; Ge Peng 2016, William & Mary

Master Thesis Committee for Xiaoguang Li, 2012

Patent

U.S. Provisional Patent No. 62318945 : Toothbrushing monitoring system and method 2016

U.S. Provisional Patent No. 62837806: SYSTEM AND METHOD FOR TRACKING HUMAN BEHAVIOR REAL-TIME WITH SINGLE MAGNETOMETER SENSOR AND MAGNETS 2020

U.S. Patent No. US 16850860: HVAC CONTROL FINE-GRAINED OCCUPANCY PATTERN ESTIMATION 2020

U.S. Provisional Patent No. 62/864,858: SYSTEM AND METHOD FOR TOOTHBRUSH MONITORING USING MAGNETO-INDUCTIVE COIL SENSOR 2020