

# Shaohan Hu

Last Updated on November 16, 2021

---

|                         |   |                                 |                       |
|-------------------------|---|---------------------------------|-----------------------|
| CONTACT                 | ✉ hushaohan@gmail.com   | ☎ +1 (413) 551-9674             | 🌐 hushaohan.github.io |
| RESEARCH INTERESTS      | I am broadly interested in quantum computing, artificial intelligence, machine learning, internet of things, mobile computing, and cloud computing. |                                 |                       |
| EMPLOYMENT              | <b>JPMorgan Chase - FLARE</b> , New York, NY<br>Executive Director  | January 2021 - Present          |                       |
|                         | <b>IBM Research</b> , Yorktown Heights, NY<br>Research Staff Member   | September 2016 - December 2020  |                       |
|                         | <b>University of Illinois at Urbana-Champaign</b> , Urbana, IL<br>Research Assistant  | January 2012 - December 2016    |                       |
|                         | <b>Intel Corporation</b> , Santa Clara, CA<br>Graduate Intern Technical   | May 2014 - September 2014       |                       |
|                         | <b>University of Illinois at Urbana-Champaign</b> , Urbana, IL<br>Teaching Assistant  | August 2011 - December 2011     |                       |
|                         | <b>Dartmouth College</b> , Hanover, NH<br>Teaching Assistant  | September 2008 - September 2010 |                       |
|                         | <b>University of Massachusetts at Amherst</b> , Amherst, MA<br>Teaching Assistant   | January 2008 - May 2008         |                       |
| EDUCATION               | <b>PhD</b> , Computer Science<br>University of Illinois at Urbana-Champaign, IL, USA  | May 2017                        |                       |
|                         | <b>MS</b> , Computer Science<br>Dartmouth College, NH, USA  | June 2011                       |                       |
|                         | <b>BS</b> , Computer Science, Mathematics and Statistics<br>University of Massachusetts at Amherst, MA, USA   | May 2008                        |                       |
| PROFESSIONAL ACTIVITIES | <b>Technical Program Committee</b>  |                                 |                       |
|                         | AICHALLENGEIoT .....  | 2021                            |                       |
|                         | International Workshop on Challenges in Artificial Intelligence and Machine Learning for Internet of Things   |                                 |                       |
|                         | Q-SE .....  | 2021                            |                       |
|                         | International Workshop on Quantum Software Engineering  |                                 |                       |
|                         | WWW .....   | 2018–2019                       |                       |
|                         | The Web Conference  |                                 |                       |
|                         | ICCCN .....   | 2019                            |                       |
|                         | International Conference on Computer Communications and Networks  |                                 |                       |
|                         | IoTDI .....   | 2019                            |                       |
|                         | International Conference on Internet of Things Design and Implementation - Posters, Demos   |                                 |                       |
|                         | EMERGING .....  | 2017–2019                       |                       |
|                         | International Conference on Emerging Networks and Systems Intelligence  |                                 |                       |
|                         | CYBER .....   | 2017–2019                       |                       |
|                         | International Conference on Cyber-Technologies and Cyber-Systems  |                                 |                       |

|  |           |
|--|-----------|
| <b>SENSORCOMM</b> .....  | 2017–2019 |
| International Conference on Sensor Technologies and Applications                                     |           |
| <b>UBICOMM</b> .....   | 2012–2019 |
| International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies          |           |
| <b>SOCIALSENS</b> .....  | 2018      |
| International Workshop on Social Sensing   |           |
| <b>MISENET</b> .....   | 2018      |
| IEEE International Workshop on Mission-Oriented Wireless Sensor and Cyber-Physical System Networking |           |
| <b>IPSN</b> .....  | 2016      |
| ACM/IEEE International Conference on Information Processing in Sensor Networks - Posters             |           |

**Conference Reviewer**

|  |           |
|--|-----------|
| <b>ASPLOS</b> .....  | 2021      |
| Architectural Support for Programming Languages and Operating Systems                        |           |
| <b>MOBICOM</b> .....   | 2018–2019 |
| ACM International Conference on Mobile Computing and Networking                              |           |
| <b>WIOPT</b> .....   | 2018      |
| International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks |           |
| <b>SENSYS</b> .....  | 2015–2017 |
| ACM International Conference on Embedded Networked Sensor Systems                            |           |
| <b>IPSN</b> .....  | 2017      |
| ACM/IEEE International Conference on Information Processing in Sensor Networks               |           |
| <b>CDC</b> .....   | 2016      |
| International Conference on Decision and Control   |           |
| <b>MOBIHOC</b> .....   | 2016      |
| International Symposium on Mobile Ad Hoc Networking and Computing                            |           |
| <b>INFOCOM</b> .....   | 2015–2016 |
| IEEE International Conference on Computer Communications                                     |           |
| <b>ICDCS</b> .....   | 2015      |
| IEEE International Conference on Distributed Computing Systems                               |           |
| <b>ICC</b> .....   | 2015      |
| IEEE International Conference on Communications  |           |
| <b>ICCVE</b> .....   | 2014      |
| International Conference on Connected Vehicles & Expo  |           |
| <b>MILCOM</b> .....  | 2014      |
| Military Communications Conference   |           |
| <b>SECON</b> .....   | 2014      |
| IEEE International Conference on Sensing, Communication, and Networking                      |           |
| <b>ICDM</b> .....  | 2013      |
| IEEE International Conference on Data Mining   |           |
| <b>ICCCT</b> .....   | 2013      |
| International Conference on Computing and Convergence Technology                             |           |
| <b>UBICOMP</b> .....   | 2012      |
| ACM International Conference on Ubiquitous Computing   |           |

**Journal Reviewer**

|   |                 |
|---|-----------------|
| <b>TQE</b> .....  | 2021            |
| IEEE Transactions on Quantum Engineering  |                 |
| <b>KNOWLEDGE-BASED SYSTEMS</b> .....  | 2017–2018, 2021 |
| Elsevier Knowledge-Based Systems Journal  |                 |
| <b>TMC</b> .....  | 2014–2018, 2020 |
| IEEE Transactions on Mobile Computing   |                 |
| <b>TC</b> .....   | 2017, 2019–2020 |
| IEEE Transactions on Computers  |                 |
| <b>SOFTWAREX</b> .....  | 2020            |
| Elsevier SoftwareX Journal  |                 |
| <b>TPDS</b> .....   | 2019            |
| IEEE Transactions on Parallel and Distributed Systems                               |                 |
| <b>SUPE</b> .....   | 2019            |
| The Journal of Supercomputing   |                 |
| <b>IMWUT</b> .....  | 2017–2018       |
| Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies |                 |
| <b>TON</b> .....  | 2014, 2018      |
| IEEE/ACM Transactions on Networking   |                 |
| <b>SENSORS</b> .....  | 2016–2018       |
| MDPI Sensors Journal  |                 |
| <b>APPLIED SCIENCES</b> .....   | 2018            |
| MDPI Applied Sciences Journal   |                 |

|  |      |
|--|------|
| ALGORITHMS . . . . .   | 2018 |
| MDPI Algorithms Journal                                      |      |
| TSC . . . . .  | 2017 |
| IEEE Transactions on Services Computing                      |      |
| CSTT . . . . .   | 2017 |
| Current Signal Transduction Therapy                          |      |
| COMNET . . . . .   | 2017 |
| Computer Networks  |      |
| ASEJ . . . . .   | 2017 |
| Ain Shams Engineering Journal                                |      |
| COMPUTERS . . . . .  | 2017 |
| MDPI Computers Journal                                       |      |
| TOSN . . . . .   | 2016 |
| ACM Transactions on Sensor Networks                          |      |
| TCPS . . . . .   | 2016 |
| ACM Transactions on Cyber-Physical Systems                   |      |
| FITEE . . . . .  | 2016 |
| Frontiers of Information Technology & Electronic Engineering |      |
| MISY . . . . .   | 2016 |
| Mobile Information Systems                                   |      |
| TWC . . . . .  | 2015 |
| IEEE Transactions on Wireless Communications                 |      |
| TII . . . . .  | 2014 |
| IEEE Transactions on Industrial Informatics                  |      |
| AHSWN . . . . .  | 2013 |
| Ad Hoc & Sensor Wireless Networks                            |      |
| IJGI . . . . .   | 2012 |
| International Journal of Geo-Information                     |      |

PUBLICATIONS

**Quantum** 2021 Sergey Bravyi, Ruslan Shaydulin, **Shaohan Hu**, Dmitri Maslov, *Clifford Circuit Optimization with Templates and Symbolic Pauli Gates*, *Quantum – The Open Journal for Quantum Science (Quantum)*, Volume 5, Number 580, November, 2021

**arXiv** 2021 Marco Pistoia, Syed Farhan Ahmad, Akshay Ajagekar, Alexander Buts, Shouvanik Chakrabarti, Dylan Herman, **Shaohan Hu**, Andrew Jena, Pierre Minssen, Pradeep Niroula, Arthur Rattew, Yue Sun, Romina Yalovetzky, *Quantum Machine Learning for Finance*, arXiv - Quantum Physics, September, 2021

**TOSN** 2021 Yi Zhu, Abhishek Gupta, **Shaohan Hu**, Weida Zhong, Lu Su, Chunming Qiao, *Driver Behavior-aware Parking Availability Crowdsensing System Using Truth Discovery*, *ACM Transactions on Sensor Networks (TOSN)*, Volume 17, Number 4, July, 2021

**ICST** 2020 Marco Pistoia, Peng Liu, Richard Chen, **Shaohan Hu**, Stephen Wood, *Parallelization of Classical Numerical Optimization in Quantum Variational Algorithms*, *IEEE International Conference on Software Testing, Validation and Verification (ICST)*, Porto, Portugal, August 24-28, 2020

**arXiv** 2020 Scott Schneider, Xavier Guerin, **Shaohan Hu**, Kun-Lung Wu, *A Cloud Native Platform for Stateful Streaming*, arXiv - Distributed, Parallel, and Cluster Computing, May, 2020

**IPSN** 2020 Abhishek Gupta, **Shaohan Hu**, Weida Zhong, Adel Sadek, Lu Su, Chunming Qiao, *Road Grade Estimation Using Crowd-sourced Smartphone Data*, *ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN)*, Sydney, Australia, April 21-24, 2020

**arXiv** 2019 Arthur G. Rattew, **Shaohan Hu**, Marco Pistoia, Richard Chen, Steve Wood, *A Domain-agnostic, Noise-resistant, Hardware-efficient Evolutionary Variational Quantum Eigensolver*, arXiv - Quantum Physics, October, 2019

- ICDCS 2019** Tarek Abdelzaher, Shuochao Yao, Yifan Hao, Yiran Zhao, Ailing Piao, Huajie Shao, Dongxin Liu, Shengzhong Liu, **Shaohan Hu**, Dulanga Weerakoon, Kasthuri Jayarajah, Archan Misra, *Eugene: Towards Deep Intelligence as a Service*, IEEE International Conference on Distributed Computing Systems (ICDCS), Dallas, Texas USA, July 7-10, 2019
- Computer 2019** **Shaohan Hu**, Peng Liu, Chun-Fu Richard Chen, Marco Pistoia, Jay Gambetta, *Reduction-based Problem Mapping for Quantum Computing*, IEEE Computer, Volume 52, Number 6, June, 2019
- Computer 2019** Peng Liu, **Shaohan Hu**, Marco Pistoia, Chun-Fu Richard Chen, Jay Gambetta, *Stochastic Optimization of Quantum Programs*, IEEE Computer, Volume 52, Number 6, June, 2019
- DAC 2019** **Shaohan Hu**, Dmitri Maslov, Marco Pistoia, Jay Gambetta, *Efficient Circuits for Quantum Search over 2D Square Lattice Architecture*, Design Automation Conference - Latest Breaking Results (DAC), Las Vegas, Nevada USA, June 2-6, 2019
- WWW 2019** Shuochao Yao, Ailing Piao, Wenjun Jiang, Yiran Zhao, Huajie Shao, Shengzhong Liu, Dongxin Liu, Jinyang Li, Tianshi Wang, **Shaohan Hu**, Lu Su, Jiawei Han, Tarek Abdelzaher, *STFNets: Learning Sensing Signals from the Time-Frequency Perspective with Short-Time Fourier Neural Networks*, The Web Conference (WWW), San Francisco, CA USA, May 13-17, 2019
- INFOCOM 2019** Shuochao Yao, Yiran Zhao, Huajie Shao, Dongxin Liu, Shengzhong Liu, Yifan Hao, Ailing Piao, **Shaohan Hu**, Lu Su, Tarek Abdelzaher, *SADeepSense: Self-Attention Deep Learning Framework for Heterogeneous On-Device Sensors in Internet of Things Applications*, IEEE International Conference on Computer Communications (INFOCOM), Paris, France, April 29-May 2, 2019
- IMWUT 2018** Shuochao Yao, Yiran Zhao, Huajie Shao, Chao Zhang, Aston Zhang, **Shaohan Hu**, Dongxin Liu, Shengzhong Liu, Lu Su, Tarek F. Abdelzaher, *SenseGAN: Enabling Deep Learning for Internet of Things with a Semi-Supervised Framework*, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 2, Number 3, September, 2018. (Presented at UBIComp 2018)
- ICSE 2018** **Shaohan Hu**, Peng Liu, Chun-Fu Richard Chen, Marco Pistoia, *Automatically Solving NP-Complete Problems on a Quantum Computer*, International Conference on Software Engineering (ICSE), Gothenburg, Sweden, May 27-June 3, 2018
- EMDL 2018** Shuochao Yao, Yiran Zhao, **Shaohan Hu**, Tarek F. Abdelzaher, *QualityDeepSense: Quality-Aware Deep Learning Framework for Internet of Things Applications with Sensor-Temporal Attention*, International Workshop on Embedded and Mobile Deep Learning (EMDL), Munich, Germany, June 15, 2018
- Computer 2018** Shuochao Yao, Yiran Zhao, Aston Zhang, **Shaohan Hu**, Huajie Shao, Chao Zhang, Lu Su, Tarek Abdelzaher, *Deep Learning for the Internet of Things*, IEEE Computer, Volume 51, Number 5, May, 2018
- TPDS 2018** Wenjun Jiang, Chenglin Miao, Lu Su, Qi Li, **Shaohan Hu**, Shiguang Wang, Jing Gao, Hengchang Liu, Tarek F. Abdelzaher, Jiawei Han, Xue Liu, Yan Gao, Lance Kaplan, *Towards Quality Aware Information Integration in Distributed Sensing Systems*, IEEE Transactions on Parallel and Distributed Systems (TPDS), Volume 29, Number 1, January, 2018

- JSAN 2018** Jongdeog Lee, Kelvin Marcus, Tarek Abdelzaher, Md Tanvir A. Amin, Amotz Bar-Noy, William Dron, Ramesh Govindan, Reginald Hobbs, **Shaohan Hu**, Jung-Eun Kim, Lui Sha, Shuochao Yao, Yiran Zhao, *Athena: Towards Decision-Centric Anticipatory Sensor Information Delivery*, Journal of Sensor and Actuator Networks (JSAN), Volume 7, Number 1, January, 2018
- IMWUT 2017** Yiran Zhao, Shuochao Yao, Shen Li, **Shaohan Hu**, Huajie Shao, Tarek Abdelzaher, *VibeBin: A Vibration-Based Waste Bin Level Detection System*, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 1, Number 3, September, 2017. (Presented at UBIComp 2017)
- TCPS 2017** Hongwei Wang, Yunlong Gao, **Shaohan Hu**, Shiguang Wang, Renato Mancuso, Minje Kim, Poliang Wu, Lu Su, Lui Sha, Tarek Abdelzaher, *On Exploiting Structured Human Interactions to Enhance Sensing Accuracy in Cyber-physical Systems*, ACM Transactions on Cyber-Physical Systems (TCPS), Volume 1, Number 3, July, 2017
- ICDCS 2017** Tarek Abdelzaher, Tanvir Al Amin, Amotz Bar-Noy, William Dron, Ramesh Govindan, Reginald Hobbs, **Shaohan Hu**, Jung-Eun Kim, Jongdeog Lee, Kelvin Marcus, Shuochao Yao Yiran Zhao, *Decision-driven Execution: A Distributed Resource Management Paradigm for the Age of IoT*, International Conference on Distributed Computing Systems (ICDCS), Atlanta, GA USA, June 5-8, 2017
- ICDCS 2017** Shen Li, Md Tanvir Al Amin, Raghu Ganti, Mudhakar Srivatsa, **Shaohan Hu**, Yiran Zhao Tarek Abdelzaher, *Stark: Optimizing In-Memory Computing For Dynamic Dataset Collections*, International Conference on Distributed Computing Systems (ICDCS), Atlanta, GA USA, June 5-8, 2017
- VTC 2017** Yunfei Hou, Abhishek Gupta, Tong Guan, **Shaohan Hu**, Lu Su, Chunming Qiao, *VehSense: Slippery Road Detection Using Smartphones*, IEEE Vehicular Technology Conference (VTC), Sydney, Australia, June 4-7, 2017
- TMC 2017** Chao Xu, **Shaohan Hu**, Zheng Wei, Tarek F. Abdelzaher, Pan Hui, Zhiheng Xie, Hengchang Liu, John Stankovic, *Efficient 3G/4G Budget Utilization in Mobile Sensing Applications*, IEEE Transactions on Mobile Computing (TMC), Volume 16, Number 6, June, 2017
- ICCPs 2017** Yiran Zhao, Shen Li, **Shaohan Hu**, Lu Su, Shuochao Yao, Huajie Shao Tarek Abdelzaher, *GreenDrive: A Smartphone-based Intelligent Speed Adaptation System With Real-time Traffic Signal Prediction*, International Conference on Cyber-Physical Systems (ICCPs), Pittsburgh, PA USA, April 18-21, 2017. (**Best paper award**)
- WWW 2017** Shuochao Yao, **Shaohan Hu**, Yiran Zhao, Aston Zhang, Tarek Abdelzaher, *DeepSense: A Unified Deep Learning Framework for Time-Series Mobile Sensing Data Processing*, International International World Wide Web Conference (WWW), Perth, Australia, April 3-7, 2017
- TMC 2016** Xiaoshan Sun, **Shaohan Hu**, Lu Su, Tarek F. Abdelzaher, Pan Hui, Wei Zheng, Hengchang Liu, John Stankovic, *Participatory Sensing Meets Opportunistic Sharing: Automatic Phone-to-Phone Communication in Vehicles*, IEEE Transactions on Mobile Computing (TMC), Volume 15, Number 10, October, 2016
- VLDB 2016** Yiran Zhao, Shen Li, **Shaohan Hu**, Hongwei Wang, Shuochao Yao, Huajie Shao, Tarek Abdelzaher, *An Experimental Evaluation of Datacenter Workloads On Low-Power Embedded Micro Servers*, International Conference on Very Large Data Bases (VLDB), New Delhi, India, September 5-9, 2016

- ICCM 2016 Christian Lebiere, Don Morrison, Tarek Abdelzaher, **Shaohan Hu**, Cleotilde Gonzalez, Norbou Buchler, Vladislav D. Veksler, *Cognitive Models of Prediction as Decision Aids*, International Conference on Cognitive Modeling (ICCM), College Park, PA USA, August 4-6, 2016
- ICDCS 2016 Shuochao Yao, **Shaohan Hu**, Shen Li, Yiran Zhao, Lu Su, Lance Kaplan, Aylin Yener, Tarek F. Abdelzaher, *On Source Dependency Models for Reliable Social Sensing: Algorithms and Fundamental Error Bound*, IEEE International Conference on Distributed Computing Systems (ICDCS), Nara, Japan, June 27-30, 2016
- IPSN 2016 Shuochao Yao, Md Tanvir Amin, Lu Su, **Shaohan Hu**, Shen Li, Shiguang Wang, Yiran Zhao, Tarek Abdelzaher, Lance Kaplan, Charu Aggarwal, Aylin Yener, *Recursive Ground Truth Estimator for Social Data Streams*, ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), Vienna, Austria, April 11-14, 2016
- TMC 2016 Fatemeh Saremi, Omid Fatemieh, Hossein Ahmadi, Hongyan Wang, Tarek Abdelzaher, Raghu Ganti, Hengchang Liu, **Shaohan Hu**, Shen Li, Lu Su, *Experiences with GreenGPS – Fuel-Efficient Navigation using Participatory Sensing*, IEEE Transactions on Mobile Computing (TMC), Volume 15, Number 3, March, 2016
- RTSS 2015 **Shaohan Hu**, Shuochao Yao, Haiming Jin, Yiran Zhao, Yitao Hu, Xiaochen Liu, Nooreddin Naghibolhosseini, Shen Li, Akash Kapoor, William Dron, Lu Su, Amotz Bar-Noy, Pedro Szekely, Ramesh Govindan, Reginald Hobbs, Tarek F. Abdelzaher, *Data Acquisition for Real-time Decision-making under Freshness Constraints*, IEEE Real-Time Systems Symposium (RTSS), San Antonio, TX USA, December 1-4, 2015
- JRTS 2015 Dong Wang, Tarek Abdelzaher, Lance Kaplan, Raghu Ganti, **Shaohan Hu**, Hengchang Liu, *Reliable Social Sensing with Physical Constraints: Analytic Bounds and Performance Evaluation*, Journal of Real-Time Systems (JRTS), Volume 51, Number 6, November, 2015
- UbiComp 2015 **Shaohan Hu**, Lu Su, Shen Li, Shiguang Wang, Chenji Pan, Siyu Gu, Md Tanvir Amin, Hengchang Liu, Suman Nath, Romit Roy Choudhury, Tarek F. Abdelzaher, *Experiences with eNav: A Low-power Vehicular Navigation System*, ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Osaka, Japan, September 7-11, 2015
- ATC 2015 Shen Li, **Shaohan Hu**, Raghu Ganti, Mudhakar Srivatsa, Tarek Abdelzaher, *Pyro: A Spatial-Temporal Big-Data Storage System for Dynamic Workload Hotspots*, USENIX Annual Technical Conference (ATC), Santa Clara, CA USA, July 8-10, 2015
- TOSN 2015 **Shaohan Hu**, Lu Su, Hengchang Liu, Hongyan Wang, Tarek F. Abdelzaher, *SmartRoad: Smartphone-based Crowd Sensing for Traffic Regulator Detection and Identification*, ACM Transactions on Sensor Networks (TOSN), Volume 11, Number 4, July, 2015
- DCOSS 2015 **Shaohan Hu**, Shen Li, Shuochao Yao, Lu Su, Ramesh Govindan, Reginald Hobbs, Tarek F. Abdelzaher, *On Exploiting Logical Dependencies for Minimizing Additive Cost Metrics in Resource-Limited Crowdsensing*, IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), Fortaleza, Brazil, June 10-12, 2015

- IPSN 2015 Shiguang Wang, Lu Su, Shen Li, **Shaohan Hu**, Tanvir Amin, Hongwei Wang, Shuocho Yao, Lance Kaplan, Tarek Abdelzaher, *Scalable Social Sensing of Interdependent Phenomena*, ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), Seattle, WA USA, April 13-17, 2015
- RTAS 2015 Shen Li, **Shaohan Hu**, Tarek Abdelzaher, *The Packing Server for Real-time Scheduling of MapReduce Workflows*, IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), Seattle, WA USA, April 13-16, 2015
- ICCPs 2015 Yunlong Gao, **Shaohan Hu**, Renato Mancuso, Hongwei Wang, Minje Kim, PoLiang Wu, Lu Su, Lui Sha, Tarek Abdelzaher, *Exploiting Structured Human Interactions to Enhance Estimation Accuracy in Cyber-physical Systems*, International Conference on Cyber-Physical Systems (ICCPs), Seattle, WA USA, April 14-16, 2015
- RTSS 2014 Lu Su, Qi Li, **Shaohan Hu**, Shiguang Wang, Jing Gao, Hengchang Liu, Tarek Abdelzaher, Jiawei Han, Xue Liu, Yan Gao, Lance Kaplan, *Generalized Decision Aggregation in Distributed Sensing Systems*, IEEE Real-Time Systems Symposium (RTSS), Rome, Italy, December 2-5, 2014
- ICDCS 2014 Shen Li, **Shaohan Hu**, Shiguang Wang, Lu Su, Tarek Abdelzaher, Indranil Gupta, Richard Pace, *WOHA: Deadline-Aware Map-Reduce Workflow Scheduling Framework over Hadoop Cluster*, International Conference on Distributed Computing Systems (ICDCS), Madrid, Spain, June 30-July 3, 2014
- ICAC 2014 Shen Li, **Shaohan Hu**, Shiguang Wang, Siyu Gu, Chenji Pan, Tarek F. Abdelzaher, *WattValet: Heterogenous Energy Storage Management in Data Centers for Improved Power Capping*, International Conference on Autonomic Computing (ICAC), Philadelphia, PA USA, June 18-20, 2014
- DCOSS 2014 Siyu Gu, Chenji Pan, Hengchang Liu, Shen Li, **Shaohan Hu**, Lu Su, Shiguang Wang, Dong Wang, Md Tanvir A Amin, Ramesh Govindan, Charu Aggarwal, Raghu Ganti, Mudhakar Srivatsa, Amotz Bar-Noy, Peter Terlecky, Tarek Abdelzaher, *Data Extrapolation in Social Sensing for Disaster Response*, IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), Marina Del Rey, CA USA, May 26-28, 2014
- UIUC-TR 2014 Dong Wang, Tarek F. Abdelzaher, Lance Kaplan, Raghu Ganti, **Shaohan Hu**, Hengchang Liu, *Reliable Social Sensing with Physical Dependencies: Analytic Bounds and Performance Evaluation*, UIUC Technical Report, May 15, 2014
- INFOCOM 2014 **Shaohan Hu**, Hengchang Liu, Lu Su, Hongyan Wang, Tarek Abdelzaher, Pan Hui, Wei Zheng, Zhiheng Xie, John Stankovic, *Towards Automatic Phone-to-Phone Communication for Vehicular Networking Applications*, IEEE International Conference on Computer Communications (INFOCOM), Toronto, Canada, April 27-May 2, 2014
- UIUC-TR 2014 **Shaohan Hu**, Lu Su, Shen Li, Shiguang Wang, Chenji Pan, Siyu Gu, Md Tanvir Amin, Hengchang Liu, Suman Nath, Romit Roy Choudhury, Tarek F. Abdelzaher, *eNav: Smartphone-based Energy Efficient Location Sensing for Low-Power Vehicular Navigation*, UIUC Technical Report, April 25, 2014
- IPSN 2014 **Shaohan Hu**, Lu Su, Shen Li, Shiguang Wang, Chenji Pan, Siyu Gu, Md Tanvir Al Amin, Hengchang Liu, Suman Nath, Romit Roy Choudhury, Tarek F. Abdelzaher, *Poster Abstract: eNav – a Smartphone-based Energy Efficient Vehicular Navigation System*, ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), Berlin, Germany, April 15-17, 2014. (**Best poster award**)

- PUC 2014** Nicholas D. Lane, Ye Xu, Hong Lu, **Shaohan Hu**, Tanzeem Choudhury, Andrew T. Campbell, Feng Zhao, *Community Similarity Networks*, ACM/Springer Journal of Personal and Ubiquitous Computing (PUC), Volume 18, Number 2, February, 2014
- RTSS 2013** Dong Wang, Tarek Abdelzaher, Lance Kaplan, Raghu Ganti, **Shaohan Hu**, Hengchang Liu, *Exploitation of Physical Constraints for Reliable Social Sensing*, IEEE Real-Time Systems Symposium (RTSS), Vancouver, Canada, December 4-6, 2013
- SenSys 2013** Hengchang Liu, Siyu Gu, Chenji Pan, Wei Zheng, Shen Li, **Shaohan Hu**, Shiguang Wang, Dong Wang, Tanvir Amin, Lu Su, Zhiheng Xie, Ramesh Govindan, Charu Aggarwal, Amotz Barnoy, Tarek Abdelzaher, *Demo Abstract: Extrapolation from Participatory Sensing Data*, ACM Conference on Embedded Networked Sensor Systems (SenSys), Rome, Italy, November 11-15, 2013
- UIUC-TR 2013** **Shaohan Hu**, Hengchang Liu, Lu Su, Hongyan Wang, Tarek Abdelzaher, *SmartRoad: A Mobile Phone Based Crowd-Sourced Road Sensing System*, UIUC Technical Report, August 30, 2013
- ICCCN 2013** Shiguang Wang, **Shaohan Hu**, Shen Li, Hengchang Liu, Md Yusuf Sarwar Uddin, Tarek Abdelzaher, *MINERVA: Information-Centric Programming for Social Sensing*, International Conference on Computer Communications and Networks (ICCCN), Nassau, Bahamas, July 30-August 2, 2013
- ICDCS 2013** Shen Li, Shiguang Wang, Fan Yang, **Shaohan Hu**, Fatemeh Saremi, Tarek Abdelzaher, *Proteus: Power Proportional Memory Cache Cluster in Data Centers*, International Conference on Distributed Computing Systems (ICDCS), Philadelphia, PA USA, July 8-11, 2013
- UIUC-TR 2013** **Shaohan Hu**, Lu Su, Hengchang Liu, Hongyan Wang, Tarek Abdelzaher, *SmartRoad: A Crowd-Sourced Traffic Regulator Detection and Identification System*, UIUC Technical Report, April 18, 2013
- INFOCOM 2013** Hengchang Liu, **Shaohan Hu**, Wei Zheng, Zhiheng Xie, Shiguang Wang, Pan Hui, Tarek F. Abdelzaher, *Efficient 3G Budget Utilization in Mobile Participatory Sensing Applications*, IEEE International Conference on Computer Communications (INFOCOM), Turin, Italy, April 14-19, 2013
- IPSN 2013** **Shaohan Hu**, Lu Su, Hengchang Liu, Hongyan Wang, Tarek Abdelzaher, *Poster Abstract: SmartRoad: A Crowd-Sourced Traffic Regulator Detection and Identification System*, ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), Philadelphia, PA USA, April 8-11, 2013
- RTSS 2012** Lu Su, **Shaohan Hu**, Shen Li, Feng Liang, Jing Gao, Tarek F. Abdelzaher, Jiawei Han, *Quality of Information based Data Selection and Transmission in Wireless Sensor Networks*, IEEE Real-Time Systems Symposium (RTSS), San Juan, Puerto Rico, December 4-7, 2012
- UbiComp 2011** Nicholas D. Lane, Ye Xu, Hong Lu, **Shaohan Hu**, Tanzeem Choudhury, Andrew T. Campbell, Feng Zhao, *Enabling Large-scale Human Activity Inference on Smartphones using Community Similarity Networks (CSN)*, International Conference on Ubiquitous Computing (UbiComp), Beijing, China, September 17-21, 2011. (**Best paper nominee**)



- MobiHeld 2010** Andrew T. Campbell, Tanzeem Choudhury, **Shaohan Hu**, Hong Lu, Matthew K. Mukerjee, Mashfiqui Rabbi, Rajeev D. S. Raizada, *NeuroPhone: Brain-Mobile Phone Interface using a Wireless EEG Headset*, ACM SIGCOMM Workshop on Networking, Systems, and Applications on Mobile Handhelds (MobiHeld), New Delhi, India, August 30, 2010
- PAKDD 2010** Pallika Kanani, Andrew McCallum, **Shaohan Hu**, *Resource-bounded Information Extraction: Acquiring Missing Feature Values On Demand*, Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Hyderabad, India, June 21-24, 2010. (**Best student paper runner-up award**)

PATENTS

- Cognitive Software Development* ..... GRANTED, 2020  
US10832173
- Parallelization of Numeric Optimizers* ..... GRANTED, 2020  
US10831495
- Quantum Computations of Classical Specifications* ..... GRANTED, 2020  
US10803395
- Multi-control Quantum State Inversion Gate* ..... GRANTED, 2020  
US10637480
- Parallelization of Numeric Optimizers* ..... GRANTED, 2020  
US10713055
- Quantum Reinforcement Learning Agent* ..... PENDING, 2019  
US20210049498
- Quantum Computational Method and Device* ..... PENDING, 2019  
US20200342293
- Simplified Quantum Programming* ..... PENDING, 2019  
US20190220782
- Monte Carlo Markov Chain based Quantum Program Optimization* ..... PENDING, 2018  
US20200042882
- Adaptive Quantum Circuit Construction for Multiple-Controlled-Not Gates* ..... PENDING, 2018  
US20200202247
- Automatic Quantum Searching of Object Database* ..... PENDING, 2018  
US20200183938
- Quantum Algorithm Concatenation* ..... PENDING, 2018  
US20200097859

TEACHING

**University of Illinois at Urbana-Champaign**

- **Teaching Assistant**  
CS 125: Introduction to Computer Science  
Basic Data Structure, Algorithm, OOP using Java

**Dartmouth College**

- **Teaching Assistant**  
CS 23: Software Design and Implementation — or, how to be a hacker  
Linux Bash scripting, design and implementation using C: web search (data crawling, indexing, and querying), and embedded Linux environment distributed concurrent system (remote robot control system)
- **Teaching Assistant**  
CS 8: Problem Solving with Computer Science  
Functional programming, Haskell language
- **Teaching Assistant**  
CS 5: Introduction to Computer Science  
Basic Data Structure, OOP using Java
- **Teaching Assistant**  
CS 4: Concepts in Computing

Overview of computing and computer science, basic programming using html/css/javascript, debugging, design

**University of Massachusetts at Amherst**

- **Teaching Assistant**

Math 300: Fundamental Concepts of Mathematics

Discrete mathematics, number theory, logics, set theory, rigorous proofs

- **Teaching Assistant**

CS 311: Introduction to Algorithms

Basic algorithm design, analysis, and implementations, sorting, searching, string processing, graphs

AWARDS AND  
HONORS

ICCPS Best Paper Award, April 2017

IPSN Best Poster Award, April 2014

Teachers Rated Excellent, Department of Computer Science, UIUC, March 2012

UBICOMP Best Paper Nominee, September 2011

Best TA, Department of Computer Science, Dartmouth College, September 2010

PAKDD Best Student Paper Runner-up, June 2010

Outstanding Graduate Student Teacher, Dartmouth Center for the Advancement of Learning, Dartmouth College, April 2010

CSEM (Computer Science, Engineering and Mathematics) Scholarship, UMass Amherst, January 2005–May 2008

Dean's List Honors, UMass Amherst, January 2005–May 2008

Barksdale Scholarship, UMass Amherst, March 2007

First Place Winner, Henry Jacob Mathematics Competition, UMass Amherst, March 2006

Second Place Winner, Henry Jacob Mathematics Competition, UMass Amherst, March 2005

WORK  
AUTHORIZATION

U.S. Citizen