Shameek Bhattacharjee

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Academic Degrees

Doctor of Philosophy, 2015, Dept. of EECS, University of Central Florida, Orlando, FL
Program: Ph.D. in Computer Engineering
Advisor: Prof. Mainak Chatterjee
GPA: 3.88/4.0

Master of Science, 2011, Dept. of EECS, University of Central Florida, Orlando, FL
Program: M.S. in Computer Engineering
Track: Computer Networks and Security
GPA: 3.88/4.0

Bachelor of Technology, 2009, West Bengal University of Technology, India
Department: Computer and Information Science and Technology
Program: B. Tech in Information Technology
GPA: 8.79/10.0

Professional Experience

Assistant Professor, (Sept. 2018 - Present)
Western Michigan University, Kalamazoo, MI, USA

Post Doctoral Research Associate, (Oct 2015 - Aug 2018)
Missouri Univ. of Sc. & Tech., Rolla, MO, USA

Software Engineer III, *Intern*, (May 2013 - August 2013)
Cisco Systems Inc., San Jose, CA.

Software Engineer I, *Intern*, (May 2011 - August 2011)
Bluecoat Systems Inc., Sunnyvale, CA.

Research and Teaching Assistant, (Fall 2009 - Summer 2015)
School of Electrical Engg. & Computer Science, University of Central Florida.

Selected Awards

Provost Fellowship Award, *University of Central Florida*, 2009.

Best Paper Award, *IEEE PIMRC*, 2011.

Army Research Office (ARO) Travel Grant, *IEEE CNS*, 2017, NSF Travel Grants 2014, 2015, 2016.

Research Interests

• **Data Driven Cyber Security:** Anomaly/Intrusion Detection, Device Classification, and Resilience in IoT/Cyber-Physical Human Systems using Data Science, Machine learning, Information Theory.

• **Artificial Intelligence based Trustworthy and Secure Computing:** Theory of Trust and Reputation Models using Artificial Intelligence, Decision Theory, Behavioral Economics, Bayesian Learning for Pervasive Environments.

• **Secure and Energy Efficient Dynamic Spectrum Access Networks:** Security and Dependability in Dynamic Spectrum Access/5G based Wireless Networks, Energy-efficient Spectrum Access and Optimization for Sustainable Connected Communities.

External Funded Grant/Project Awards

1. **Collaborative Research: SaTC: CORE: Small: TAURUS: Towards a Unified Robust and Secure Data Driven Approach for Attack Detection in Smart Living** (Oct. 2020-Sept. 2023) Agency: National Science Foundation (NSF), USA.
   Proposal No: 2030611, Role: Principal Investigator, Amount: $242,834

2. **CyberTraining: Pilot: Modular experiential learning for secure, safe, and reliable AI (MELSSRAI)** (Aug. 2020 - July 2022)
   Agency: National Science Foundation (NSF), USA
   Proposal No: 2017289, Role: Co-Principal Investigator, Amount: $298,257.00

3. **NeTS:JUNO2:Collaborative: STEAM: Secure and Trustworthy Framework for Integrated Energy and Mobility in Smart Connected Communities** (Sept. 2018-Aug. 2021),
   Agency: National Science Foundation, USA (NSF)
   Proposal No.: 1818942, Role: Co-PI/Subcontract Manager, Amount: $255,996.00

4. **HIPAA Compliant Authentication and Authorization of Medical Devices in Connected Healthcare Systems, (Dec. 2019- Dec. 2020)**
   Industry: Stryker Corporation Inc., Role: Principal Investigator, Amount: $9,359.

Publications List
Shameek Bhattacharjee: h-index: 10; Citations: 400+

Peer Reviewed Journal papers

1. **S. Bhattacharjee**, N. Ghosh, V. K. Shah, S. K. Das, "QnQ: A Quality and Quantity based Unified Approach for Secure and Trustworthy Mobile Crowdsensing", *IEEE Transactions on Mobile Computing*, Vol. 19, Jan., 2020.

2. **S. Bhattacharjee**, S. K. Das, "Detection and Forensics under Stealthy Data Falsification in Smart Metering Infrastructure", *IEEE Transactions on Dependable and Secure Computing*, Vol. 16, final version to appear in 2020.

3. M. Salimitari, **S. Bhattacharjee**, M. Chatterjee, Y. Fallah, " A Prospect Theoretic Approach for Trust Management in IoT Networks under Opportunistic Data Manipulation", *ACM Transactions on Sensor Networks*, Vol. 16, No. 3, Article 26, April. 2020.

4. V.K. Shah, S. Silvestri, **S. Bhattacharjee**, S.K. Das, "A Diverse Band-aware DSA Network Architecture for Delay-Tolerant Smart City Applications", *IEEE Transactions on Network and Service Management*, Jan 2020.

5. V.K. Shah, **S. Bhattacharjee**, S. Silvestri, S.K. Das, "Designing Green Communication Systems for Smart and Connected Communities via Dynamic Spectrum Access", in *ACM Transactions on Sensor Networks: Special Issue on Systems for Smart and Efficient Built Environments*, Nov. 2018.

6. **S. Bhattacharjee**, S. Debroy and M. Chatterjee, "Quantifying Trust for Robust Fusion while Spectrum Sharing in Distributed DSA Networks", *IEEE Transactions on Cognitive Communications and Networking*, vol. 3, no. 2, pp. 138-154, Jun. 2017.

7. F. Restuccia, N. Ghosh, **S. Bhattacharjee**, T. Mallodia, S.K. Das, "Quality of Information in Mobile Crowdsensing: Survey and Research Challenges", *ACM Transactions on Sensor Networks*, Vol. 13 Issue 4, Dec. 2017.

8. S. Debroy, **S. Bhattacharjee**, and M. Chatterjee, "Spectrum Map and its application in Resource Management in Cognitive Radio Networks", , *IEEE Transactions on Cognitive Communications and Networking*, vol. 1, no. 4, pp. 406-419, Dec. 2015.

9. **S. Bhattacharjee**, and Dan Marinescu, "A Cloud Service for Trust Management in Cognitive Radio networks", *International Journal of Cloud Computing (IJCC)*, Vol.3, Issue 4, pp. 326-353, 2014.

10. **S. Bhattacharjee**, S. Sengupta and M. Chatterjee, "Vulnerabilities in Cognitive Radio Networks: A Survey", *Computer Communications*, Vol. 36, pp. 1387-1398, 2013.

11. W. Wang, **S. Bhattacharjee**, M. Chatterjee and K. Kwiat, "Collaborative Jamming and Collaborative Defense in Cognitive Radio Networks", *Pervasive and Mobile Computing*, Vol. 9, Issue 4, pp. 572-587, 2013.

Peer Reviewed Conference Papers

1. Y. Ishimaki, **S. Bhattacharjee**, H. Yamana, S.K. Das, "Towards Privacy Preserving Anomaly based Attack Detection against Data Falsification in Smart Grids", *accepted in IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SMARTGRIDCOMM)* , Nov. 2020.

2. M. Wilbur, A. Dubey, B. Leao, **S. Bhattacharjee**, "A Decentralized Approach For Real Time Anomaly Detection In Transportation Networks", *IEEE Intl. Conference on Smart Computing*, Jun. 2019.

3. J. Talusan, F. Tiausas, K. Yasumoto, M. Wilbur, G. Pettet, A. Dubey, **S. Bhattacharjee**, "Smart Transportation Delay and Resiliency Testbed based on Information Flow of Things Middleware", *IEEE International Workshop on Big Data and IoT Security in Smart Computing*, Jun 2019.

4. **S. Bhattacharjee**, A. Thakur, S. K. Das, "Towards Fast and Semi-Supervised Identification of Smart Meters Launching Data Falsification Attacks", *ACM Asia Conference on Computer and Communications Security (ACM ASIACCS)*, 2018. **(AR=52/310=17%)**

5. V. Shah, S. Silvestri, **S. Bhattacharjee**, S. K. Das, "An Effective Dynamic Spectrum Access based Network Architecture for Smart Cities", *IEEE Smart Cities Conference*, 2018.

6. **S. Bhattacharjee**, A. Thakur, S. Silvestri, S. K. Das. 2017. Statistical Security Incident Forensics against Data Falsification in Smart Grid Advanced Metering Infrastructure, *ACM Conference on Data and Application Security and Privacy (ACM CODASPY)*, 2017. (**AR=21/134=16%**)

7. **S. Bhattacharjee**, N. Ghosh, V. K. Shah, S. K. Das, "QnQ: A Reputation Model to Secure Mobile Crowdsourcing Applications from Incentive Losses", *IEEE Communications and Network Security (IEEE CNS)*, 2017. (**AR=41/139=29%**)

8. V.K. Shah, **S. Bhattacharjee**, S. Silvestri, M. Chatterjee, "Designing Sustainable Smart Connected Communities using Dynamic Spectrum Access via Band Scheduling", *ACM Conference on Systems for Energy Efficient Built Environments*, 2017. (**AR=20/96=21%**)

9. **S. Bhattacharjee**, M. Salimtari, M. Chatterjee, C. Kamhoua, K. Kwiat "Preserving Data Integrity in IoT Networks under Opportunistic Data Manipulation", *IEEE Conference on Dependable Autonomic and Secure Computing (IEEE DASC)*, 2017.

10. **S. Bhattacharjee**, N. Ghosh, V. K. Shah, S. K. Das, "W2Q: A dual weighted QoI scoring mechanism in social sensing using community confidence", *IEEE Pervasive Computing and Communication Workshops (IEEE PerCom Workshops)*, 2017.

11. **S. Bhattacharjee**, M. Chatterjee, K. Kwiat, C. Kamhoua, "Bayesian inference based decision reliability under imperfect monitoring", *IEEE/IFIP Integrated Network Management (IEEE IM Workshops)*, 2015.

12. **S. Bhattacharjee**, M. Chatterjee, K. Kwiat, C. Kamhoua, "Multinomial Trust in Presence of uncertainty and adversaries in Dynamic Spectrum Access Networks", *IEEE Military Communications Conference (IEEE MILCOM)*, 2015.

13. **S. Bhattacharjee** and M. Chatterjee, "Trust based channel preference in cognitive radio networks under collaborative selfish attacks", *IEEE Personal Indoor Mobile Radio Communications (IEEE PIMRC)*, 2014.

14. **S. Bhattacharjee**, S. Debroy, M. Chatterjee, and K. Kwiat,, "Utilizing Misleading Information for Cooperative Spectrum Sensing in Cognitive Radio Networks", *IEEE International Conference on Communications (IEEE ICC)*, 2013, pp. 2612–2616.

15. S. Debroy, **S. Bhattacharjee**, M. Chatterjee, and K. Kwiat, "An Effective Use of Spectrum Usage Estimation for IEEE 802.22 Networks", *IEEE Wireless Communications and Networking Conference (IEEE WCNC)*, 2012, pp. 3239–3243.

16. **S. Bhattacharjee**, S. Debroy, and M. Chatterjee, "Trust Computation Through Anomaly Monitoring in Distributed Cognitive Radio Networks", *IEEE Personal Indoor Mobile Radio Communications (IEEE PIMRC)*, 2011, pp. 593–597.

17. **S. Bhattacharjee**, S. Debroy, M. Chatterjee, and K. Kwiat, "Trust based Fusion over Noisy Channels through Anomaly Detection in Cognitive Radio Networks", *ACM Security of Information in Networks (SIN)*, 2011, pp. 73-80.

18. S. Debroy, **S. Bhattacharjee**, M. Chatterjee, "Performance based Channel Allocation in IEEE 802.22 Networks", *IEEE Personal Indoor Mobile Radio Communications (IEEE PIMRC)*, 2011, pp. 619-623. (**Best Paper Award**).

<center>**Synergistic Activities and Service**</center>

- **Member of Program Committee:** IEEE ICNC 2016, 2017, 2018, Wireless Days 2016, 2017, 2018, IEEE Cloud (Short Paper Tracks) 2016, 2017, Intelligent Environments (IE), 2018, ACM ICDCN Workshops 2019, ACM CPS-WEEK Workshop 2019, IEEE BITS 2019, ACM ICDCN 2020, IEEE WOWMOM 2021

- **Invited Speaker:** Panelist: IEEE PerCom Workshop 2019 (Information Quality and Trustworthiness in Cyber Physical Systems and IoT), Invited Lecture: Jadavpur University 2018 ("Trustworthy Frameworks for addressing Cyber- Physical and Human Aspects of Security in Smart and Connected Communities")

- **Reviewer:** IEEE Transactions on Dependable and Secure Computing (TDSC), IEEE Transactions on Information Security and Forensics (TIFS), IEEE Transactions on Mobile Computing (TMC), IEEE Transactions on Cognitive Communications and Networking (TCCN), ACM Transactions on Sensor Networks (TOSN), IEEE Transactions on Vehicular Technology (TVT).

- **K-12 Mentoring and Outreach:** Serve each year, as a research and college education mentor for K-12 students for Kalamazoo Area Math and Science Center (KAMSC). Advised 5 students till now, including current students.

<center>**Teaching/Course Design**</center>

1. Computer Networks, CS 5550
2. Science of Cybersecurity, CS 6030
3. CYCS 5710, Network Security Fundamentals

<center>**Graduate Student Mentoring and Advising**</center>

Thesis/Dissertation/Equivalent Special Project Committees

1. Hussein Salim Al Shaekh; Degree Sought: Ph.D., Role: Chair

2. Alexander Josef Bodurka, Degree Sought: Master's Thesis, Role: Chair

3. Md. Jaminur Islam, Degree Sought: PhD., Role: Chair

4. Prithwiraj Roy, Degree Sought: PhD., Role: Co-Chair

5. Praveen Madhavarapu, Degree Sought: PhD., Role: Co-Chair.