

# Mohammad Asadul Hoque, PhD

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## CONTACT

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East Tennessee State University.  
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**Lab:** Vehicular Network Lab (<http://faculty.etsu.edu/hoquem/vnl/>)  
ETSU Innovation Laboratory, Suite#125  
2109 W Market St, Johnson City, TN 37604.

## AREA OF EXPERTISE

Connected and Autonomous Vehicles, Intelligent Transportation Systems (ITS), Smart City Infrastructure, ADAS, IoT, DSRC, IEEE 802.11p, C-V2X, LTE, 5G, Automotive Wireless Technologies, MQTT, MPTCP, SD-WAN, CAN, SPaT, SAE J2735.

## EDUCATION

**PhD** in Computer Science, University of Alabama May 2012  
**MS** in Computer Science, University of Alabama May 2010  
**BS** in Computer Science & Engg., Bangladesh Univ. of Engg. & Tech. Nov 2006

## EMPLOYMENT HISTORY

**East Tennessee State University** Aug 2013 – Present  
Associate Professor (with tenure) Aug 2019 – Present  
Assistant Professor Aug 2013 – July 2019  
Department of Computing

**Ford Motor Company** Summer 2018 – Current  
Consultant and Project Manager  
Connected Vehicle Platform and Product  
Dearborn, MI

**University of Tennessee, Knoxville** Summer 2017  
Adjunct Faculty  
Department of Electrical Engineering and Computer Science

**Texas Southern University** Jun 2012 – Jul 2013  
NSF CREST Post-Doctoral Fellow  
Center for Research on Complex Networks

**The University of Alabama** Aug 2008 – May 2012  
Graduate Assistant  
Wireless, Mobile and Networking Research Lab

**Robi Axiata Ltd.** ([www.robi.com.bd](http://www.robi.com.bd)) Jun 2007 – Jul 2008  
Database Administrator  
Dhaka, Bangladesh

**IS Pros Ltd.** ([www.ispros.com.bd](http://www.ispros.com.bd)) Sep 2006 – May 2007  
Network Engineer  
Dhaka, Bangladesh

**Udvash** ([www.udvash.com](http://www.udvash.com)) Jan 2002 – Dec 2005  
Founding Director & Senior Instructor  
Mymensingh Branch, Bangladesh

**RESEARCH  
EXPERIENCE**

<b>East Tennessee State University</b> Director, Vehicular Network Lab ETSU Innovation Laboratory, Suite#125	Aug 2015 –
<b>University of Tennessee, Knoxville</b> Research Scientist Center for Transportation Research	Summer 2017 & 2016
<b>Monash University, Australia.</b> Visiting Researcher Intelligent Transportation Center	August 2017
<b>Queensland University of Technology</b> Visiting Researcher Smart Transport Research Center	August 2017
<b>Virginia Tech.</b> Visiting Professor, Center for Sustainable Mobility Virginia Tech Transportation Institute	Jun 2014 – May 2015
<b>Qatar Mobility Innovation Lab</b> Visiting Researcher Doha, Qatar	Summer 2015
<b>Oak Ridge National Laboratory</b> Visiting Researcher National Transportation Research Center	Dec 2014, Sept. 2017
<b>Clemson University</b> Visiting Researcher Intelligent Transportation Systems Laboratory	Feb 2014, July 2017
<b>Arada Systems (Lear Corporation)</b> R&D Consultant ( <i>part time</i> ) Sunnyvale, CA	Jun 2012 – Apr 2014

**HONORS and  
AWARDS**

- Received **Certification of Award** from **Ford Motor Company** recognizing **Extraordinary Effort in Wireless Connectivity of Autonomous Vehicles** in Nov. 2018.
- Received **Faculty Excellence Award in Research: 2017** from the **Dean** of the College of Business and Technology of East Tennessee State University.
- Supervised thesis was selected for **Outstanding Masters Thesis Award** from Tennessee Conference of Graduate Schools in February 2018. (Recognized as the **Best Masters Thesis within the entire State of Tennessee**)
- **IEEE Certificate of Recognition** for outstanding leadership as the **Section Chair** of Tri Cities section, 2016.
- **IEEE Certificate of Recognition** for outstanding leadership as the **Section Chair** of Tri Cities section, 2017.
- Nominated for serving as a member of the **Board of Governors** for **IEEE Intelligent Transportation Systems Society**. (2013)
- Nominated for **Best Dissertation Award** from **IEEE Intelligent Transportation Systems Society**. (2012)
- Doctoral dissertation **featured** at the **IEEE Intelligent Transportation Systems Conference (IEEE ITSC 2012)**.

- **Interviewed and highlighted** for funded research projects in several news media and TV channels, including **ABC19, ETSU Homepage, Johnson City Press, Herald Courier**, etc.
- Article listed among the most cited articles of Elsevier Vehicular Communications (Impact Factor: 5.11)
- **Life member**, Upsilon Pi Epsilon.
- **Best paper award**, ACM Mid-Southeast Conference 2016.
- **Best paper award**, ACM Mid-Southeast Conference 2011.
- **IEEE Student Travel Award**, December 2009.
- **NSF travel grant** for Wireless Summer School, August 2009.
- **ICST travel grant** for IEEE COMSWARE 2008.
- **Research and Travel Grant**, Graduate Students Association, The University of Alabama. (2009-2011)
- **Graduate Research and Travel Support Award**, Graduate School, UA. (Fall 2009, Spring 2009, Spring 2012)
- **Best Instructor Award** for outstanding teaching performance in Engineering Admission Aid Program run by Sunrise Coaching Center, Bangladesh, 2005.
- **National Merit Scholarship**, Dhaka Education Board, Bangladesh, 1998-2006.
- **Outstanding Academic Performance Award**, Mirzapur Cadet College, 2000.

## PATENTS & DISCLOSURES

- **Lead Inventor**, Methods and systems for handling transportation reservation requests in a decentralized environment. *U.S. Patent Application# 13/832091*
- **Co-Inventor**, Stolen Vehicle Recovery Mechanism using Wireless Communications, Ford Invention Disclosure (Invention ID 84096126).
- **Co-Inventor**, Methods and systems for freeway merging assistance through dedicated short range communication. *Currently undergoing IP Committee review and technology transfer process through ETSU & UTK.*

## INDUSTRY PROJECTS

- **PI**, Development of Green Light Optimal Speed Advisory (GLOSA) application. *Collaborated with Ford Motor Company*
- **PI**, Development of Driver Advisory for Connected Vehicles. *Collaborated with Traffic Technology Services*

## GRANTS AWARDED

- **PI**, Tennessee Department of Transportation Research Grant 2019 – 2021  
Research on Connected and Automated Vehicles Investment and Smart Infrastructure in Tennessee. \$40,000
- **PI**, East Tennessee State University RDC Small Grant 2017 – 2018  
Research travel support award \$1,500
- **PI**, East Tennessee State University RDC Major Grant 2015 – 2016  
Development of an Integrated Simulator for Connected Vehicle Research. \$10,000
- **PI**, ETSU Research Foundation Seed Grant 2015 – 2016  
Establishment of Vehicular Networking Laboratory \$10,000
- **PI**, ETSU School of Graduate Studies 2016 – 2017  
Simulation and Validation of Data-Driven Driving Models for Large-Scale Urban Transportation Networks Using Big Data. \$800

**GRANTS  
PENDING**

- **PI**, NSF Cyber Physical Systems (CPS) 2019 – 2022  
Smart and Inclusive Infrastructure: A Value-Sensitive Intelligent IoT Infrastructure to Support Visually Impaired People on the Street. **Collaborated with University of Toronto and Georgia State University** \$1,110,257
- **Co-PI**, Social Sciences and Humanities Research Council of Canada  
CONNECTSMART 2.0: Multidisciplinary Partnership for Connected, Autonomous, Shared And Electric Mobility Planning. **Collaborated with University of Toronto and Dalhousie University**

**STANDARDS  
DEVELOPMENT**

**5G Automotive Association (5GAA)**

Member of the following 5GAA Working Groups for the development of Cellular V2X (C-V2X) communication standards:

- WG1: Use Cases and Technical Requirements
- WG2: System Architecture and Solution Development
- WG3: Evaluation, Testbeds, and Pilots

**RESEARCH  
PARTNERS**

**USA**

- Oak Ridge National Lab (National Transportation Research Center)
- Virginia Tech. Transportation Institute (VTTI)
- University of Tennessee, Knoxville
- University of Tennessee, Chattanooga
- Clemson University
- Wayne State University
- Tennessee Tech.
- University of Central Florida
- University of Alabama
- Georgia State University
- University of Oklahoma
- University of Houston
- Texas Southern University
- University of Virginia
- Fordham University

**Canada**

- University of Toronto
- Dalhousie University
- University of Calgary
- Lakehead University

**Europe**

- University of Loughborough, UK
- University of Alcalá, Spain
- University of Paderborn, Germany

**Australia**

- Monash University
- University of Sydney

- Queensland University of Technology
- Griffith University

#### Asia

- Tohoku University, Japan
- Changan University, China
- University of Calcutta, India
- Qatar Mobility Innovation Lab, Qatar
- King Abdul Aziz University, KSA
- Bangladesh University of Engineering and Technology, Bangladesh
- Southeast University, Bangladesh

#### Africa

- Alexandria University, Egypt

#### INDUSTRY PARTNERS

- Ford Motor Company (<https://www.ford.com/>)
- Peplink (<https://www.peplink.com/>)
- Lear Corporation (<http://www.lear.com/>)
- Traffic Technology Services (<https://www.traffictechservices.com/>)
- Precision Traffic and Safety Systems (<http://www.precisiontrafficsafety.com/>)
- Siemens Mobility Inc. (<https://www.siemens.com/global/en/home/products/mobility.html>)
- Trafficware (<https://www.trafficware.com/>)
- Cohda Wireless (<http://www.cohdawireless.com/>)

#### PROFESSIONAL Journal Editorial Board ACTIVITIES

- **Editor (February 2019 – Present)**, Vehicular Communications (**Impact Factor 3.53**)
- **Associate Editor (January 2013 – Present)**, IEEE Intelligent Transportation Systems Magazine (**Impact factor 3.29**)
- **Editor**, International Journal of Wireless and Mobile Networks (2012 – Present)
- **Guest Editor**, International Journal of Computational Science and Engineering
- **Associate Editor**, International Journal on Internet and Distributed Systems

#### Journal Reviewer

- IEEE Communications Magazine (**Impact factor 10.36**)
- IEEE Transactions on Wireless Communication (**Impact factor 6.4**)
- IEEE Transactions on Mobile Computing (**Impact factor 4.09**)
- IEEE Transactions on Intelligent Transportation Systems (**Impact factor 5.74**)
- IEEE Transactions on Parallel and Distributed Systems (**Impact factor 3.97**)
- IEEE Sensors (**Impact factor 2.62**)
- Mobile Networks and Applications (Springer) (**Impact factor 2.49**)
- Sensors (**Impact factor 2.475**)
- IET Wireless Sensor Networks (**Impact factor 1.97**)
- International Journal of Communication Systems (**Impact factor 1.717**)
- International Journal of Computing and Digital Systems

### Chair/Panelist/Organizer

- **Program Vice-Chair**, 2018 **IEEE** International Symposium on **Smart City** and Informatization (IEEE iSCI 2018).
- **Technical Track Chair**, Urban Computing and Big data, IEEE iSCI 2018.
- Invited Panelist, **NSF** Cyber Physical Systems (CPS) Program, 2016.
- Invited Participant, **NSF** CPS Aspiring PI Workshop, August 2017.
- Organizing Chair, Connected Vehicle Seminar, ETSU Innovation Lab, April 2016.
- Web Chair and Organizing Committee Member, International Conference on Smart Grid Assisted Internet of Things (SGIoT 2017), Ontario, Canada.
- Program Co-Chair, International Workshop on Converged Networks, Technologies and Applications, Held in conjunction with IEEE ICNC, January 2013, San Diego.
- Panelist, Annual Meeting and Exposition of ITS America 2012, Washington DC.
- Technical Session Chair, Ad Hoc Sensor Network Symposium, IEEE Global Communications Conference (GLOBECOM), December 2009, Honolulu, Hawaii.

### Invited Speaker

- Invited research talk on “Cooperative Freeway merging application using Connected Vehicles” at **University of Central Florida**, March 2018.
- Invited research talk on “Freeway merging application using Connected Vehicle Technology” at **Kennesaw State University**, March 2018.
- Invited speaker on “Reliability of Vehicular Communications in ITS application” at the *National Transportation Research Center* of **Oak Ridge National Lab**, September 2017.
- Invited research talk on “Freeway merging application using Connected Vehicles” at **Monash University, Australia**, August 2017.
- Invited research talk on “Cooperative Freeway merging application using Connected Vehicles” at **Clemson University**, July 2017.
- Invited seminar talk on “Big data analysis in Intelligent Transportation Systems” at the Institute of Computation and Research on Data Science (CaRDS), ETSU, April 2017.
- Invited research talk at NSF External Advisory Board Meeting, Texas Southern University, May 2013.
- Panel speaker, Special Technical Session, Annual Meeting of ITS America, Washington DC, May 2012.
- Research Colloquium Talk, Department of Computer Science, University of Houston, Jan 2013.
- Faculty Candidate Presentation, North Dakota State University, April 2013.
- Faculty Candidate Presentation, City University of New York, Dec 2012.
- Faculty Candidate Presentation, Middle Tennessee State University, Feb 2013.

### Conference Program Committee Member

- **A3S19**: IEEE International Workshop on Automobile Software Security and Safety
- **WISH 2019**: IEEE International Workshop on Integrated Smart Healthcare
- **MENACOMM 2019**: IEEE Middle East North Africa COMMunications Conference

- **VEHICULAR 2018:** International Conference on Advances in Vehicular Systems, Technologies and Applications
- **ICNC 2018:** IEEE International Conference on Computing, Networking and Communications
- **CICN 2018:** International Conference on Computational Intelligence and Communication Networks
- **NSysS 2018:** International Conference on Networking Systems and Security
- **DependSys 2017:** International Symposium on Dependability in Sensor, Cloud and Big Data Systems
- **ICACCI 2017:** International Conference on Advances in Computing, Communications and Informatics.
- **NSysS 2017:** International Conference on Networking Systems and Security
- **ICNC 2017:** IEEE International Conference on Computing, Networking and Communications
- **DependSys 2016:** International Symposium on Dependability in Sensor, Cloud and Big Data Systems
- **CCNC 2016:** IEEE Consumer Communications and Networking Conference
- **WD 2016:** IEEE Wireless Days Symposium
- **ICNC 2016:** IEEE International Conference on Computing, Networking and Communications
- **NSysS 2016:** International Conference on Networking Systems and Security
- **ICECE 2016:** IEEE International Conference on Electrical and Computer Engineering
- **DependSys 2015:** International Symposium on Dependability in Sensor, Cloud and Big Data Systems
- **STPSA 2015:** IEEE International Workshop on Security, Trust, and Privacy for Software Applications
- **ScalCom 2015:** IEEE International Conference on Scalable Computing and Communications
- **CCNC 2015:** IEEE Consumer Communications and Networking Conference
- **AWICT 2015:** International Conference on Advanced Wireless, Information and Communication Technologies
- **WD 2014:** IEEE Wireless Days Symposium
- **ICNC 2014:** IEEE International Conference on Computing, Networking and Communications
- **MoHCI 2014:** International Workshop on Mobile Computing and HCI
- **ICN 2013:** International Conference on Networks.
- **WD 2013:** IEEE Wireless Days Symposium
- **ICSNC 2012:** International Conference on Systems and Networks Communications
- **ISWTA2012:** IEEE Symposium on Wireless Telecommunications Applications.
- **WiMoN 2012:** International Conference on Wireless & Mobile Networks.
- **CSNT 2012:** International Conference on Communication Systems and Network Technologies
- **CICN 2012:** International Conference on Computational Intelligence and Communication Networks.
- **WICT 2012:** World Congress on Information and Communication Technologies.

- **SocProS 2012:** International Conference on Soft Computing for Problem Solving.
- **BIC-TA 2012:** International Conference on Bio-Inspired Computing: Theory and Applications.
- **ACM SE 2012:** ACM Annual Southeast Regional Conference.
- **WICT 2011:** World Congress on Information and Communication Technologies.
- **SocProS 2011:** International Conference on Soft Computing for Problem Solving.
- **CICN 2011:** International Conference on Computational Intelligence and Communication Networks.
- **CICN 2010:** International Conference on Computational Intelligence and Communication Networks.

### Conference Reviewer

- **IEEE GLOBECOM 2010:** Wireless Networking Symposium.
- **IEEE ICCCN2009:** Wireless Ad-hoc and Sensor Networks (WASN) Symposium.
- **IEEE ICC 2009:** Wireless Networking Symposium.
- **IEEE ISCIT 2011:** International Symposium on Communications & Information Technologies
- **ITS America Annual Meeting and Exposition 2013**
- **ITS World Congress 2013,** Tokyo, Japan.
- **SoftCOM 2012:** International Conference on Software, Telecommunications and Computer Networks
- **CSNT 2011:** International Conference on Communication Systems and Network Technologies.
- **CICN 2011:** International Conference on Computational Intelligence and Communication Networks.
- **WICT 2011:** World Congress on Information and Communication Technologies
- **SNA 2009:** International Conference on Sensor Network and Applications.

### UNIVERSITY SERVICES

- **Chair,** Steering Committee, IEEE ETSU Branch (September 2015 – )
- **Chair,** Thesis Committee, Md. Salman Ahmed, Dept. of Computing, ETSU (Aug 2015 – May 2017)
- **Co-Chair,** Thesis Committee, Nusrat Chowdhury, Dept. of Computing, ETSU (Aug 2017 – June 2019)
- **Member,** ETSU Research Development Committee. (2015–2018)
- **Member,** Faculty Search Committee for hiring four(4) tenure-track positions and one(1) lecturer position, Department of Computing, ETSU (2016 – 2017)
- **Member,** ETSU HPC Advisory Committee
- **Member,** Graduate Faculty, School of Graduate Studies, ETSU. (2013–)
- **Member,** Graduate Committee, Department of Computing, ETSU. (2013–)
- **Member,** Curriculum Committee, Department of Computing, ETSU. (2013–)
- **Member,** Scholarship and Awards Committee, Department of Computing, ETSU.
- **Member,** International Programs Committee, College of Business & Technology, ETSU
- **Member,** Honors Committee, College of Business & Technology, ETSU



- **Advisor**, ITS Tennessee Student Chapter at ETSU
- **Mentor**, IEEE Xtreme Programming Team, East Tennessee State University.
- **Undergraduate Advisor**, Department of Computing, East Tennessee State University.

## COURSES TAUGHT

### East Tennessee State University

A total of 144 credit hours of graduate and undergraduate courses taught as primary instructor. Below are the list of courses taught at ETSU:

- Advanced Networking Technologies (Graduate, includes lab)
- Computer Networks (Undergraduate, includes lab)
- Computer Architecture (Undergraduate)
- Computer Organization (Undergraduate)
- Database Fundamentals (Undergraduate, includes lab)
- Discrete Mathematics (Undergraduate)

### University of Tennessee, Knoxville

Taught a graduate course on *Internet of Things (IoT)* as primary instructor during summer 2017.

## PROFESSIONAL AFFILIATIONS

- **Chair**, IEEE Tri-Cities Section (October 2015 - Present)
- **Senior Member**, Institute of Electrical & Electronics Engineers (IEEE). (2015–)
- **Founding Director**, ITS Tennessee ETSU Chapter (2017–)
- **Consultant Member**, ITS America (2012-2013)
- **Member**, ITS America Connected Vehicle Task Force.
- **Member**, Institute of Electrical and Electronics Engineers, Inc. (IEEE). (2007–)
- **Treasurer**, IEEE Tri-Cities Section (October 2015 - April 2016)
- **Member**, Association of Computing Machinery (ACM)
- **Member**, IEEE Communications Society.
- **Member**, IEEE Vehicular Technology Society
- **Member**, IEEE Intelligent Transportation Systems Society
- **Member**, IEEE Technical Committee on Computer Communications.
- **Member**, IEEE Technical Committee on Sustainable Transportation.
- **Member**, IEEE Technical Committee on Intelligence and Security Information for Transportation Systems.
- **Member**, Traffic Incident Management Network, ITS America.
- **Member**, American Society of Civil Engineers (ASCE)
- **Member**, Institute of Engineers, Bangladesh (IEB)
- **Member**, Bangladesh Computer Society (BCS)
- **Lifetime Member**, Upsilon Pi Epsilon.

## MEDIA COVERAGE

Highlighted in several local media for funded research projects. Some of the URLs for media interview are given below:

- [http://www.etsu.edu/news/2015/08\\_aug/hoquerdgrant.aspx](http://www.etsu.edu/news/2015/08_aug/hoquerdgrant.aspx)
- <http://www.timesnews.net/Education/2019/04/05/Upper-East-Tennessee-Science-Fair-winners-announced.html>
- <http://www.heraldcourier.com/workittricities/people/driving-in-johnson-city-may-become-safer-thanks-to-etsu/article.c33f1198-4ccf-11e5-a3d3-8370095b378a.html>

## PUBLICATIONS Book Chapter

1. Ahmed Elbary, Hesham Rakha, Mustafa ElNainay, **Mohammad A Hoque**. “An Integrated Architecture for Simulation and Modeling of Small- and Medium-Sized Transportation and Communication Networks”, *Smart Cities, Green Technologies, and Intelligent Transport Systems*, (Springer) ISBN: 9783319277530.

## Peer-reviewed Journal Articles

1. **Mohammad A Hoque**, Md Salman Ahmed, Jackeline Rios-Torres, Asad Khat-tak, Ramin Arvin, “Impact of Vehicle-to-Vehicle Communication Reliability on Transportation Safety Applications: An Experimental Study”, *Journal of Intel-ligent Transportation Systems (Impact factor 2.568)*. (Accepted)
2. Purobi Rahman, Amit Karmaker, Mohammad Shah Alam, **Mohammad A Hoque**, and William L. Lambert. “CUMAC-CAM: a channel allocation aware MAC protocol for addressing triple hidden terminal problems in multi-channel UWSNs.” *SN (Springer Nature) Applied Sciences*. 1, no. 7 (2019): 805.
3. **Mohammad A Hoque**, Chad Davidson, “Design and Implementation of an IoT-Based Smart Home Security System”, *International Journal of Networked and Distributed Computing*, Vol. 7, no. 2, pp. 85-92, 2019.
4. **Mohammad A Hoque**, Xiaoyan Hong, Md Salman Ahmed. “Parallel Closed-loop Connected Vehicle Simulator for Large-scale Management of Transportation Networks: Challenges, Issues and Solution Approaches,” *IEEE Intelligent Trans- portation Systems Magazine*, Vol. 11, No. 4 (2019). (**Impact Factor: 3.23**) DOI: 10.1109/MITS.2018.2879163
5. Khaled, Abdullah A., Mingzhou Jin, David B. Clarke, and **Mohammad A. Hoque**. “Train design and routing optimization for evaluating criticality of freight railroad infrastructures,” *Transportation Research Part B: Methodological* 71 (2015): 71-84. (**Impact Factor: 4.57**)
6. **Mohammad A Hoque**, Xiaoyan Hong, Brandon Dixon. “Efficient multi-hop connectivity analysis in urban vehicular networks,” *Vehicular Communications* (Elsevier), Vol. 1, No 2, April 2014, Pages 78-90. (**Impact Factor 3.53**)
7. Xiaoyan Hong, Bo Gu, **Mohammad A Hoque**, Lei Tang. “Exploring Multi- ple Radios and Multiple Channels in Wireless Mesh Networks,” *IEEE Wireless Communications*, June 2010. (**Impact Factor 11**)
8. **Mohammad A Hoque**, Rezaul Raju, Christopher Tymczak, Daniel Vrinceanu, Kiran Chilakamari. “Parallel Sparse Matrix-Matrix Multiplication: A Scalable Solution with 1-D Algorithm,” *International Journal of Computational Science and Engineering*, December 2015, Vol. 11, No. 4. (Scopus 2017 CiteScore: 0.95)
9. Md Salman Ahmed, Jennifer Houser, **Mohammad A Hoque**, Rezaul Raju, Phil Pfeiffer. “Reducing Inter-process Communication Overhead in Parallel Sparse Matrix-Matrix Multiplication,” *International Journal of Grid and High Perfor- mance Computing*, Vol. 9, No. 3, 2017. (Scopus 2017 CiteScore: 0.99)
10. **Mohammad A Hoque**, Xiaoyan Hong, “Channel Assignment Algorithms for MRMC Wireless Networks,” *International Journal of Wireless & Mobile Net- works*, October 2011, Vol 3, No. 5.
11. Md Salman Ahmed, **Mohammad A Hoque**, Jackeline Rios-Torres, Asad Khat- tak, Brian Bennett. “A Decentralized Cooperative Freeway Merge Assistance System using Connected Vehicles”, *IEEE Internet of Things Journal (Impact factor 9.515)*. (Under review)
12. Anirudh Paranjothi, Mohammad S Khan, Ajinkya Pawar, **Mohammad A Hoque**, Nusrat Chowdhury. “A Survey on Congestion Detection and Congestion Control in Connected Vehicles,” *Journal of Network and Systems Management (Impact factor 1.588)*. (Under review)

## Peer-reviewed Conference Papers

1. **Mohammad A Hoque**, Mohammad S. Khan, “An experimental investigation of multi-hop V2V communication delays using WSMP”, IEEE Southeast Conference 2019.
2. **Mohammad A Hoque**, Mohsen Kamrani, Chad Davidson, Asad Khattak, “Real-Time Alerting of Hazardous Driving Behavior Using Internet of Things (IoT) and Connected Vehicles”, Annual meeting of the Transportation Research Board, 2019.
3. Chad Davidson, Tahsin Rezwana, and **Mohammad A Hoque**, “Smart Home Security Application Enabled by IoT: Using Arduino, Raspberry Pi, NodeJS, and MongoDB”, International Conference on Smart Grid and Internet of Things (SGIoT) 2018.
4. Noah Carter, Nusrat Chowdhury, **Mohammad A. Hoque**, Jacob Hoyos, Matthew Dale, Joseph Blevins and Nick Hodge, “Real-Time Signal Phase and Timing Information Dissemination Using Client-Server Application”, IEEE International Conference on Networking, Systems and Security (NSysS 2018). (Under review)
5. Noah Carter, **Mohammad A Hoque**, Md Salman Ahmed. “Simulating Vehicle Movement and Multi-Hop Connectivity from Basic Safety Messages”, IEEE Southeast Conference 2018.
6. **Mohammad A Hoque**, Md Salman Ahmed, Jackeline Rios-Torres, Asad Khattak, Ramin Arvin, “Impact of Vehicle-to-Vehicle Communication Reliability on Safety Applications: An Experimental Study”, *Annual Meeting of the Transportation Research Board, 2018*.
7. Md Salman Ahmed, **Mohammad A Hoque**, Jackeline Rios-Torres, Asad Khattak, “A Cooperative Freeway Merge Assistance System using Connected Vehicles”, *Annual Meeting of the Transportation Research Board, 2018*.
8. Md Salman Ahmed, **Mohammad A Hoque**, Asad Khattak, “Intersection Approach Advisory Through V2X Technology Using Signal Phase and Timing (SPaT) Information at Fixed-Time Signalized Intersection”, *Annual Meeting of the Transportation Research Board, 2018*.
9. Jenifar Rahman, Mohammad Shah Alam, Shamim Ara Shawkat, **Mohammad A Hoque**. “A Bidirectional Multi-flow MAC Protocol for Multi-hop Underwater Acoustic Sensor Networks,” The 12th *ACM International Conference on Underwater Networks and Systems, (ACM WUWNeT 2017)*, Halifax, Canada.
10. Purobi Rahman, Mohammad Shah Alam, Shamim Ara Shawkat, **Mohammad A Hoque**. “CUMAC-CAM: Addressing Triple Hidden Terminal Problems for Multi-channel Transmission in Underwater Sensor Networks,” The 12th *ACM International Conference on Underwater Networks and Systems, (ACM WUWNeT 2017)*, Halifax, Canada.
11. **Mohammad A Hoque**, Phil Pfeiffer, Sanford Gabrielle, Edward Hall, and Elizabeth Turbyfill, “SAFARI-Taxi: Secure, Autonomic, FAult-Resilient, and Intelligent Taxi Hailing System”, 15th IEEE International Conference on Dependable, Autonomic and Secure Computing, **IEEE DASC 2017**.
12. Dwayne Jordan, Nicholas Kyte, Scott Murray, **Mohammad A Hoque**, Md Salman Ahmed, and Asad Khattak. “Poster: Investigating Doppler Effects on Vehicle-to-Vehicle Communication: An Experimental Study,” *ACM International Workshop on Connected and Automated Vehicle Mobility*, held in conjunction with **ACM MobiCom 2017**.
13. Md Salman Ahmed, **Mohammad A Hoque**, Jackeline Rios-Torres, Asad Khattak. “Demo: Freeway Merge Assistance System using DSRC,” *ACM International Workshop on Connected and Automated Vehicle Mobility*, held in conjunction with **ACM MobiCom 2017**.

14. Badrun Nahar, Mohammad Shah Alam, Shamim Ara Shawkat, **Mohammad A Hoque**. "Priority Aware Interference Mitigation Techniques for Coexistence of Wireless Technologies in Smart Utility Networks," *9th ACM International Symposium on QoS and Security for Wireless and Mobile Networks (ACM Q2SWiNet 2017)*, Miami, Florida.
15. Md Khurram Monir Rabby, Mohammad Shah Alam, Shamim Ara Shawkat, **Mohammad A Hoque**. "A Scheduling Scheme for Efficient Wireless Charging of Sensor Nodes in WBAN," *IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies, (IEEE CHASE 2017)*.
16. **Mohammad A Hoque**, Phil Pfeiffer, Md Salman Ahmed, Ayo Fabunmi, Sanford Gabrielle, Edward Hall, Jason Jones, Nicholas Kyte, Chris Maness, Nicolas McMahon, Matt Moore, Elizabeth Turbyfill. "Intelligent Taxi Hailing System for Smart Cities with Connected Vehicles," *ITS World Congress 2017*.
17. Noah Carter, **Mohammad A Hoque**, Phil Pfeiffer. "Identifying factors which impair the lane-keeping efficiency of drivers," *ITS World Congress 2017*.
18. **Mohammad A Hoque**, Md Salman Ahmed. "Freeway Merge Assistance System using DSRC," *ITS Tennessee Annual Conference 2017*.
19. Wyatt Powell, Logan Markham, **Mohammad A Hoque**. "Studying Mobility Patterns of Connected Vehicles Using Big Data Analytics," *ETSU Boland Undergraduate Research Symposium 2017*.
20. Noah Carter, **Mohammad A Hoque**. "Understanding drivers lane keeping ability under various roadway conditions using connected vehicle technology," *ETSU Boland Undergraduate Research Symposium 2017*.
21. Md Salman Ahmed, **Mohammad A Hoque**. "Partitioning of Urban Transportation Networks Utilizing Real-world Traffic Parameters for Distributed Simulation in SUMO," *IEEE Vehicular Network Conference, IEEE VNC 2016*.
22. Md Salman Ahmed, **Mohammad A Hoque**. "Demo: Real-time Vehicle Movement Tracking on Android Devices Through Bluetooth Communication with DSRC Devices," *IEEE Vehicular Network Conference, IEEE VNC 2016*.
23. Md Salman Ahmed, **Mohammad A Hoque**, Phil Pfeiffer. Comparative Study of Connected Vehicle Simulator, *IEEE Southeast Conference 2016*.
24. Md Salman Ahmed, **Mohammad A Hoque**, "Partitioning of Urban Transportation Networks Using Evolutionary Algorithm for Distributed Simulation in SUMO", *ACM Mid-Southeast Conference 2016*.
25. Md Salman Ahmed, Jennifer Houser, **Mohammad A Hoque**, Phil Pfeiffer, "Reducing Inter-Process Communication Overhead in Parallel Sparse Matrix-Matrix Multiplication," *ACM Mid-Southeast Conference 2016*. (**Best paper award, Masters Category, third prize**)
26. Ahmed Elbary, Hesham Rakha, Mustafa ElNainay, **Mohammad A Hoque**. "VNetIntSim: An Integrated Simulation Platform to Model Transportation and Communication Networks," *International Conference on Vehicle Technology and Intelligent Transport Systems, VEHITS 2015*.
27. **Mohammad A Hoque**, Xiaoyan Hong, Brandon Dixon. "Taxi Hailing System using Connected Vehicle Technology", *ITS World Congress, 2014*.
28. Rezaul Raju, **Mohammad A Hoque**, Christopher Tymczak. "Scalable Hybrid Implementation for Parallel Sparse Matrix-Matrix Multiplication with Reduced Communication Overhead," *Emerging Researchers National Conference in STEM, ERN 2014*.
29. Abdullah Khaled, Mingzhao Jin, David Clarke, **Mohammad A Hoque**, "Determination of Criticality of Freight Railroad Infrastructures Based on Freight Flow Optimization", *In Proceedings of Annual Meeting of Transportation Research Board, TRB 2013*.

30. **Mohammad A Hoque**, Xiaoyan Hong, Brandon Dixon. "Analysis of Mobility Patterns for Urban Taxi Cabs", *IEEE International Conference on Computing, Networking and Communications*, **IEEE ICNC 2012**.
31. **Mohammad A Hoque**, Xiaoyan Hong, "BioStaR: A Bio-inspired Stable Routing for Cognitive Radio Networks," *IEEE International Conference on Computing, Networking and Communications*, **IEEE ICNC 2012**.
32. Md. Ashfakul Islam, Susan Vrbsky, **Mohammad A Hoque**. "Performance Analysis of a Tree-Based Consistency Approach for Cloud Databases," *IEEE Int. Conf. on Computing, Networking and Communications*, **IEEE ICNC 2012**.
33. **Mohammad A Hoque**, Xiaoyan Hong, Brandon Dixon. "Innovative Taxi Hailing System Using DSRC Infrastructure," *22nd Annual ITS America Conference and Exposition, 2012*.
34. **Mohammad A Hoque**, "Using V2V Communication for Emergency Roadside Assistance in Remote Areas," *22nd Annual ITS America Conference and Exposition, 2012*.
35. **Mohammad A Hoque**, Xiaoyan Hong. "A Graphical Simulator for Cognitive Radio Networks," *ACM Mid-Southeast Conference 2011*. (**Best paper award, Doctoral Category, third prize**)
36. Mohammad A Hoque, Xiaoyan Hong. "Application for Emergency Travel Support and Roadside Assistance using V2V Communication," *ACM Mid-Southeast Conference 2011*.
37. Mohammad A Hoque, Md. Ashfakul Islam, Kazi Zunnurhain, Xiaoyan Hong. "Delay Analysis of Wireless Ad Hoc Networks: Single vs. Multiple Radio," *IEEE International Conference on Local Computer Networks*, **IEEE LCN 2010**.
38. Mohammad A Hoque, Xiaoyan Hong, Farhana Afroz. "Multiple Radio Channel Assignment Utilizing Partially Overlapped Channels," *IEEE Global Telecommunications Conference*, **IEEE GLOBECOM 2009**.
39. Mohammad A Hoque, Xiaoyan Hong. "Interference Minimizing Channel Assignment Using Partially Overlapped Channels in Multi-radio Multi-channel Wireless Mesh Networks," *IEEE Southeast Conference 2009*.
40. Mohammad A Hoque, Farhana Afroz. "Call Admission Control: QoS Issue for VoIP," *Communication Systems Software and Middleware and Workshops*, **IEEE COMSWARE 2008**.
41. Mohammad A Hoque, S.M. Iftexharul Amin, Md. Shohrab Hossain. "Hierarchical Model of Guaranteed, Reliable and Secured Broadcast protocol," *International Conference on Advances in Information Technology*, **IAIT-2007**.
42. Mohammad A Hoque, S.M. Iftexharul Amin, Md. Shohrab Hossain. "Modified Algorithms for Multilevel GRSB protocol," *IEEE International Conference on Local Computer Networks*, **IEEE LCN-2007**.

## STUDENTS MENTORED

- **University of Houston**
  - Md. Rezaul Raju (June 2015 –), PhD student, Department of Computer Science. (**Dissertation Committee Member**)
- **Virginia Tech.**
  - Ahmed Elbary (June 2014 – May 2015), PhD Student, Department of Computer Science.
- **University of Tennessee, Knoxville**
  - Clayton Davis (Summer 2017), Graduate student, Department of EECS.
  - Chad Davidson (Summer 2017), Undergrad senior, Department of EECS.

- **University of Alabama**

- David Grubic (NSF REU Project, Summer 2010), Department of Computer Science.

- **East Tennessee State University**

- Md. Salman Ahmed (Fall 2015 – May 2017), MS student, Thesis advisor. *Received Outstanding Computing Graduate Student Award (2017), Outstanding Thesis Award from ETSU Graduate School (2018), Outstanding Thesis Award in the State of Tennessee (2018).*
- Noah Carter (Fall 2016 – May 2018), Honor's thesis advisor. *Received Outstanding Overall Undergraduate Student Award (2018)*
- Nusrat Chowdhury (Fall 2017 – Present), MS student, Thesis co-advisor.
- Tahsin Rezwana (Fall 2017 – May 2019), MS student, Capstone Project.
- Omigie Osayamen (Fall 2017 – May 2019), MS student, Capstone Project.
- James Tarlton (Fall 2017 – May 2019), MS student, Capstone Project.
- Elizabeth Turbyfill (Spring 2017 – Spring 2018), MS student, Capstone Project.
- Allison Ivy (Fall 2016 – Spring 2018), MS student, Capstone Project.
- Edward Hall (Fall 2016 – Spring 2018), MS student, Capstone Project.
- Gabriel Sanford (Fall 2016 – Spring 2018), MS student, Capstone Project.
- Jennifer Houser (Fall 2015), Conducted undergraduate project.

- **Bangladesh University of Engineering & Technology**

- Purobi Rahman, MSc. Engg. in ICT, External Advisor.
- Md Khurram Monir Rabbi, MSc. Engg. in ICT, External Advisor.
- Jenifer Rahman, MSc. Engg. in ICT, External Advisor.
- Badrun Nahar, MSc. Engg. in ICT, External Advisor.

## **PROFESSIONAL TRAININGS**

- Attended **NSF** CPS Aspiring PI workshop in Washington, DC as an invited participant. Received training on successful grant proposal writing. (Only 50 selected faculty members from all over U.S. were individually invited)
- Attended **IEEE Leadership** training at—
  - IEEE Region 3 Leadership training workshop, Sep. 2015, Greensboro, NC.
  - IEEE USA MGA training workshop, Nov. 2015, Newark, NJ.
  - IEEE SoutheastCon, April 2016, Norfolk, VA.
  - IEEE SoutheastCon, April 2017, Charlotte, NC.
  - IEEE Section World Congress, August 2017, **Sydney, Australia.**
- Received professional certification from Oracle Workforce Development Program for completing Oracle Database Administration Training.
- Attended Wireless Summer School at University of Illinois at Urbana-Champaign.
- Completed online training for Protecting Human Research Participants from National Institutes of Health (NIH) Office of Extramural Research.
- Received 3 week long hands on training on GSM System Engineering. (2007)