

## Md Salman Ahmed

Graduate Teaching Assistant, Department of Computer Science, Virginia Tech, Blacksburg, Virginia

Contact Information	<p>Email: <a href="mailto:ahmedms@vt.edu">ahmedms@vt.edu</a>  Phone: (423) 741-6519  Web: <a href="https://sites.google.com/site/ahmedm07bd">https://sites.google.com/site/ahmedm07bd</a></p>
Research Interests	Machine learning, Big data, System tools development (middleware between the OS and application layer), Communication protocol development for wireless networks, Cluster computing, High-performance computing, and Connected vehicle technology.
Education	<p><b>Virginia Tech</b>, Blacksburg, Virginia  PhD in Computer Science &amp; Application, Fall 2017 to Present</p> <p><b>East Tennessee State University</b>, Johnson City, Tennessee  MS in Applied Computer Science, Graduation: May 06, 2017</p> <ul style="list-style-type: none"> <li>Outstanding Computing Graduate Student in the Department of Computing.</li> </ul> <p><b>Bangladesh University of Engineering and Technology</b>, Dhaka, Bangladesh  B.Sc. Computer Science and Engineering, February 2013</p> <ul style="list-style-type: none"> <li>Dean's list for outstanding result in 4<sup>th</sup> year</li> <li>GPA: 3.51/4.00</li> </ul>
Work Experience	<p><b>Virginia Tech</b>, Blacksburg, Virginia, USA  Graduate Teaching Assistant August 16, 2017 to Present</p> <p><b>Center for Transportation Research</b>, The University of Tennessee, Knoxville  Researcher May 15, 2017 to August 9, 2017</p> <p><b>East Tennessee State University</b>, Johnson City, Tennessee, USA  Graduate Teaching Assistant August 22, 2016 to May 5, 2017  Graduate Research Assistant August 24, 2015 to May 6, 2016</p> <p><b>BancIntranets</b>, Johnson City, Tennessee, USA  Software Developer Intern May 16, 2016 to August 19, 2016</p> <p><b>Samsung R&amp;D Institute</b>, Dhaka, Bangladesh  Senior Software Engineer/Software Engineer March 13, 2013 to August 8, 2015</p>
Awards and Honors	<ul style="list-style-type: none"> <li>Dean's list for outstanding result in the 4<sup>th</sup> year at Bangladesh University of Eng. &amp; Tech.</li> <li>Samsung R&amp;D Icon of the Month award for March 2015. <a href="#">Link</a>.</li> <li>My team (Combucs) positioned <b>1<sup>st</sup> in Tennessee</b> and <b>18<sup>th</sup> in the USA</b> among over <b>2100+</b> worldwide teams in <b>IEEEExtreme programming contest 10.0</b> held on Oct 22-23, 2016. <a href="#">Link</a>.</li> <li>My team (Combucs) positioned <b>1<sup>st</sup> in Tennessee</b> and <b>51<sup>st</sup> in the USA</b> over <b>2300+</b> teams in <b>IEEEExtreme programming contest 9.0</b> held on Oct 23-24, 2015.</li> <li>Won 3rd place in the graduate student presentation competition of the ACM-Mid Southeast Conference, Gatlinburg, TN, November 11, 2016. <a href="#">Link</a>.</li> <li>Received Outstanding Computing Graduate Student award from the Department of Computing.</li> </ul>
Research Grant	<p><b>Co-PI</b>, ETSU Graduate school research grant (July 2016 – June 2017)  Simulation and Validation of Data-driven Driving Models for Large-scale Urban Transportation Networks using Big-data Analysis of on-road Driving Behavior. (\$800)</p>

Research Projects	<p><b>Project 1:</b> Development of communication protocols for DSRC devices Peer to peer and multi-hop communication protocol development for Dedicated Short Range Communications (DSRC) devices.</p> <p><b>Project 2:</b> Design and development of parallel CV simulator Understanding problems, limitations, and solution techniques for network partitioning in large-scale transportation networks. Utilizing big data analysis using real world CV datasets from USDOT. Investigation of inter-process communication overhead in parallel sparse matrix multiplication.</p>
Publications	<ol style="list-style-type: none"> <li>1. <b>Ahmed, M. S.</b>, Hoque, M. A., &amp; Pfeiffer, P. (2016, March). Comparative study of connected vehicle simulators. In SoutheastCon, 2016 (pp. 1-7). IEEE.</li> <li>2. <b>Ahmed, M. S.</b> &amp; Hoque, M. A. (2016, December). Partitioning of Urban Transportation Networks Utilizing Real-World Traffic Parameters for Distributed Simulation in SUMO. In IEEE Vehicular Network Conference, 2016. IEEE (Accepted).</li> <li>3. <b>Ahmed, M. S.</b> &amp; Hoque, M. A. (2016, December). Demo: Real-time Vehicle Movement Tracking on Android Devices Through Bluetooth Communication with DSRC Devices. In IEEE Vehicular Network Conference, 2016. IEEE (Accepted).</li> <li>4. <b>Ahmed, M. S.</b>, &amp; Hoque, M. A. (2016, November). Partitioning of Urban Transportation Networks Using Evolutionary Algorithm for Distributed Simulation in SUMO. In ACM Mid-Southeast Conference, 2016. ACM (Accepted as abstract for presentation).</li> <li>5. <b>Ahmed, M. S.</b>, Houser, J. Hoque, M. A., &amp; Pfeiffer, P. (2017, April). Reducing Inter-Process Communication Overhead in Parallel Sparse Matrix-Matrix Multiplication. In International Journal of Grid and High Performance Computing (IJGHPC) (under press).</li> <li>6. Hoque, M.A, Hong, X &amp; <b>Ahmed, M.S.</b> (2017, April). Parallel Closed-Loop Connected Vehicle Simulator for Large-Scale Transportation Network Management: Challenges, Issues, and Solution Approaches. In IEEE Transactions on Intelligent Transportation Systems (under review)</li> <li>7. <b>Ahmed, Md Salman</b>, "An Investigation into the Performance Evaluation of Connected Vehicle Applications: From Real-World Experiment to Parallel Simulation Paradigm" (2017). Electronic Theses and Dissertations. Paper 3214. <a href="http://dc.etsu.edu/etd/3214">http://dc.etsu.edu/etd/3214</a>.</li> <li>8. <b>Md Salman Ahmed</b>, Mohammad A Hoque, Jackeline Rios-Torres, and Asad Khattak. 2017. Demo: Freeway Merge Assistance System using DSRC. In Proceedings of CarSys'17, Snowbird, UT, USA, October 20, 2017, 2 pages. <a href="https://doi.org/10.1145/3131944.3131957">https://doi.org/10.1145/3131944.3131957</a> (In Press).</li> <li>9. Dwayne Jordan, Nicholas Kyte, Scott Murray, Mohammad A Hoque, <b>Md Salman Ahmed</b>, and Asad Khattak. 2017. Poster: Investigating Doppler Effects on Vehicle-to-Vehicle Communication: An Experimental Study. In Proceedings of CarSys'17, Snowbird, UT, USA, October 20, 2017, 2 pages. DOI: 10.1145/3131944.3131959 (In Press).</li> <li>10. Dwayne Jordan, Nicholas Kyte, Scott Murray, Mohammad A Hoque, <b>Md Salman Ahmed</b>, and Asad Khattak. 2017. Poster: Investigating Doppler Effects on Vehicle-to-Vehicle Communication: An Experimental Study. In Proceedings of CarSys'17, Snowbird, UT, USA, October 20, 2017, 2 pages. DOI: 10.1145/3131944.3131959 (In Press).</li> </ol>
Professional Projects	<p><b>Samsung Z3 &amp; S2</b> Developed the system (hardware and sensor testing) tools for Samsung Z3 smartphones and Samsung S2 smartwatches for Tizen platform.</p>

	<p><b>ChatON &amp; Touch Wiz Phone Dialer</b> Maintained and fixed bugs of the ChatON messenger and Samsung Touch Wiz phone dialer (Android) application for the middle-east market.</p> <p><b>Smartphone Power Consumption Survey</b> Investigated Samsung smartphones' power consumption issues during CPU active state (<math>C_0</math>) using the power-debug, idlestat, powertop, &amp; pm-qa tools, and the Samsung Arndale development board.</p>
Academic Projects	<p><b>Network Pool</b> A simple pool game with multi-player support was developed using Java. <a href="#">GitHub link</a>.</p> <p><b>Social Networking Site</b> A website with all the basic functionalities of a social networking site. Front-end was developed using ASP.NET and back-end was an oracle database.</p> <p><b>Blinds' Eye</b> A navigation tool for blind people. Developed using an ultrasonic sensor, a micro SD card, and a microcontroller. The language used for interfacing is C. A FAT32 filesystem (collected from the Internet) was used for storing files in MicroSD card.</p> <p><b>3D Modeling</b> A C++/OpenGL based 3D modeling (day-night lighting, shading, curves, texture mapping and walking camera) of Burj Al Arab building in United Arab Emirates was developed.</p> <p><b>4-Bit Computer</b> Design and simulation of a 4-bit Computer capable of executing 28 instructions including add, multiply, push, pop, jump, call, halt, move, etc.</p> <p><b>Compiler</b> A compiler capable of generating assembly x86 code from Pascal program was developed using GNU C++, Lex and YACC.</p> <p><b>Screen Saver</b> A screen saver capable of saving and restoring screen contents and cursor position was developed using x86 assembly language.</p> <p><b>Card Game</b> A traditional card game like the Spade was developed using custom APIs of OpenGL. A very basic intelligence was given to the computer players.</p> <p>For more details, please visit <a href="https://sites.google.com/site/ahmedm07bd/projects">https://sites.google.com/site/ahmedm07bd/projects</a>.</p>
Professional Affiliation and Services	<ul style="list-style-type: none"> <li>• Reviewer, IEEE ITS Magazine</li> <li>• Graduate Student Member, IEEE</li> <li>• Co-Chair, IEEE @ ETSU Student Branch.</li> <li>• Problem-solving: Resolved many key problems in UVa Online Judge and <a href="#">Light OJ</a>. <a href="#">Profile link</a>.</li> <li>• Tutored ETSU undergraduate students in their discrete mathematic course (CSCI 1900).</li> <li>• Mentored ETSU undergraduate honors student for fundamental networking course (CSCI 3400).</li> </ul>
Language and Technologies	<ul style="list-style-type: none"> <li>• C, C++, Java, Python, SQL, HTML, CSS, JavaScript, PHP, Git, and Latex.</li> <li>• Visual Studio, Eclipse, Vim, Linux Commands, and Linux (Ubuntu).</li> <li>• Training on UNIX system programming and network programming.</li> <li>• Parallel programming environment (MPI).</li> </ul>

Test Scores	<b>GRE</b> <ul style="list-style-type: none"> <li>• Verbal Reasoning: 151 (51<sup>st</sup> percentile)</li> <li>• Quantitative Reasoning: 162 (82<sup>nd</sup> percentile)</li> <li>• Analytical Writing: 3.5 (42<sup>nd</sup> percentile)</li> </ul>		
Major Courses	<div> <b>Undergraduate Courses</b> <ul style="list-style-type: none"> <li>• Structured Programming Language (C)</li> <li>• Data Structures</li> <li>• Object Oriented Programming Language</li> <li>• Algorithms, Database</li> <li>• Computer Architecture</li> <li>• Software Engineering</li> </ul> </div> <div> <ul style="list-style-type: none"> <li>• Operating System</li> <li>• Computer Networks</li> <li>• Artificial Intelligence</li> <li>• Machine Learning</li> <li>• Compiler</li> </ul> </div> <div> <b>Graduate Courses</b> <ul style="list-style-type: none"> <li>• Research Method</li> <li>• Analysis of Algorithms</li> <li>• Artificial Intelligence</li> <li>• Distributed Systems</li> <li>• System Design.</li> </ul> </div>		
References	Dr. Mohammad Hoque Assistant Professor Department of Computing Email: <a href="mailto:hoquem@etsu.edu">hoquem@etsu.edu</a>	Dr. Phil Pfeiffer Professor Department of Computing Email: <a href="mailto:phil@etsu.edu">phil@etsu.edu</a>	Dr. Brian Bennett Assistant Professor Department of Computing Email: <a href="mailto:bennetbt@etsu.edu">bennetbt@etsu.edu</a>