**Sheikh K. Ghafoor**

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**INTRODUCTION**

This vita summarizes the teaching and research experiences of Dr. Sheikh Ghafoor. His philosophy is to find a harmony between teaching and research and this is highlighted in his history of teaching and research. He is interested in and working on three areas of research: 1) Programming models, tools, and libraries for Heterogeneous High Performance Computing, 2) Malware detection, analysis, and prevention, and 3) Computer Science Education. Dr. Ghafoor has multiple active, externally funded research projects in each area. He has been the principal investigator on grants from the National Science Foundation, NASA, Department of Energy, and other agencies and currently mentors several graduate and undergraduate students working on these research projects. Dr. Ghafoor’s main teaching interest is in parallel distributed computing, and computer networks related courses. As a professor, he has taught a wide variety of courses at TTU and at his previous institution. In addition, Dr. Ghafoor has developed and taught three new courses at TTU in the fields of parallel and autonomic computing.

**EDUCATION**

* Doctor of Philosophy (2007) in Computer Science with emphasis in High Performance Computing. Mississippi State University. Dissertation “Modelling of an Adaptive Parallel System with Malleable Applications in Distributed Computing Environment”. Advisors: Ioana Banicescu, Tomasz Haupt.
* Master of Science (2003) in Computer Science with emphasis in High Performance Computing. Mississippi State University. Thesis “Integrating Algorithmic and Systemic Load Balancing Strategies in Parallel Scientific Applications”. Advisor: Ioana Banicescu
* Master of Science (1987) in Applied Physics and Electronics, University of Dhaka, Bangladesh. Thesis “Design and Development of MC6800 Based Universal EPROM Programmer. Advisor: Anwarur Rahman Khan.
* Bachelor of Science (1983) in Applied Physics and Electronics, University of Dhaka, Bangladesh.

**ACADEMIC EXPRIENCE**

* August 2012- Present. Associate Professor, Department of Computer Science, Tennessee Tech. University.
* August 2008 - July 2012. Assistant Professor, Department of Computer Science, Tennessee Tech. University.
* August 2006 – July 2008, Instructor, Department of Computer Science, Tennessee Tech. University.
* May 1999 – July 2006, Research Associate, Center for Advanced Vehicular Systems, Mississippi State University.
* January 1997 – April 1999, Graduate Research Assistant, Engineering Research Center, Mississippi State University.
* December 1992 – December 2006, Assistant Professor, Department of Computer Science, University of Dhaka, Bangladesh.
* August 1988 – November 1992, Lecturer, Department of Applied Physics and Electronics, University of Dhaka.

**RESEARCH INTEREST**

Programming models, libraries, and tools for Heterogeneous HPC; Malware, Vehicular Security; High Performance Computing, Computer Science Education.

**TEACHING INTEREST**

Parallel Programming, Parallel and Distributed Algorithms, Computer Networks, Autonomic Computing.

**PUBLICATIONS**

***Peer Reviewed Publications***

1. Ryan Marshall, Sheikh K. Ghafoor, “A Framework for Cellular Automata in Hybrid HPC Environments” Under Preparation, to be submitted to Journal of Parallel and Distributed Computing in November 2017.
2. Dustin Gardner, Sheikh Ghafoor, and Ambareen Siraj, “An Autonomic Self-Protection Framework for Android Malware” under preparation-Final Revision Stage.
3. Sheikh K. Ghafoor, Md M. Hossain, Ryan J. Marshall, M. Amanzholov, Ramakrishnan Kannan, Seung-Hwan Lim, and Sreenivas R. Sukumar, “Benchmarking SYRK in Shared Memory Environments” to be submitted to International Parallel Processing Symposium (IPDPS 2018).
4. Mohammad Arman Ullah, Sheikh Ghafoor, Mike Rogers, Caleb Currie, Stacy Prowell, “A Comprehensive Survey of Security Issues and Challenges in CAN Based In-Vehicle Network”. Submitted to ACM Computing Survey.
5. Ryan Marshall, Sheikh K. Ghafoor, Alfred J. Kalyanapu, Mike Rogers, and Tigstu T. Dullo, “Performance Improvement of a Two-dimensional Flood Simulation Application in Hybrid Computing Environments” in the Proceedings of the Fifth International Symposium on Computing and Networking (CANDAR 17), to be held in Aomori, Japan, November 19-22, 2017.
6. Sheikh Ghafoor, David W. Brown, and Mike Rogers “Integrating Parallel Computing in Introductory Programming Classes: An Experience and Lesson Learned”, in the Proceedings of the Euro-EDUPAR 2017 workshop of 23rd International European Conference on Parallel and Distributed Computing, Santiago de Compostela, Spain, August 28-September 1, 2017.
7. Islam, Sheikh Rabiul, William Eberle, and Sheikh Khaled Ghafoor. "Mining Bad Credit Card Accounts from OLAP and OLTP." In *Proceedings of the International Conference on Compute and Data Analysis*, pp. 129-137. ACM, 2017.
8. Parker, J. M., Canfield, S. L., Ghafoor, S. K., and K. M Lum, “Using Hardware-Based Programming Experiences to Enhance Student Learning in a Junior-Level Systems Modeling Course,” ASEE *Computers in Education Journal,* Volume XXV, No 4, 2015.
9. Ambareen Siraj, Blair Taylor, Siddarth Kaza, Sheikh Ghafoor, **“**Integrating security in the computer science curriculum”, ACM Inroads, Volume 6, No 2, pp 77-81, June 2015.
10. Sheikh Ghafoor, John Hale, Ioana Banicescu, and Tomasz Haupt, “Simulation of an Adaptive Parallel System in High Performance Computing Environment”, Under Review, Cluster Computing, Springer.
11. Ambareen Siraj, Sheikh Ghafoor, Joshua Tower, and Ada Haynes, ”*Empowering Faculty to Embed Security Topics into Computer Science Courses*”, in the proceedings of [19th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education, Uppsala, Sweden, June 23-25, 2014](http://iticse2014.it.uu.se/) .
12. L. Canfield, Sheikh Ghafoor, “A Matlab-Based Toolkit to program Microcontrollers for use in Teaching Mechanisms and Robotics”, in the proceedings of **International Design and Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE 2014) ,** August 17-20, Buffalo, NY, 2014
13. Johne Parker, Stephen Canfield, and Sheikh Ghafoor, “Using Hardware-based Programming Experiences to Enhance Student Learning in a Junior-Level Systems Modeling Course” in the proceedings of 121st ASEE Annual Conference and Exposition, Indianapolis, June 15-18, 2014 (ASEE Best Paper Award).
14. Alfred Kalyanapu, Sheikh Ghafoor, Ryan Marshall, Tigstu Dullo, and David Judi, “Benchmark exercise for comparing computational performance of two-dimensional flood models in CPU, Multi-CPU and GPU frameworks”, in the proceedings of World Environmental and Water Resources Congress, June 1-5, Portland Oregon, USA, 2014.
15. Mike Rogers, Sheikh Ghafoor, Brett Harper, “Towards Document Composition Framework”, in Proceedings ofThe 2012 International Conference on Internet Computing(ICOMP12) as part of *The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'12),* July 16-19, Las Vegas, Nevada, 2012.
16. Stephen Canfield, Sheikh Ghafoor, and Mohamed Abdelrahman, “Enhancing the Programming Experience for First-Year Engineering Students through Hands-On Integrated Computer Experiences”, Journal of STEM Education: Innovations and Research. Volume 13, Issue 4, July-September, 2012.
17. Mike Rogers, Sheikh K. Ghafoor, Rob E. Dye, “PAWS: A Toolkit for Analyzing Service Oriented Computing Workflows Using Proxies”, in Proceedings of Parallel and Distributed Computing Symposium, December 14-16, Dallas, USA, 2011.
18. Ferrol Aderholdt, Sheikh Ghafoor, Ambareen Siraj, Stephen Scott, “Integrity Based Intrusion Detection System for Enterprise and Cloud Environments” in Proceedings of 4th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2011), December 5-7, Melbourne, Australia, 2011.
19. Sheikh Ghafoor, Stephen Canfield, Michael Kelley, Tristan Hill, “Assessment of Student Attitudes and its Impact in a Hands-On Programming Model for the Introductory Programming Course”, American Society for Engineering Education Middle Atlantic Section Fall Conference, October 28-29, Philadelphia, USA, 2011.
20. Stephen Canfield, Sheikh Ghafoor, Mohammed Abdelrahman, Johne’ Parker, “Enhancing the Programming Experience for Engineering Students through Hands-on Integrated Computer Experiences,” poster presented at the *2011 CCLI-TUES Conference*, January 26-28, Washington, DC, 2011.
21. Sheikh K. Ghafoor, Tomasz A. Haupt, Mahbubur Rashid, “Performance Improvement Using Malleable Applications in Cluster Environment, in *Proceedings of the 2009 International Conference on High Performance Computing, Networking and Communications System (HPCNCS-09),* July 13-16, Orlando, Florida 2009.
22. Mike Rogers, Sheikh Ghafoor, Jeff Graves, “Braid: Distributed Patient Information for Health Care Providers”, in *Proceedings of The 2009 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'09),* July 13-16, Las Vegas, Nevada, 2009.

***Peer-Reviewed Short Paper/Poster***

1. Sheikh K. Ghafoor and Mike D. Rogers, “Integrating Parallel Distributed Computing Topics Throughout Undergraduate CS Curriculum: A Work in Progress” in the proceedings of EduPar 15 workshop in IPDPS 2015 conference, Hyderabad, India, 2015.
2. Sheikh K. Ghafoor, Ryan Marshall, and Faisal Hossain, “LiquidEarth - River: A Satellite Based Operational Flood Forecasting System for Bangladesh, ACM SIGCAS Computers & Society Vol. 45, No. 2 pp 42, June 2015.

***Peer-Reviewed Conference Abstracts***

1. Dullo, T., Gangrade, S., Marshall, R., Islam, S. R., Ghafoor, S., Kao, S-., C., and Kalyanapu, A. J. (2017). “A large-scale simulation of climate change effects on flood regime – A case study for the Alabama-Coosa-Tallapoosa River Basin” 2016 American Geophysical Union Fall Meeting, 12-16th December 2016, San Francisco, CA.
2. Dullo, T., Gangrade, S., Marshall, R., Islam, S. R., Ghafoor, S., Kao, S-., C., Preston, B., and Kalyanapu, A. J. (2017). “The vulnerability of critical energy infrastructures to climate change induced flooding: A case study for the Alabama-Coosa-Tallapoosa River Basin” Creative Solutions for a Changing Environment, World Environmental & Water Resource Congress, Sacramento, CA, May 21-25, 2017.
3. Dullo, T. T., Kalyanapu, A.J., Ghafoor, S. K., Marshall, R.J., Tindall, K. J., Anantharaj, V., Shih-Chieh, K, and Gangrade, S. (2015). “Computational performance of a MPI-enabled and GPU-accelerated two-dimensional flood model” 2015 AGU Fall Meeting, San Francisco, CA, 14-18 December, 2015.
4. Dullo, T. T., Kalyanapu, A. J., Ghafoor, S., Anantharaj, V., Marshall, R., Tatarczuk, J., and Shih-Chieh, K., (2015). “Computational Performance of a Two-Dimensional Flood Model in Single and Multiple GPU Frameworks.” European Geosciences Union General Assembly 2015, April 12-17, 2015, Vienna, Austria

**GRANTS**

***External Grants – PI/Co-PI***

Dr. Ghafoor has been involved in 13 externally funded research projects where he was either PI(8) or Co-PI(5). The funded projects have totaled almost $2.42 M. He has also been involved as PI or Co-PI in 5 grant proposals which have not been funded.

1. Detection and Analysis of Malware in Critical Infrastructure. Grant Period October 4, 2017- September 30, 2018. Funding Agency: Oak Ridge National Lab. **Grant Amount $98,952, PI: Sheikh Ghafoor.**
2. CyberTraining:CDL:iPDC – Summer Institute for Integrating Parallel and Distributed Computing in Introductory Programming Classes. Grant Period: September 2017 – August 2020. Funding Agency: National Science Foundation, **Grant Amount: $499,988, PI: Sheikh Ghafoor, Co-PIs: Mike Rogers, David Brown**.
3. Tracking Water Storage in Lakes: Citizen and Satellites. Grant Period: January 2017 – February 2018. Funding Agency: NASA **Grant Amount: Prototype Phase:$152,674 (TTU portion $31,898), Implementation Phase: $1,492,802 (TTU partition $281,083)** **Co-PI: Sheikh Ghafoor, PI: Tamlin Pavelsky, UNC. (**Prototype phase has been funded, implementation phase may be funded based on performance of the prototype phase).
4. Benchmark and analyze open source parallel XXT libraries on different HPC architectures for performance prediction. Grant Period November 11, 2016 - September 30, 2017. Funding Agency: Oak Ridge National Lab. **Grant Amount $25,000, PI: Sheikh Ghafoor.**
5. Develop and Benchmark Architecture Agnostic Scalable Library of Data Parallel Kernels for Big Data Architecture. Grant Period April 1, 2016- September 30, 2016. Funding Agency: Oakridge National Lab. **Grant Amount $25,000, PI: Sheikh Ghafoor.**
6. Development of Integrated DHSVM-Flood2D-GPU modeling framework for regional-scale modeling for high-resolution rapid flood risk assessment. Grant Period March 1, 2016 - September 30, 2016. Funding Agency: Oak Ridge National Lab. **Grant Amount $60,000, Co- PI: Sheikh Ghafoor, PI: Alfred Kalyanapu.**
7. iPDC: Integrating Parallel and Distributed Computing in Introductory Programming.Grant Period: August 2015 – July 2016. Funding Agency: National Science Foundation, **Grant Amount: $49,973, PI: Sheikh Ghafoor, Co-PI: Mike Rogers**.
8. Knowledge‐based Flood Inundation Forecast on Affordable Mobile Platforms to Empower Farmers, Grant Period: October 2015 – September 2017. Funding Agency: University of Washington. **Grant Amount $35,000**, **TTU-PI: Sheikh Ghafoor**. Dr. Faisal Hossain is lead PI of this project Funding Agency: Development Innovation Ventures Annual Program of USAID (USAID/DIV) (Total Grant Amount $150,000).
9. Integrating Hands on Security Exercises in Computer Networks Class: Grant Period Jan 2015 –Dec 2015**.** Funding Agency: Intel-NSF-GTISC Security Education Micro-grant Program, **Grant Amount $5,000, PI: Sheikh Ghafoor**.
10. CyberWorkshops: Resources and Strategies for Teaching Cybersecurity in Computer Science (CReST).Grant Period: September 2014 – August 2017. Funding Agency: National Science Foundation, **Grant Amount: $550,000, Co- PI: Sheikh Ghafoor, PI: Ambareen Siraj**.
11. Department wide Parallel and Distributed Computing Adpotion**.** Funding Agency: National Science Foundation/TCPP Early Adopter grant, **Grant Amount: $5,500, PI: Sheikh Ghafoor**.
12. SecKnitKit (Security Knitting Kit): Integrating Security into Traditional Computer Science Courses. Grant Period: September 2012 – August 2014. Funding Agency: National Science Foundation, Grant Amount: $200,000, **Co- PI: Sheikh Ghafoor, PI: Ambareen Siraj**.
13. Enhancing the programming experience for engineering students through hands-on integrated computer experiences**.** Grant Period: September 2010 – August 2014. Funding Agency: National Science Foundation, **Grant Amount: $600,000, Co- PI: Sheikh Ghafoor, PI: Stephan Canfield**.

***External Grants – Senior Personnel***

1. Autonomic Dynamic Resource-­Aware Runtime System**.** Grant Period: January 2011 – September 2011. Funding Agency: Sandia National Laboratory, **Grant amount: $75,000, Senior Personnel: Sheikh Ghafoor, PI: Stephen Scott.**

***Internal Grants***

1. Rapid flood modeling and consequence assessment using heterogeneous accelerator based high performance computation. Funding Agency: Office of Research TTU, **Grant Amount: $10,000, PI: Alfred Kalayanpu, Sheikh Ghafoor.**
2. Prototyping a Smart-Phone Application for Class-room and Field Demonstration on Delivery of Water Knowledge from Environmental Satellites around the World. Funding Agency: College of Engineering, TTU, **Grant Amount: $10,000, CO-PI: Sheikh Ghafoor, PI: Faisal Hossain** .
3. Modeling and Simulation of an Adaptive Parallel System. Grant Period: July 2009-June 2010, Funding Agency: Office of Research, TTU, **Grant Amount: $4000, PI: Sheikh Ghafoor**.

**SOFTWARE**

Dr. Ghafoor and his computational earth science research group has developed two software:

1. LiquidEarth-River: a river height forecasting system for Bangladesh based on upstream satellite altimetry data. <http://climate.cae.tntech.edu/>. This software has worn 4th runner up prize in Geo Appathon 2014 competition.
2. LiquidEarth-FloodForeCast: A mobile app that provide 8 days lead time flood inundation forecast for Kulkandi area of Bangladesh based on the upstream satellite altimetry information. This app is currently being used by farmers of Kulkandi area in Bangladesh. This project is funded by USAID and is joint effort between Tennessee Tech, University of Washington and Bangladesh Water Development Board.

**AWARD**

LiquidEarth-River has won 4th runner-up prize in GeoAppathon-2014 competition. The competition is arranged by GEO an international nonprofit earth observation group. The award was announced during the 11th plenary session of GEO held in Geneva on Nov 19, 2014. There were 250 submissions from 50 countries. The cash value of the award is $1250, which was doubled because the app was targeted for a developing country. (<http://geoappathon.org/?page_id=307>, <http://www.geoconnexion.com/news/winners-of-geo-appathon-2014-announced/>)

**TEACHING**

***Doctoral Students***

1. Ryan Marshall (Expected Spring 2018)
2. Rima Asmar (Expected, Fall 2019)
3. Sheikh Rabiul Islam – Jointly with Dr. William Eberle (Expected Spring 2020)

***Committee Member for the following doctoral students***

* 1. Abebe S Gebregiorgis (CEE, Graduated, Summer 2013)
	2. Abel T. Woldemichael (CEE, Graduated Summer 2015)
	3. Wondmagegn Yigzaw (CEE, Graduated Spring 2016)
	4. Ferrol Adeholdt (ECE, Graduated Spring 2016)
1. James Pogge (ECE)
2. Tigstu Dullo (CEE)
3. Mohammad Khan Mamun (ECE)
4. Brandon S. England (ECE)
5. AHM Jakaria
6. Amarjit Datta
7. Jeffrey Graves
8. Alaeddine Saadaoui
9. Justin Medley

***Masters Students***

1. Md. Nazmul Islam (Graduated Spring 2013)
2. John Hale (Graduated Spring 2014)
3. Joseph Tatarczuk (Graduated Spring 2016)
4. Dustin Gardner (Graduated Spring 2017)
5. Ryan Marshall (Graduated Spring 2017)
6. Md. Mosharaf Hossain (Expected Spring 2018)
7. Md. Arman Ullah (Expected Spring 2018)
8. Sheikh Rabiul Islam (Expected Spring 2018)
9. David Yantis (Expected Fall 2018)
10. Ryan Shivers (Expected Spring 2019)

***Committee Member for the following Masters’ students***

1. Ferrol Aderholdt (Graduated Summer 2011)
2. Joseph Stites (Graduated Fall 2012)
3. Joshua Tower (Fall 2013)
4. Ross Binkley (Graduated Spring 2013)
5. Venkata Satavalli (Graduated Fall 2016)
6. Raduanul Islam (Graduated Summer 2016)
7. Russ Neely (Graduated Summer 2016)
8. Luke Jackson (Graduated Fall 2016)
9. Toufiq Islam (Graduated Fall 2016)
10. Konstantin Menako (Graduated Spring 2017)
11. Brandon England (ECE)
12. Md. Golam Moula Mehedi Hasan
13. Nishith Thakkar
14. Darren Cunningham
15. Cordell Medellin
16. Philip Westrich
17. Jonathan Harris

***Undergraduate Research and Independent Study***

* 1. Shritesh Bhattarai, “Satellite Altimetry Based Flood Inundation Forecast”, Fall 2016, Spring and Summer 2017 (Funded under USAID Grant)
	2. Muzakhir Amanzolov, “Benchmarking of SYRK Libraries on Shared Memory Architecture”, Spring 2017 (Funded under ORNL grant).
	3. Zachary Howard, “Implementation of Two Dimensional Flood Simulation on Multi-GPU Environment.”, Spring 2017 (Funded under ORNL grant).
	4. Caleb Currie, “Security of CAN Based In-Vehicle Network”, Fall 2017 (Funded by SFS Scholarship)

***Student Awards***

Multiple graduate students of Dr. Ghafoor have received awards in the form of fellowship of travel grants for their graduate research work.

1. Sheikh Rabiul Islam has been awarded 2017 Ivanhoe Fellowship for his work on Liquid Earth Flood Forecast and performance improvement of two dimensional flood simulation. The monetary value of the fellowship $7000 <http://www.theivanhoefoundation.com/students.htm>) .
2. Mohammad Arman Ullah have been awarded a travel grant ($1300) to attend 2017 IEEE Secure Development Conference held in Cambridge, MA for his work on in-vehicle network security.
3. Ryan Marshall has been awarded travel grant to volunteer ($1000) in 2017 Super Computing Conference to be held in Denver, CO for his work on programming model Heterogeneous HPC.
4. Md. Mosharaf Hossain hall has been awarded travel grant ($1000) to volunteer in 2017 Super Computing Conference to be held in Denver, CO for his work on linear algebra libraries for machine learning.

***Courses Developed***

Parallel Programming CSC 4760/5760 – This was the first offering of this course at TTU. Split level course that discussed foundations of parallel computing including the parallel computer architectures, principles of parallel algorithm design, programming for shared and distributed-memory systems, along with GPGPU.

Parallel and Distributed Algorithms CSC 6740- This was the first offering at TTU. Graduate level course that discussed design and analysis of parallel and distributed algorithms for modern parallel and distributed architectures.

Autonomic Computing CSC 7730 - This was the first offering of this course at TTU. Doctoral level course that discussed principles, key concepts, and proposed methodologies underlying the design and engineering of autonomic computing and networking (AC) systems. Investigates the origins, goals, and promises of autonomic computing. Includes complexity of autonomic computing, architecture, algorithms, enabling technology and development tools for autonomic computing.

***Degree Program Developed***

In spring of 2012, Dr. Ghafoor led the effort with Drs. William Eberle, Mike Rogers, Ambareen Siraj, Doug Talbert, and Stephen Scott to create the Ph.D. in Engineering - Computer Science Concentration degree program. As part of this effort six doctoral level courses were created, including Autonomic Computing (by Dr. Sheikh Ghafoor), High Performance Computing (by Dr. Stephen Scott), Distributed Operating Systems (by Dr. Mike Rogers), Anomaly and Intrusion Detection Systems (by Dr. William Eberle), Intelligent Information Systems (by Dr. Doug Talbert), and Security Topics in Smart (Dr. Ambareen Siraj).

In fall of 2015, Dr. Ghafoor worked with Drs. Stephen Scott and Mike Rogers to develop a new Parallel, Distributed, and High Performance Computing Concentration for the CSC undergraduate program. As part of this effort new courses were created, including Fundamental of Data Science and Distributed and Cloud computing.

In fall of 2009, Dr. Ghafoor worked with Drs. William Eberle, Doug Talbert, Mike Rogers, and Ambareen Siraj a major revision of CS- MS program. Revised MS program included separate areas of research based on faculty expertise and interests including, Knowledge Discovery, Parallel and Distributed Performance Computing, and Information Assurance and Security.

***Courses Taught***

Dr. Ghafoor has taught the following courses during his tenure at TTU

* Parallel Programming
* Parallel Distributed Algorithms
* Computer Networks
* Autonomic Computing
* Graduate Seminar
* Unix Programming Lab
* Introduction to Problem Solving and Computer Programming
* Data Structures and Algorithms
* Special Topics on Malware
* Advanced Topics: Accelerator Based Heterogeneous Systems

***Master’ Program Review***

In spring 2015, Dr. Ghafoor developed the TTU’s MS self-study documents for the review of MS program. The MS program received high praise and three commendations by the external reviewer panel.

**SERVICE ACTIVITIES**

**PROFESSIONAL SERVICES**

***Member***

* Association for Computing Machinery (ACM)
* Institute of Electrical and Electronic Engineering (IEEE)
* American Society for Engineering Education (ASEE

***Committees/Reviewer***

* NSF Panel Review, ACI/REU, 2015
* NSF Panel Review, ACI/REU, 2016
* NSF Panel Review, ACI/CRII, 2017
* Program Committee Member, EduHPC workshops, Supercomputing -The International Conference for High Performance Computing, Networking, Storage and Analysis, 2014 - Present
* Program Committee Member, The 17th IEEE International Conference on Computational Science and Engineering, December 19-21, 2014 Chengdu, China.
* Program Committee Member, The First International Symposium on Dependability in Sensor, Cloud, and Big Data Systems and Applications (DependSys2015), Zhangjiajie, China, November 18-20, 2015.
* Program Committee Member, EduPAR workshops, International Parallel and Distributed Processing Symposium 2014-Present.
* Reviewer, Journal of Super Computing, 2014
* Reviewer, Journal of Cluster Computing, 2014
* Reviewer, Journal of Parallel Distributed Computing 2015 - Present
* Program Chair, 7th NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar-17) in of International Parallel and Distributed Processing Symposium
* Organizer and steering committee member of Edu series of workshops (EduPar, EduHPC, Euro-EDUPAR)
* Area Lead, Cross Cutting Topics revision effort for NSF/TCPP Curriculum Initiative on Parallel and Distributed Computing – Core Topics for Undergraduates. ( <https://grid.cs.gsu.edu/~tcpp/curriculum/?q=node/21183>)
* Computer Science MS Program Review, 2017, Department Computer Science, East Tennessee State University

***Editor/Steering Committee***

* Sushil Prasad, Sheikh Ghafoor, and Satish Puri (Editors), Proceedings of 7th NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar-17) of International Parallel and Distributed Processing Symposium, IEEE Digital Xplor Digital Library, 2017.
* Sushil Prasad (Managing Editor), Sheikh Ghafoor, Ramachandran Vaidyanathan, Christos Kaklamanis, Satish Puri (Editors), Special Issue of Journal of Parallel Distributed Computing: Keeping up with Technology: Teaching Parallel, Distributed and High-Performance Computing, Elsevier, May 2018
* Steering Committee Member Center for Parallel and Distributed Computing Curriculum Development and Educational Resources (CDER Center)

**UNIVERSITY SERVICE**

***University***

* University Research Advisory Committee, August 2017 - 2020
* TTU Student Research Day Judge 2015, 2016
* Faculty Search Committee, Department of Physics, 2012
* Graduate School Executive Committee, 2015 – Present
* Science Quiz Bowl Judge, 2010

***College***

* College of Engineering Graduate Committee, 2013 – present
* Promotion Committee for Dr. Kristine Craven, Basic Engineering, 2016-2017
* Computer Engineering Curriculum Committee, 2010 - Present
* Implementation of Renaissance Education Model Team, 2015 – present

***Department***

* Director of Graduate Program, Department of Computer Science 2013 – present
* Coordinator, Parallel and Distributed Computing Group, Department of Computer Science 2008 – present
* Computer Science Chair Search Committee, 2014, 2015
* ACM Mid-Central USA programming Contest Judge, 2008
* Library Committee, 2010-2015
* SOAR (Student Orientation) 2008 – 2015
* Oak Ridge National Lab Ph.D. program Coordinator, 2016-present
* ABET Self Study Report, worked with Dr. Talbert for ABET self-study report