



Dr. SHARAD SHARMA

Professor, Department of Computer Science
Director, Virtual Reality Laboratory
Bowie State University, Bowie, MD 20715

(734) 358 3842 (C)
(301) 860 4502 (O)
ssharma@bowiestate.edu

Citizenship: U.S.A

<http://www.cs.bowiestate.edu/sharad/>

Professional Preparation

1. Ph.D., Computer Engineering, Wayne State University, Detroit, MI, Graduated: **2006**
Area: Software Engineering and Artificial Intelligence
Dissertation Title: Modeling and Simulation of Multi-Agent Systems for Emergency Scenarios
2. M.S., Architecture, University of Michigan, Ann Arbor, MI, Graduated: **2003**
Area: Computer-Aided-Design
Master's Thesis Title: Collaboration, Simulation and Graphic Design in Java and C++
3. B.Arch. Birla Institute of Technology, India, Graduated: **1999**

Professional Appointments

1. *Professor*, Department of Computer Science, Bowie State University, Bowie, MD, 2019 – Present.
a. *Graduate Coordinator*, Department of Computer Science, BSU, Aug. 2019 - Present
2. *Associate Professor*, Department of Computer Science, Bowie State University, Bowie, MD, 2013 – 2019. (**Tenured and Promoted in 2013**)
3. *Assistant Professor*, Department of Computer Science, Bowie State University, Bowie, MD, 2007 – 2013.
4. *Research /Teaching Assistant*, Department of Electrical and Computer Engineering, Wayne State University, Detroit, MI, 2005 -2006.
5. *Research/Teaching Assistant*, University of Michigan, Ann Arbor, MI, 2000-2004

Publications

Books Edited/ Book Chapters:

1. **Sharma, S**, "Improving emergency response training and decision making using collaborative virtual reality environment for building evacuation", In Virtual, Augmented and Mixed Reality. Multimodal Interaction, HCII 2020. Lecture Notes in Computer Science, Springer, Cham, **2020**.
2. **Sharma, S**, Bodempudi S.T., Scribner D., Grynovicki J., Grazaitis P., "Emergency Response Using HoloLens for Building Evacuation", In Virtual, Augmented and Mixed Reality. Multimodal Interaction. HCII 2019. Lecture Notes in Computer Science, vol 11574, pp 299-311, https://doi.org/10.1007/978-3-030-21607-8_23, Print ISBN 978-3-030-21606-1, Springer, Cham, **2019**.
3. Frederick C Harris, Jr., Sergiu M. Dascalu, and **Sharad Sharma** (eds), Proceedings of the 28th International Conference on Software Engineering and Data Engineering, SEDE 2019, San Diego, CA, USA, September 30 - October 2, 2019.
4. Frederick C Harris, Jr., Sergiu M. Dascalu, and **Sharad Sharma** (eds), Proceedings of the 27th International Conference on Software Engineering and Data Engineering, SEDE 2018, New Orleans, LA, USA, Oct 8-10, 2018.
5. Frederick C Harris, Jr., Sergiu M. Dascalu, and **Sharad Sharma** (eds), Proceedings of the 26th International Conference on Software Engineering and Data Engineering, SEDE 2017, San Diego, CA, USA, Oct 2-4, 2017.

Journals

1. Rajeev,S., Sharma, S, "Evaluation of Game-Theme Based Instructional Modules for Data Structure Concepts", International Journal of Computers and their Applications, IJCA, Vol. 27, No. 1, March **2020**.
2. Stigall, J., Bodempudi, S.T., **Sharma, S**, Scribner, D., Grynovicki, J., Grazaitis, P., "Use of Microsoft HoloLens in indoor evacuation", International Journal of Computers and their Applications, IJCA, Vol. 26, No. 1, March **2019**.

3. Frederick C Harris, Jr., Sergiu M. Dascalu, and Sharad Sharma (eds), Special Issue of International Journal of Computers and their Applications, IJCA, ISSN 1076-5204, Vol. 26, No. 1, March **2019**.
4. Frederick C Harris, Jr., Sergiu M. Dascalu, and Sharad Sharma (eds), Special Issue of International Journal of Computers and their Applications, IJCA, Vol. 25, No. 1, March **2018**.
5. Oladunni, T., **Sharma, S.**, "H2O Deep Learning for Hedonic Pricing", International Journal of Computers and their Applications, IJCA, Vol. 25, No. 1, March **2018**.
6. **Sharma, S.**, Ogunlana, K., P., Scribner, P., Grynovicki, "Modeling human behavior during emergency evacuation using intelligent agents: A multi-agent simulation approach", Springer special issue of Information Systems Frontiers on Disaster Management and Information Systems. Springer, DOI: 10.1007/s10796-017-9791-x, [<http://rdcu.be/vjtS>], August, **2017**.
7. **Sharma, S.**, "A Collaborative Virtual Environment for Safe Driving in a Virtual City by Obeying Traffic Laws", Journal of Traffic and Logistics Engineering (JTLE, ISSN: 2301-3680), pp. 84-92, Volume 5, No. 2, **2017**.
8. Onodueze, F, **Sharma, S.**, "Rijndael Algorithm for Database Encryption on a Course Management System", International Journal of Computers and their Applications, IJCA, Vol. 24, No. 1, March **2017**.
9. Oladunni, T, **Sharma, S.**, "Predicting Fair Housing Market Value: A Machine Learning Investigation", International Journal of Computers and their Applications, IJCA, Vol. 23, No. 3, Sept. **2016**.
10. **Sharma, S.**, and Ogunlana, K., "Using Genetic Algorithm & Neural Network for modeling learning behavior in a Multi-Agent System during Emergency Evacuation", International Journal of Computers and their Applications, IJCA, Vol. 22, No. 4, page 172-182, Dec. **2015**.
11. **Sharma, S.**, Doswell, J., "Pattern matching and information extraction in a software system for a battlefield environment", Journal of Computational Methods in Science and Engineering, Volume 12, No.3, Supplement 1, page S113-S118, ISSN: 1472-7978, **2012**.
12. **Sharma, S.**, "Use of Favorite Goal in Agent Based Modeling and Simulation", International Journal of Computers and their Applications, IJCA, Vol. 19, No. 1, March **2012**.
13. Lohgaonkar, **Sharma, S.**, "Online Assessment System with Offline Capabilities", Journal of Computer Technology and Application (JCTA-E20111006-1), Vol.3, No.1, **2012**.
14. **Sharma, S.**, "Fuzzy approach for predicting probability of reaching a target in a battlefield environment", International Journal of Computers and their Applications, IJCA, Vol. 17, No. 1, March **2010**.
15. **Sharma, S.**, "Military route planning in battle field simulations for a multi-agent system", Journal of Computational Methods in Science and Engineering, Volume 10, No.1,2, page. S97-S105, ISSN: 1472-7978, **2010**.
16. **Sharma, S.**, "Avatarsim: A multi-agent system for emergency evacuation simulation", Journal of Computational Methods in Science and Engineering, Volume 9, No. 1,2, page S13-S22, ISSN 1472-7978, **2009**.
17. **Sharma, S.**, Singh, H., Prakash, A., "Multi-agent modeling and simulation of human behavior in aircraft evacuations", IEEE Transactions on Aerospace and Electronic Systems, Vol.44, No.4, October **2008**.
18. **Sharma, S.**, Turner, J., "An object oriented approach to simulating agent-based behavior", SIGRaDi, CUMINCAD Journal, page 310-312, Brazil, 10-12 November **2004**.

Conferences (Peer Reviewed)

1. **Sharma, S.**, "Improving emergency response training and decision making using collaborative virtual reality environment for building evacuation", Proceedings of the 22nd International Conference on Human-Computer Interaction (HCI International 2020), Thematic Area: Virtual, Augmented and Mixed Reality, Copenhagen, Denmark, 19-24 July **2020**.
2. **Sharma, S.**, Stigall, J., Bodempudi, S.T., "Situational awareness-based Augmented Reality Instructional (ARI) module for building evacuation", Proceedings of the 27th IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), doi: 10.1109/VRW50115.2020.00020, Atlanta, GA, USA, pp. 70-78, **2020**.
3. **Sharma, S.**, Bodempudi, S.T., "Identifying anomalous behavior in a building using HoloLens for emergency response", IS&T International Symposium on Electronic Imaging (EI 2020), in the Engineering Reality of Virtual Reality, DOI: <https://doi.org/10.2352/ISSN.2470-1173.2020.13.ERVR-224>, 26 January- 30 January **2020**.
4. **Sharma, S.**, Bodempudi, S.T., "Active Shooter response training environment for a building evacuation in a collaborative virtual environment", IS&T International Symposium on Electronic Imaging (EI 2020), in the Engineering Reality of Virtual Reality, DOI: <https://doi.org/10.2352/ISSN.2470-1173.2020.13.ERVR-223>, 26 January- 30 January **2020**.
5. **Sharma, S.**, Bodempudi, S.T., Arrolla, M., "Collaborative Virtual Assembly Environment for Product Design", Proceeding of the IEEE International Conference on Computational Science and Computational Intelligence (CSCI'19), Las Vegas, Nevada, USA, pp. 606-611, doi: 10.1109/CSCI49370.2019.00114, Dec 05-07, **2019**.
6. Bodempudi, S.T., **Sharma, S.**, Sahu, A., "Human-Centric Situational Awareness and Big Data Visualization", Proceeding of 28th International Conference on Software Engineering and Data Engineering (SEDE 2019) in San Diego, CA, USA, vol 64, pages 51—60, on September 30 - October 2, **2019**.

7. Oladunni, T., **Sharma, S.**, "Homomorphic Encryption and Data Security in the Cloud", Proceedings of 28th International Conference on Software Engineering and Data Engineering (SEDE 2019) in San Diego, CA, USA, vol. 64, pp. 129-138, on September 30 - October 2, **2019**.
8. Stigall, J., **Sharma, S.**, "Evaluation of Mobile Augmented Reality Application for Building Evacuation", Proceedings of 28th International Conference on Software Engineering and Data Engineering (SEDE 2019) in San Diego, CA, USA, vol 64, pages 109—118, on September 30 - October 2, **2019**.
9. Rajeev, S., **Sharma, S.**, "Motivational Game-Theme Based Instructional Module for Teaching Binary Tree and Linked List, Proceedings of 28th International Conference on Software Engineering and Data Engineering (SEDE 2019) in San Diego, CA, USA on September 30 - October 2, **2019**.
10. **Sharma, S.**, Bodempudi, S.T., Scribner, D., Grynovicki, J., Grazaitis, P. "Emergency response using HoloLens for building evacuation", In Virtual, Augmented and Mixed Reality. Multimodal Interaction. HCII 2019. Lecture Notes in Computer Science, vol 11574, pp 299-311, https://doi.org/10.1007/978-3-030-21607-8_23, Print ISBN 978-3-030-21606-1, Springer, Cham, **2019**.
11. **Sharma, S.**, Frempong, I.A., Scribner, D., Grynovicki, J., Grazaitis, P., "Collaborative Virtual Reality Environment for a Real-time Emergency Evacuation of a Nightclub Disaster", IS&T International Symposium on Electronic Imaging (EI 2019), in the *Engineering Reality of Virtual Reality*, Hyatt Regency San Francisco Airport, Burlingame, California, pp. 181-1-181-10(10), 13 January- 17 January **2019**.
12. **Sharma, S.**, Devreaux, D., Scribner, D., Grynovicki, J., Grazaitis, P., "Artificial intelligence agents for crowd simulation in an immersive environment for emergency response", IS&T International Symposium on Electronic Imaging (EI 2019), in the *Engineering Reality of Virtual Reality*, Hyatt Regency San Francisco Airport, Burlingame, California, pp. 176-1-176-8(8), 13 January- 17 January **2019**.
13. Stigall, J., Baskar, R., **Sharma, S.**, "Assembly VR: An Immersive Virtual Reality Environment for Concept Design", Proceedings of 27th International Conference on Software Engineering and Data Engineering (SEDE 2018), New Orleans, Louisiana, USA, pp. 57-62, October 8-10, **2018**.
14. Stigall, J., Bodempudi, S.T., **Sharma, S.**, Scribner, D., Grynovicki, J., Grazaitis, P., "Building Evacuation using Microsoft HoloLens", Proceedings of 27th International Conference on Software Engineering and Data Engineering (SEDE 2018), New Orleans, Louisiana, USA, pp. 20-25, October 8-10, **2018**. [**Best paper award finalist**]
15. Rajeev, S., **Sharma, S.**, "Educational Game theme based Instructional module for teaching introductory programming", Proceedings of 44th Annual Conference of the IEEE Industrial Electronics Society (IECON 2018), Washington DC, USA, October 21-23, **2018**.
16. Rajeev, S., **Sharma, S.**, "Evaluation of GTI modules based on usability and likeability", Proceedings of 27th International Conference on Software Engineering and Data Engineering (SEDE 2018), New Orleans, Louisiana, USA, pp. 69-74, October 8-10, 2018.
17. Taylor, L., **Sharma, S.**, " Model Composition via Object-Role Modeling", Proceedings of IEEE SoutheastCon 2018, Hilton Bay Front, St. Petersburg, FL, USA, 19 Apr - 22 Apr **2018**.
18. Stigall, J., **Sharma, S.**, "Usability and Learning Effectiveness of Game-Themed Instructional (GTI) Module for Teaching Stacks and Queues", Proceedings of IEEE SoutheastCon 2018, Hilton Bay Front, St. Petersburg, FL, USA, 19 Apr - 22 Apr **2018**.
19. Oladunni, T., **Sharma, S.**, "An Occam Razor approach to Hedonic Pricing Theory", Proceedings of 4th IEEE International Conference on Computational Science and Computational Intelligence (CSCI' 17), Las Vegas, USA, December 14-16, **2017**.
20. Oladunni, T., **Sharma, S.**, "A Spatio – Temporal Hedonic House Regression Model", Proceedings of 16th IEEE International Conference On Machine Learning and Applications (IEEE ICMLA17), Cancun, Mexico, DOI 10.1109/ICMLA.2017.00-94, pp. 607 – 612, December 18-21, **2017**.
21. Oladunni, T., **Sharma, S.**, Tiwang, R., "Foreclosure Sale and House Value: Correlation or Causation?", Proceedings of 16th IEEE International Conference On Machine Learning and Applications (IEEE ICMLA17), Cancun, Mexico, DOI 10.1109/ICMLA.2017.00-93, pp. 613 – 618, December 18-21, **2017**.
22. Rajeev, **S.**, **Sharma, S.**, Sahu, A., "Game Theme Based Instructional Module to teach Binary Trees Data Structure", Proceedings of ISCA 26th International Conference on Software Engineering and Data Engineering (SEDE-2017), pp. 13-18, 978-1-943436-09-5, San Diego, CA, USA, October 2-4, **2017**.
23. Stigall, J., **Sharma, S.**, "Mobile Augmented Reality Application for Building Evacuation Using Intelligent Signs", Proceedings of ISCA 26th International Conference on Software Engineering and Data Engineering (SEDE-2017), pp. 19-24, 978-1-943436-09-5, San Diego, CA, USA, October 2-4, **2017**.
24. Oladunni, T., **Sharma, S.**, "Hedonic House Pricing Model using Deep Learning With a L1 Regularization", Proceedings of ISCA 26th International Conference on Software Engineering and Data Engineering (SEDE-2017), pp. 125-130, 978-1-943436-09-5, San Diego, CA, USA, October 2-4, **2017**.
25. Stigall, J., **Sharma, S.**, "Virtual Reality Instructional Modules for Introductory Programming Courses ", Proceedings of *IEEE Integrated STEM Education Conference (ISEC)*, pages: 33- 41, DOI: 978-1-5090-5379-7/17, Princeton, New Jersey, Saturday, March 11, **2017**.
26. **Sharma, S.**, Ossuetta, E., "Virtual Reality Instructional Modules in Education Based on Gaming Metaphor", IS&T International Symposium on Electronic Imaging (EI 2017), in the *Engineering Reality of Virtual Reality*,

Hyatt Regency San Francisco Airport, Burlingame, California, pp. 11-18(8), DOI: <https://doi.org/10.2352/ISSN.2470-1173.2017.3.ERVR-090>, 29 January- 2 February 2017.

27. **Sharma, S.**, Devreaux, P., Scribner, P., Grynovicki, J., Grazaitis, P., "Megacity: A Collaborative Virtual Reality Environment for Emergency Response, Training, and Decision Making, IS&T International Symposium on Electronic Imaging (EI 2017), in the *Visualization and Data Analysis Proceedings Papers*, Hyatt Regency San Francisco Airport, Burlingame, California, pp. 70-77(8), DOI: <https://doi.org/10.2352/ISSN.2470-1173.2017.1.VDA-390>, 29 January- 2 February 2017.
28. **Sharma, S.**, "A Collaborative Virtual Environment for Safe Driving in a Virtual City by Obeying Traffic Laws", International Conference on Intelligent Traffic and Transportation (ICITT 2017), Zurich, Switzerland, September 1-3, 2017.
29. Jain, A., Mani, A., **Sharma, S.**, "A data driven approach for scheduling the charging of Electric Vehicles", Proceedings of 2nd IEEE International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE), Noida India, 26-27th October, 2017.
30. **Oladunni, T., Sharma, S.**, "Spatial Dependency and Hedonic Housing Regression Model", Proceedings of 15th IEEE International Conference on Machine Learning and Applications (ICMLA 2016), Anaheim, California, USA, pp. 553-558, doi: 10.1109/ICMLA.2016.0097, December 18-20, 2016.
31. Oladunni, T., **Sharma, S.**, "Hedonic Housing Theory – A Machine Learning Investigation", Proceedings of 15th IEEE International Conference on Machine Learning and Applications (ICMLA 2016), Anaheim, California, USA, pp. 522-527, doi: 10.1109/ICMLA.2016.0092, December 18-20, 2016.
32. Conn, M., **Sharma, S.**, "Immersive Telerobotics using the Oculus Rift and the 5DT Ultra Data Glove", Proceedings of IEEE International Conference on Collaboration Technologies and Systems (CTS 2016), Orlando, Florida, USA, pp. 387-391, doi: 10.1109/CTS.2016.0075, Oct.31 – Nov. 04, 2016. [**Best paper award** runners up]
33. Onodueze, F., **Sharma, S.**, "Encryption on Course Management System Using Rijndael Algorithm", Proceedings of ISCA 25th International Conference on Software Engineering and Data Engineering (SEDE-2016), Marriott Tech Center, Denver, USA, September 26-28, 2016.
34. **Sharma, S.**, Ogunlana, K., Sree, S., "Modeling and Simulation of Evacuation Behavior using Fuzzy Logic in a Goal Finding Application", Proceedings of SPIE 9848, Modeling and Simulation for Defense and Security Systems and Applications XI, Baltimore, MD, USA; doi:10.1117/12.2220598, 12 May, 2016.
35. **Sharma, S.**, Stigall, J., Rajeev, S., "Game–Theme Based Instructional Module for Teaching Object Oriented Programming", Proceedings of IEEE the International Conference on Computational Science and Computational Intelligence (CSCI), Las Vegas, USA, December 7-9, 2015.
36. **Sharma, S.**, Jerripathula, S., Arah, D., Nadarajah, S., "Mobile App for increasing Productivity and Health at Workplace", Proceedings of ISCA 24th International Conference on Software Engineering and Data Engineering (SEDE 2015), San Diego, California, USA, page 177- 182, ISBN: 978-1-943436-01-9, October 12-14, 2015.
37. Oladunni, T., **Sharma, S.**, "Predictive Real Estate Multiple Listing System Using MVC Architecture and Linear Regression", ISCA 24th International Conference on Software Engineering and Data Engineering (SEDE 2015), San Diego, California, USA, page 147- 152, ISBN: 978-1-943436-01-9, October 12-14, 2015.
38. **Sharma, S.**, Jerripathula, S., Devreaux, P., "An Immersive Collaborative Virtual Environment of a University Campus for performing Virtual Campus Evacuation drills and Tours for Campus Safety", proceedings of IEEE International Conference on Collaboration Technologies and Systems (CTS 2015), Atlanta, Georgia, USA, Pages: 84 - 89, DOI: 10.1109/CTS.2015.7210404, June 01-05, 2015.
39. **Sharma, S.**, and Ogunlana, K., "Modeling Learning Behavior in a Multi-Agent System using GA & NN during Evacuation", Proceedings at the ISCA 30th International Conference on Computers and their Applications (CATA 2015), Honolulu, Hawaii, USA, page 295-300, ISBN: 978-1-880843-98-7, March 9-11, 2015.
40. **Sharma, S.**, Jerripathula, S., "An indoor augmented reality mobile application for simulation of building evacuation", Proceedings of SPIE conference on the Engineering Reality of Virtual Reality 2015, paper 9392-7, San Francisco, CA, USA, doi: 10.1117/12.2086390, 9 - 10 February 2015.
41. **Sharma, S.**, Jerripathula, S., Mackey, S. and Soumare, O., "Immersive Virtual Reality Environment of a Subway Evacuation on a Cloud for Disaster Preparedness and Response Training", Proceedings of IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2014), Orlando, Florida, USA, Pages: 1 - 6, DOI: 10.1109/CIHLI.2014.7013380, Dec. 9-12, 2014.
42. Ogunlana, K., **Sharma, S.**, "Agent based Simulation model for data visualization during evacuation", Proceedings of 2014 ASE/IEEE BIGDATA/SOCIALCOM/CYBERSECURITY Conference, ISBN: 978-1-62561-000-3, page 1-6, Stanford University, May 27-31, 2014.
43. Mou, X., **Sharma, S.**, "Restaurant Online Ordering System with Personalized Advertising through Data Mining", ISCA 23rd International Conference on Software Engineering and Data Engineering (SEDE 2014), New Orleans, USA, October 13-15, 2014.
44. **Sharma, S.**, Chen, W., "Multi-user VR Classroom with 3D interaction and real-time motion detection", Proceedings of IEEE the International Conference on Computational Science and Computational Intelligence (CSCI'14), Las Vegas, USA, March 10-13, 2014.

45. **Sharma, S.**, Agada, R., and Ruffin, J., "Virtual Reality Classroom as an Constructivist Approach", Proceedings of IEEE SoutheastCon 2013, Jacksonville, Florida, April 4th - 8th, 2013.
46. **Sharma, S.**, and Ogunlana, K., "Using Genetic Algorithm and Neural Networks in a Goal Finding Application for Evacuation", Proceedings at the ISCA 22nd International Conference on Software Engineering and Data Engineering (SEDE-2013), Los Angeles, California, USA, page 25-30, Sep 25 – 27, 2013.
47. M'Balé, K., Josyula, D., and **Sharma, S.**, "Topic-Based Service Integration in Software Systems", Proceedings at the ISCA 22nd International Conference on Software Engineering and Data Engineering (SEDE-2013), Los Angeles, California, USA, page 3-8, Sep 25 – 27, 2013.
48. **Sharma, S.**, Otunba, S., "Collaborative Virtual Environment to Study Aircraft Evacuation for Training and Education", Proceedings of IEEE, International Workshop on Collaboration in Virtual Environments (CoVE - 2012), as part of The 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), Denver, Colorado, USA, may 21-25, 2012.
49. **Sharma, S.**, Otunba, S., and Ogunlana, K., Tripathy, T., "Intelligent Agents in a Goal Finding Application for Homeland Security", Proceedings of IEEE, SoutheastCon 2012, Orlando, Florida, USA, March 14-17, 2012.
50. S. Ji, **S. Sharma**, B. Yu, D. H. Jeong, "Designing a Computer-Aided Rule-Based Hourly Rainfall Prediction", Proceedings of the IEEE International Conference on Information Reuse and Integration, (IEEE IRI 2012), Las Vegas, USA, Aug. 8-10, 2012.
51. Mivule, K., Otunba, S., Tripathy, T., and **Sharma, S.**, "Implementation of Data Privacy and Security in an Online Student Health Records System", Proceedings at the ISCA 21th International Conference on Software Engineering and Data Engineering (SEDE-2012), Los Angeles, California, USA, June 27 – 29, 2012.
52. MBalé, K., Nwolisa, A., Ogunlana, K. and **Sharma, S.**, "Teaching Domain Simplification using Furaha", Proceedings at the ISCA 21th International Conference on Software Engineering and Data Engineering (SEDE-2012), Los Angeles, California, USA, June 27 – 29, 2012.
53. **Sharma, S.**, Otunba, S., and Han, J., "Crowd Simulation in Emergency Aircraft Evacuation using Virtual Reality", Proceedings of IEEE, 16th International Conference on Computer Games: AI, Animation, Mobile, Interactive Multimedia, Educational & Serious Games, (CGAMES), Kentucky, USA, July 27-30, 2011.
54. **Sharma, S.**, Shete, S., "Pattern matching and information extraction in a software system for a battlefield environment", Proceedings of *International Conference on Software Engineering and Data Engineering*, SEDE, June 20- 22, Las Vegas, Nevada, USA, 2011.
55. **Sharma, S.**, Han, J., "Angel Blaze Media Player for Children with Client/Server File Sharing", Proceedings of *International Conference on Software Engineering and Data Engineering*, SEDE, June 20- 22, Las Vegas, Nevada, USA, 2011.
56. **Sharma, S.**, and Otunba, S., "Virtual Reality as a Theme-Based Game Tool for Homeland Security Applications", Proceedings of ACM Military Modeling & Simulation Symposium (MMS11), Boston, MA, USA, April 4 - 7, 2011.
57. **Sharma, S.**, and Shete, S., "Virtual City: A gaming tool for training and education", Proceedings of ISCA 26th International Conference on Computers and their Applications, New Orleans, LA, USA, March 23-25, 2011.
58. **Sharma, S.**, "Favorite goal in agent based modeling and simulation", Proceedings of the 19th International Conference on Software Engineering and Data Engineering, SEDE, San Francisco, California, USA, June 16-18, 2010.
59. Lohgaonkar, S, **Sharma, S.**, "Online Assessment System with Offline Capabilities", Proceedings of the 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing, July 12-15, pg. 284-289, 2010.
60. **Sharma, S.**, Lohgaonkar, S., "Simulation of agent behavior in a goal finding application", Proceedings of IEEE SoutheastCon Conference, March 18-21, Charlotte-Concord, NC, pages: 424-427, 2010.
61. **Sharma, S.**, "Military route planning in battle field simulations for a multi-agent system", Proceedings of the International Conference on Software Engineering and Data Engineering, SEDE, June 22- 24, Las Vegas, Nevada, USA, 2009.
62. **Sharma, S.**, Vadali, H., "Modeling emergency scenarios in virtual evacuation environment", Proceedings of IEEE World Congress on Computer Science and Information Engineering, CSIE, March 31 - April 2, Los Angeles, USA, pg. 759-763, 2009.
63. **Sharma, S.**, "Simulation and modeling of group behavior during evacuation", Proceedings of IEEE Symposium Series on Computational Intelligence, Intelligent Agents, March 30-April 2, Nashville, TN, USA, 2009.
64. **Sharma, S.**, Vadali, H., "Simulation and modeling of a virtual library for navigation and evacuation", Proceedings of MSV'08 - The 2008 International Conference on Modeling, Simulation and Visualization Methods, Monte Carlo Resort, Las Vegas, Nevada, USA, July 14-17, 2008.
65. **Sharma, S.**, "Avatarsim: A multi-agent system for emergency evacuation simulation", 17th International Conference on Software Engineering and Data Engineering, Los Angeles, California USA, June 30 - July 2, 2008.
66. **Sharma, S.**, Singh, H., Gerhart, G.R., "Simulation of convoy of unmanned vehicles using agent based modeling", Proceedings of SPIE conference on security and defense, Florence, Italy, 17 - 20 September 2007.

67. **Sharma, S.**, Singh, H "Multi-agent system for simulating human behavior in egress simulations", Proceedings of NAACSOS, Annual Conference of the North American Association for Computational Social and Organizational Sciences, Notre Dame, Indiana, USA, June 22-23, 2006. Selected for best paper award
68. **Sharma, S.**, Awasthi, A, "Fuzzy approach for forecasting navigation in simulating agent based behavior", Proceedings of ISCA, 18th International Conference on Parallel and Distributed Computing Systems, Las Vegas, Sep 12-14, 2005.
69. **Sharma, S.**, Gifford, S., "Using RFID to evaluate evacuation behavior models", Proceedings of NAFIPS 05, IEEE, North American Fuzzy Information Processing Society Conference, Ann Arbor, MI, June 22-25, 2005.
70. Awasthi, P., **Sharma, S.**, Awasthi, A., "A fuzzy logic model for estimation of groundwater recharge", Proceedings of the IEEE North American Fuzzy Information Processing Society Conference, Ann Arbor, MI, June 22-25, 2005.
71. **Sharma, S.**, Singh, H., Awasthi, A., Ranjan, R., "Fuzzy logic for development of new materials through ADI example", Proceedings of the National Conference of Materials, NCM, Bhaddal, March 2005.
72. **Sharma, S.**, Turner, J., "An object oriented approach to simulating agent-based behavior", SIGraDi conference and CUMINCAD Journal, Brazil, 10-12 November 2004.
73. **Sharma, S.**, Turner, J., Pasek, Z., "Virtual Museum: Use of virtual reality as an educational tool", Proceedings of the ARCC Conference and Online Journal, at Arizona State University, Tempe, April 10-12, 2003.
74. **Sharma, S.**, "Designing for learning", Position Paper, Workshop, Conference on Human Factors in Computing Systems, (CHI) Conference, 2003.

Posters and Student Presentations

1. James Stigall and Dr. Sharad Sharma, "Evaluation of virtual reality instructional modules based on student assessment and learning gains" Black History Month Observance at the National Institute of Standards and Technology (NIST), February 6, **2020**.
2. James Stigall and Dr. Sharad Sharma, "Virtual Reality Instructional Modules for Teaching Programming" at 12th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 17, 2019. **[Won First Prize]**
3. Nada Chaoui and Dr. Sharad Sharma, "BSU Emergency Response Training for Active Shooter Events" at 12th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 17, 2019.
4. Sri Teja Bodempudi and Dr. Sharad Sharma, "HoloLens for building evacuation" at 12th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 17, 2019.
5. James Stigall and Dr. Sharad Sharma, "Virtual Reality Instructional Modules for STEM Education" at the 2019 Capital PKAL Regional Network Meeting at Bowie State University, Bowie, MD 20715, March 15, 2019.
6. James Stigall and Dr. Sharad Sharma, "Mobile augmented reality application for building evacuation", Poster Presentation, 11th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 10, **2018. [Won first Prize]**
7. Sarika Rajeev and Dr. Sharad Sharma, "Game Theme Based Instructional Module to teach Binary Trees based on usability and likability", Poster Presentation, 11th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 10, **2018**.
8. Dilorah Arah and Dr. Sharad Sharma, "Work Fitness App in Android", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on March 2-4, **2017**.
9. Phillip Devreaux and Dr. Sharad Sharma, "Collaborative virtual environment for training emergency response officials and civilians in big city using Unity 3D gaming engine", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on March 2-4, **2017**.
10. Emmanuel Ossuetta and Dr. Sharad Sharma, "Megacity: A Collaborative Virtual Reality Environment for Emergency Response, and Decision Making", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on March 2-4, **2017**.
11. James Stigall and Dr. Sharad Sharma, "Mobile Augmented Reality Application (MARA) for Building Evacuation", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on March 2-4, **2017**.
12. Dilorah Arah and Dr. Sharad Sharma, "A Fitness Application For Increasing Productivity In The Workplace", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on February 25-27, 2016.
13. Phillip Devreaux and Dr. Sharad Sharma, "Virtual Tour of University Campus Using Oculus Rift", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on February 25-27, 2016.
14. Swetha Sree and Dr. Sharad Sharma, "Modeling Evacuation behavior using fuzzy logic in a multi-agent system", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on February 25-27, 2016.
15. Veda Lakshmi Swetha Dasari and Dr. Sharad Sharma, "Augmented Reality (AR) mobile application for campus building evacuation", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on February 25-27, 2016.
16. James Stigall and Dr. Sharad Sharma, "Modeling stress and panic in emergency situation", Oral Presentation, at the Emerging Researchers National (ERN) Conference in STEM, hosted by AAAS, EHR and NSF, on Washington DC, on February 25-27, 2016.

17. Kourtney Ramseur and Dr. Sharad Sharma, "Urban emergency evacuation environment", Poster Presentation, 8th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 20-21, 2015.
18. Usha Govindaraju and Dr. Sharad Sharma, "Emergency Evacuation in Thurgood Marshall Library", Poster Presentation, 8th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 20-21, 2015.
19. Pranay Rajeev and Dr. Sharad Sharma, "Augmented Reality Mobile Application for emergency Evacuation in BSU library", Poster Presentation, 8th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 20-21, 2015.
20. James Stigall and Dr. Sharad Sharma, "Game Theme-based educational Modules for introductory programming", Poster Presentation, 8th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 20-21, 2015.
21. Isaac Amo-Frempong and Dr. Sharad Sharma, "Virtual Evacuation Drill in a Multi-user Environment", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
22. Shanmukha Jerripothula and Dr. Sharad Sharma, "Immersive Virtual Reality Environment for Airplane Emergency Evacuation", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
23. James Stigall and Dr. Sharad Sharma, "Game Theme-Based Educational Modules for Introductory Programming Courses", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
24. Dexter Ballerda and Dr. Sharad Sharma, "Augmented Reality Application for Campus Navigation and Learning", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
25. Phillip Devreaux and Dr. Sharad Sharma, "Immersive Multi-User Campus Platform", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
26. Jeff Ruffin Jr and Dr. Sharad Sharma, "Game Theme Based Educational Module for Inheritance", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
27. Stephon Mackey and Dr. Sharad Sharma, "Virtual Reality Subway Evacuation Drill with Multi-User Environment", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
28. Dilorah Arah and Dr. Sharad Sharma, "A Fitness Application for Increasing Productivity in the Work-place", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 19-21, 2015.
29. Shanmukha Jerripothula and Dr. Sharad Sharma, "Oculus Rift with Unity 3D", 7th Annual Grant Expo, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 22, 2014.
30. Stephon Mackey and Dr. Sharad Sharma, "Virtual Reality Subway Evacuation Drill with Multi-User Environment", 7th Annual Grant Expo, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 22, 2014.
31. Roy B. Brown II and Dr. Sharad Sharma, "Emergency Response Simulation Using Virtual Reality", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 20-22, 2014.
32. Wenhao Chen and Dr. Sharad Sharma, "Kinect and Management Features in the Virtual Reality Classroom", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 20-22, 2014.
33. Jeff Ruffin Jr. and Dr. Sharad Sharma, "Educational Module: Programming Loops and Conditions Using Virtual Reality", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 20-22, 2014.
34. Emmanuel Ossueta and Dr. Sharad Sharma, "Gaming Instructional Module for Array and Objects Using Virtual Reality", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 20-22, 2014.
35. Titus Thomas and Dr. Sharad Sharma, "3D Simulated Emergency Subway Evacuation", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013. **[Won Second Prize in the oral section under category: Computer Sciences and Information Systems]**
36. Stephen Otunba and Dr. Sharad Sharma, "Teaching Traffic Safety Through an Immersive Multiuser Environment", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013.
37. Antoine Lathon and Dr. Sharad Sharma, "Course Curriculum Module for Multidimensional Array and Linked List using Gaming Approach", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013.
38. Jeff Ruffin Jr. and Dr. Sharad Sharma, "Virtual Reality Classroom", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013.
39. Kim Ta and Dr. Sharad Sharma, "Gaming Approach to Learn Arrays In C++", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013.

40. Usha Govindaraju and Dr. Sharad Sharma, "Augmented Reality as a Tool for Learning and Safety", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Washington DC, February 28th - March 2nd, 2013.
41. Usha Govindaraju, Sailaja Adusumilli and Dr. Sharad Sharma, "M-Evac: An Indoor Augmented Reality Mobile Evacuation System", Grant Expo, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 10, 2013
42. Stephen Otunba and Dr. Sharad Sharma, "Virtual City: Teaching Traffic Safety through an Immersive Multiuser Environment", Grant Expo, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 10, 2013
43. Jeff Ruffin and Dr. Sharad Sharma, "Virtual Reality Classroom as a Constructivist Approach", Grant Expo, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 10, 2013
44. Stephen Otunba and Dr. Sharad Sharma, "Evacuation Simulation in a Multiuser Virtual Reality Environment", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Atlanta, GA, February 23-25 2012.
45. Aaron Boothe and Dr. Sharad Sharma, "Emergency Airplane Evacuation Using Game Development Toolkit", Oral Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Atlanta, GA, February 23-25 2012. **[Won Second Prize in the oral section under category: Computer Sciences and Information Systems and Computer Engineering]**
46. Aaron Boothe, Mike Tice, Zachary Springer, and Dr. Sharad Sharma, "Multi-User Environment in VR for Evacuation Scenarios Using Gaming Metaphor", Poster Presentation, at the Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM), hosted by AAAS, EHR and NSF, Atlanta, GA, February 23-25 2012.
47. Jihad Ashkar and Dr. Sharad Sharma, "Information extraction and pattern matching for the voice field medical card in a battlefield environment", Poster presentation, 2011 Emerging Researchers National (ERN) conference in STEM, Feb 24-26, Washington DC, 2011.
48. Jihad Ashkar and Dr. Sharad Sharma, "Voice Field Medical Card for a Battlefield Environment", Juxtopia Urban Learning Technology (JULT) 2010 conference, December 8th, Morgan State University, Baltimore, Maryland, USA, 2010.
49. Jihad Ashkar and Dr. Sharad Sharma, Presented VOICE FMC project at the Community Activities Center at Fort Detrick (U.S. Army Medical Research and Materiel Command (MRMC)) as part of the TEDCO MRASC Symposium on Tuesday, October 26, 2010.
50. Student presentation in annual CIBAC meeting at University of Maryland Eastern Shore in year 2010.

M.S and Ph.D Thesis

PhD Dissertation Advisor:

- 1) Dr. Kola Ogunlana titled "*Modeling and simulation of agent behavior in a goal finding application for evacuation*" (*Defended Fall 2015*) **[Won Best Dissertation of the year Award in 2016, Total 10 dissertation candidates]**
- 2) Dr. Timothy Oladuni, titled "*Hedonic Pricing Theory: A Machine Learning Investigation*", (*Defended Fall 2017*) **[Won deans award, doctoral research of the year award, 2018.]**
- 3) Dr. Sarika Rajeev, titled "*Game Theme based instructional modules based on usability and likability*", (*defended September 2018*)

M.S Thesis Advisor:

- 1) Supriya Lohgaonkar, titled "*Online Assessment System with Offline Capabilities*", Department of Computer Science, Bowie State University, defended on April 2010.

PhD Dissertation Committee member

- 1) Dr. Juman Byun, The George Washington University, defended on 27th May, 2009
- 2) Dr. Felix N. Njeh, BSU (Fall 2014)
- 3) Dr. Loubna Dali, BSU (Fall 2017).

Current Students

1. **Doctoral Students:** James Stigall (candidate, defense date: fall 2020), Lamar Taylor (candidate), Kayode Onalapo, Sri Teja Bodempudi, Swetha Sree.
2. **Masters Students:** Veda Dasari, Revanth Bhusan, Archana Patel
3. **Undergraduate Students:** Phillip Devreaux, Stephon Mackey, Emmanuel Ossuetta, Alicia Miller.

Synergistic activities

Dr. Sharad Sharma currently focused on two fields that complement each other excellently: **Software Engineering (SE)** and **Virtual Reality (VR)**. The research projects in the above two fields are a result of my interest in **Artificial Intelligence (AI)** and **Data Science (DS)**. He specializes in modeling human behavior during evacuations due to emergency and terror events. He is merging Data Science and Virtual Reality for Advanced Visualization. He is involved in developing new data and visualization methods for

course of action planning, visualization, training, and assessment. He has developed AvatarSim, a simulation model and tool in Java that can simulate building evacuation, battlefield scenario and airplane evacuation scenarios. Dr. Sharma is the Director of the Virtual Reality Laboratory at the Bowie State University. The VR lab focuses on using VR, AR, MR, XR as tool for learning, training, and education. The current projects in the Virtual Reality Laboratory focus on performing virtual evacuation drills in Multi-User Virtual Reality (MUVR) environments such as school bus, airplane, subway, night club, building, megacity, etc. He has acquired several research grants from various funding agencies such a Department of Defense, Department of Homeland Security, Army Research Laboratory, and the National Science Foundation. He was also the Program Chair, for the (International Conference on Software Engineering and Data Engineering) SEDE 2017, SEDE 2018, and SEDE 2019.

Dr. Sharma has recently won the "USM (University System of Maryland) **Board of Regents' Faculty Award**" for **Excellence in Research and Scholarship in 2018**. This award is given to a nominee from USM's 11 institutions, who shows evidence of exceptional scholarship and research that extends or deepens the bounds of knowledge and are recognized as innovations in the nominee's discipline. He has also won "**Outstanding Researcher of the year Award**" in college of Arts and Science at Bowie State University in year **2013** and **2011**. He has won "**Outstanding Faculty of the year Award**" in year **2012**. He has also won the "**Outstanding Publication Award**" at the Bowie State University in the year **2010** and "**Outstanding Young Faculty Award**" at the Bowie State University in the year **2009**. Dr. Sharma has also received the *Outstanding Graduate/Professional Student Leadership Award* for the year 2005-2006 to recognize his yearlong achievements at Wayne State University.

University Services

- **Team Lead:** Organized **VR Lab Booth** to showcase Virtual Reality research at BSU in **USA Science Festival for STEM** at Walter E. Washington Convention Center, Washington DC on April 7 & 8, **2018**.
- Organized **VR Lab Booth** at Patriots Technology Summit at Bowie State University, May 12th **2018**.
- Organized **VR Lab Booth** to showcase Virtual Reality research at BSU in **USA Science Festival for STEM** at Walter E. Washington Convention Center, Washington DC on April 16 & 17, **2016**.
- **Organized VR Lab Booth** at 19th Annual Youth Summit on Technology, Bowie State University, Bowie, MD, April 30, **2016**.
- Conducted *3D Modeling, Animation, and Gaming workshops* at the CPU summer camp for high school and middle school students at Bowie State University in Year 2009, 2010, 2011, and 2012, 2013, 2014, 2015, 2016, 2017, and **2018**.
- Organized **Virtual Reality Laboratory booth** at the International Festival at Largo Town Center, Largo, MD on July 12-13th, **2014**.
- **Organized Virtual Reality Booth** (with Dean and colleagues at BSU) to showcase Virtual Reality research at BSU at **USA Science & Engineering Festival** at the Walter E. Washington Convention Center in Washington, D.C on April 26 & 27, **2014**.
- Department Webmaster for Computer Science Department website, 2009- 2013.
- Webmaster for College of Arts and Science (CAS) website, 2011- 2013.
- Department Search committee to hire System Administrator, 2007.
- Department member of X-seed (supercomputer) committee.
- Department member of committee for ABET: Systems group II committee, Graphics group committee, Software development group committee.
- Advisory Board member, Center of Excellence in Teaching and Learning (CETL), Bowie State University, February 2012-present.
- Virtual Reality Laboratory research presentation to USM Board of Regents meeting at Bowie State University, 2012
- Chair of IEEE VIPRG Software/ System Architecture Sub-Committee.
- **Organized Virtual Reality Booth** (with Dean and colleagues at BSU) to showcase Virtual Reality research at BSU at *USA Science & Engineering Festival at the Walter E. Washington Convention Center in Washington, D.C* on April 27-29, **2012**
- Attended number (10+) of advisory board meetings for Cyber Watch at Prince George Community College.

- College Committee for CAS Awards for year 2010-2011, 2011-2012, and 2012-2013.
- Represented the Computer Science Department in the Graduate Open house at Bowie State University, 2014-2017.

Professional Services

- **Program Chair** the Twenty Eighth International Conference on Software Engineering and Data Engineering (SEDE-2019), CA (International Society for Computers and their Applications), at Sheraton San Diego Hotel & Marina, San Diego, CA, USA, September 30 - October 2, **2019**.
- **Program Chair**, for the Twenty Seventh International Conference on *Software Engineering and Data Engineering (SEDE-2018)*, ISCA (International Society for Computers and their Applications), Holiday Inn Downtown, New Orleans, LA, USA, October 8-10, **2018**.
- **Program Chair**, for the Twenty Sixth International Conference on Software Engineering and Data Engineering (SEDE-2017), ISCA (International Society for Computers and their Applications), Hilton San Diego Airport/Harbor Island, San Diego, CA, USA, October 2-4, **2017**.
- **TPC Co-Chair of IEEE-RDCAPE-2017** conference, **2nd** International Conference on Recent Developments in Control, Automation & Power Engineering, Noida, India, 26-27 October, **2017**.
- **Program Committee Chair**, 2013 International Symposium on Intelligent System Engineering (ISISE 2013), Abu Dhabi, UAE, November 15-16, 2013.
- **Technical Program Chair**, International Conference on Mobility in Computing (ICMiC13), Kerala, India, December 17-19, 2013
- **Conference General Chair** of “2012 8th International Conference on MEMS NANO, and Smart Systems (ICMENS 2012) November 3-4, 2012.
- *Invited Talks*
 - Research talk titled “VRI and ARI Modules for Teaching and Training” in the Three-day Online Faculty Development Program on “E-Learning and Recent Trends in Electrical Engineering” at Amity University, Uttar Pradesh, Noida, INDIA, via Microsoft Teams, held from 20th - 22nd May, **2020**.
 - Research talk at Virtual Reality Lab, Bowie State University, visit for RISE Academy Fellows, Requested by Ms. Debbie O'Banion, College of Education, (On behalf of Dr. William Drakeford) 10AM to 12PM, July 26, 2018.
 - Talk on "Virtual reality environments for emergency response, training, and decision making" at STIx, (Science Technology & Innovation Exchange), event organized by **DOD Basic Research Office at Arlington, VA**, Thursday August 24, **2017**.
 - Talk on “Modeling and Simulation of Multi-User Virtual Reality Environments for Emergency Evacuation Drills with Dr. Sharad Sharma from Bowie State University”, CINO Working Groups, **Internet2 Collaborative Innovation Community**, June 2, **2017**. [[Recording from 6/2/17 CINC UP Call](#)]
 - Talk on "Virtual and Augmented reality: Applications in emergency fire evacuation for training and education", for **Safety Event at the Smithsonian**, at The Smithsonian National Museum of African Art. 950 Independence Ave. SW Washington, DC, November 18, **2016**.
 - Invited talk on “Virtual and Augmented Reality: Applications in Emergency Evacuation and Decision Making for Training and Education” at **NASA The Goddard Space Flight Center (GSFC)**, Software Engineering Division, Building 23, Greenbelt, Maryland, U.S, Thursday June 25, **2015**.
 - Invited talk on “Modeling and Simulation of Human Behavior in Aircraft Evacuations using Multi-Agent System and Virtual Reality Environment” at University of Maryland Baltimore County (UMBC) on 18th April **2014**.
 - Invited talk on “Virtual Reality Laboratory Research, at Research-In-Progress Conference at Faculty Institute, Bowie State University on January 17, 2013.
 - Invited Demo Speaker on title “Multi-agent Modeling and Simulation of Human Behavior in Aircraft Evacuations” at the IEEE, International Workshop on Collaboration in Virtual Environments (CoVE -2012), as part of The 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), Denver, Colorado, USA, May 21-25, 2012.

- Invited demo presentation to USM (University System of Maryland) Board of Regents on Virtual Reality Laboratory research in special collection room, Thurgood Marshal Library at Bowie State University, September 28, 2012.
- *Judge*
 - Judge in the USM COVID App Challenge Competition by The USM (University System of Maryland) COVID Research & Innovation Task Force, July 2, 2020.
 - 12th Annual Grant Expo and Research day, Office of Research and Sponsored Programs (ORSP), Bowie State University, April 17, 2019.
 - Judge at the 5th Innovative STEM Conference and Junior Science and Humanities Symposium, March 8-11, 2012.
 - Judge at 4th Innovative STEM Conference, 21th Junior Science and Humanities Symposium, March 17-20, 2011.
 - Judge at the Emerging Researchers National (ERN) conference in STEM, Feb 24-26, Washington DC, 2011.
 - Judge at 3rd Innovative STEM Conference, 20th Junior Science and Humanities Symposium, March 11-13, 2010.
 - Judge at 2nd Innovative STEM Conference, 19th Junior Science and Humanities Symposium, April 3-5, 2009.
 - Judge at 1st Innovative STEM Conference, 18th Junior Science and Humanities Symposium, April 3-5, 2008.
 - *MIE Judge* at the BSU (Bowie State University) research showcase, 2008.
 - Judge for Emerging Researchers National (ERN) conference in STEM (organized by AAAS and NSF) in Washington DC, February 24-26, 2011.
- *NSF Panel Review Board*
 - *NSF-SBIR/STTR program (ENG/IIP Program), 2020*
 - *NSF- HBCU-UP Targeted Infusion Projects (TIP) 2020*
 - *NSF- Decision, Risk, and Management Sciences program (DDRIG) -2019*
 - *NSF- Future of Work at the Human-Technology Frontier (FW-HTF)-2018*
 - *DTRA Basic Research review panel -2018 (DOD)*
 - *NSF-GRFP, CS Panel 2018*
 - *NSF-EAPSI ENG Panel, 2016, NSF EAPSI CISE Panel, 2015*
 - *NSF-AISL panel, 2015, NSF-CNIC SBE and EHR – Panel 2014, NSF EAPSI Panel 2014, 2013*
- *Session Chair for Conferences*
 - Session *Chair* the Twenty Eighth International Conference on Software Engineering and Data Engineering (SEDE-2019), CA (International Society for Computers and their Applications), at Sheraton San Diego Hotel & Marina, San Diego, CA, USA, September 30 - October 2, 2019.
 - Session Chair, Twenty Seventh International Conference on *Software Engineering and Data Engineering (SEDE-2018)*, ISCA (International Society for Computers and their Applications), Holiday Inn Downtown, New Orleans, LA, USA, October 8-10, 2018.
 - Session Chair, International Conference on Intelligent Traffic and Transportation (ICITT 2017), Zurich, Switzerland, September 1-3, 2017.
 - Session Chair, 24th International Conference on Software Engineering and Data Engineering, SEDE, San Diego, California, USA, USA on October 12-14, 2015
 - Session Chair, IEEE International Conference on Collaboration Technologies and Systems (CTS 2015), Atlanta, Georgia, USA, June 01-05, 2015.
 - Paper Session Chair, IEEE SoutheastCon 2013, Jacksonville, Florida, April 4th - 8th, 2013.
 - Paper Session Chair, IEEE, International Workshop on Collaboration in Virtual Environments (CoVE -2012), as part of The 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), Denver, Colorado, USA, May 21-25, 2012.
 - Paper Session Chair, *IEEE SoutheastCon Conference*, March 18, Charlotte, NC, 2010.
 - Associate Chair and Special Session Chair, 19th International Conference on Software Engineering and Data Engineering, San Francisco, California, USA, June 16-18, 2010.
 - Paper Session Chair, International Conference on Software Engineering and Data Engineering, SEDE, June 22- 24, Las Vegas, Nevada, USA, 2009.
- *Program Committee for conferences*

- Program Committee member, The 35th International Conference on Computers and Their Applications (CATA 2020), San Francisco Airport, California, March 23-25, 2020.
- Track Committee, 16th International Conference on Information Technology: New Generations, ITNG 2019, Las Vegas, Nevada, USA, April 1-3, 2019.
- Program Committee member, ISCA 33rd International Conference on Computers and Their Applications CATA-2018, Flamingo Hotel, Las Vegas, Nevada, March 19-21, 2018.
- Program Committee member, International Program Committee member, The 4th International Workshop on Collaboration and Virtual Environments (CoVE-2016) at the IEEE International Conference on Collaboration Technologies and Systems (CTS 2016), Orlando, Florida, USA, October 31 - November 04, 2016.
- Program Committee member, ISCA 25th International Conference on Software Engineering and Data Engineering (SEDE-2016), Marriott Tech Center, Denver, USA, Sep. 26-28, 2016.
- Program Committee member, ISCA 30th International Conference on Computers and Their Applications (CATA 2016), Las Vegas, NV, USA on April 4-6, 2016.
- International Program Committee member, IEEE Third International Workshop on Collaboration and Virtual Environments (CoVE-2015) as part of International Conference on Collaboration Technologies and Systems (CTS 2015), Atlanta, Georgia, USA, June 1-5, 2015.
- Program Committee member, 24th International Conference on Software Engineering and Data Engineering, SEDE, San Diego, California, USA, USA on October 12-14, 2015
- International Advisory Committee member, 2015 International Conference on Information and Computer Technology (ICICT 2015), Dubai, UAE, November 12-13, 2015.
- Program Committee member, 23rd International Conference on Software Engineering and Data Engineering, SEDE, New Orleans, Louisiana, USA on October 13-15, 2014.
- Program committee member, International Workshop on Big Data Analytics for Predictive Organization and Big Transformations, ASE/ IEEE International Conference on Big Data Science and Computing, Stanford, CA, USA, May 27 - May 31, 2014.
- Program Committee member, 22nd International Conference on Software Engineering and Data Engineering, SEDE, Los Angeles, California, USA, September 25-27, 2013.
- Program Committee, 21st *International Conference on Software Engineering and Data Engineering*, SEDE, Los Angeles, California, USA, June 27-29, 2012.
- Program Committee, 21st *International Conference on Software Engineering and Data Engineering*, SEDE, Los Angeles, California, USA, June 27-29, 2012.
- Program Committee, IEEE, International Workshop on Collaboration in Virtual Environments (CoVE -2012), as part of The 2012 International Conference on Collaboration Technologies and Systems (CTS 2012), Denver, Colorado, USA, May 21-25, 2012.
- Paper Session Chair, *International Conference on Software Engineering and Data Engineering*, SEDE, June 20- 22, Las Vegas, Nevada, USA, 2011.
- Program Committee, *International Conference on Software Engineering and Data Engineering*, SEDE, June 20- 22, Las Vegas, Nevada, USA, 2011.
- Program Committee, 20th *International Conference on Software Engineering and Data Engineering*, SEDE, Las Vegas, USA, June 20-22, 2011.
- Program Committee, 19th *International Conference on Software Engineering and Data Engineering*, SEDE, San Francisco, California, USA, June 16-18, 2010.
- International Program Committee for 8thACIS International Conference on Software Engineering Research, Management and Applications, SERA2010.
- International Program Committee for 7thACIS *International Conference on Software Engineering Research, Management and Applications*, SERA 2009.
- International Program Committee, The 2008 International Conference on Artificial Intelligence (ICAI'08), Las Vegas, USA, July 14-17, 2008.
- International Program Committee, The 2008 International Conference on Genetic and Evolutionary Methods (GEM'08), Las Vegas, USA, July 14-17, 2008.
- International Program Committee, The 2008 International Conference on Software Engineering Research and Practice (SERP'08), Las Vegas, USA, July 14-17, 2008.
- International Program Committee, The 2008 International Conference on Modeling, Simulation and Visualization Methods (MSV'08), July 14-17, 2008, Las Vegas, USA, 2008.

- International Program Committee, International Conference on *Computer Graphics and Virtual Reality* (CGVR'08), Las Vegas, USA, July 14-17, 2008.
- Attended the U.S. Army Research Laboratory (ARL) Open Campus Open House
 - At Aberdeen proving grounds, MD, October 18-19, 2017.
 - Adelphi Laboratory Center located in Adelphi, MD, November 16 & 17, 2016.
 - At Aberdeen proving grounds, MD, November 3 & 4, 2015.
- Associate Chair and Special Session Chair, 19th International Conference on Software Engineering and Data Engineering, San Francisco, California, USA, June 16-18, 2010.
- Development of nine new Courses at Graduate and Undergraduate level
 - Developed and taught new undergraduate course in Software Engineering (COSC 465)
 - Developed new undergraduate course in Advanced Software Engineering (COSC 475)
 - Developed and taught new graduate course on Software Engineering I (COSC 565)
 - Developed and taught new graduate course on Software Engineering II (COSC 665)
 - Developed and taught new undergraduate course in Virtual Reality (COSC 477).
 - Developed and taught new graduate course in Virtual Reality & its App. (COSC 729)
 - Developed and taught new graduate course on Advanced Virtual Reality (COSC 829)
 - Developed and taught new undergraduate course on gaming (COSC 209: Gaming II)
 - Developed a new undergraduate course on gaming (COSC 409: Gaming IV)
- Collaborated with colleagues to develop a **new gaming track** in computer science program at BSU.
- Collaborated with colleagues to develop **Data Science specialization** in M.S. in computer science program at BSU.
- Developed and proposed a new **M.S. in Software Engineering program** in Computer Science department at BSU.

Awards Won

- **USM (University System of Maryland) Board of Regents' Faculty Award** for **Excellence in Research and Scholarship**, April 2018.
- TMCf-ARL **Summer Faculty Research Fellowship** selected by ARL research directors to collaborate for 8 weeks of summer at Aberdeen, MD in 2016.
- Won **Outstanding Researcher Award** for the year 2013 at Bowie State University. Awarded 30 April, 2013.
- Won **Outstanding Faculty Award** for the year 2012 in College of Arts and Science at Bowie State University. Awarded 27 April, 2012
- Won **Outstanding Researcher Award** for the year 2011 in College of Arts and Science at Bowie State University. Awarded 8 April, 2011
- Won **Outstanding Publication Award** for the year 2010 in College of Arts and Science at Bowie State University. Awarded 30 April, 2010
- Won **Outstanding Young Faculty Award** for the year 2009 in College of Arts and Science at Bowie State University. Awarded 17 April, 2009
- University VIP Grants Award for hard work and dedication, submitting the most grant proposals for the year 2008- 2009 academic year at Bowie State University.
- University VIP Grants Award for grant writing effort for the year 2008 at Bowie State University. Awarded 24 April, 2008.

Grants Received [Over 3 Million dollars]

- **PI- NSF:** "FW-HTF-P: Immersive Virtual Reality Instructional Modules for Response to Active Shooter Events", funded by the National Science Foundation, Division: DRL, NSF 20-515 Future of Work at the Human-Technology Frontier: Core Research, Award Number: 2026412, Award Period: 09/01/2020 to 08/31/2021. Award Amount: \$132,352. [**Area: Virtual Reality, Artificial Intelligence**]
- **PI (BSU) - NSF Grant:** Harnessing the Data Revolution (HDR) Data Science Corps (DSC): Collaborative Research: Creating and Integrating Data Science Corps to Improve the Quality of Life in Urban Areas, Award Period: 1 October 2019 through 30 Sep 2022, Award #1923986, PI:

Aryya Gangopadhyay (UMBC), Total Award Amount: \$1,198,769.00 [**Data Science, Data Visualization, Artificial Intelligence, Virtual Reality**]

- **PI (BSU) - NSF Grant:** RAPID: Collaborative Research: VAPOC: Visualization, Analysis and Prediction of COVID-19, Award Period: June 1, 2020 through May 31, 2021, Award # 2032344, Award Amount: \$40,000 (Total Amount: 100,000.00) [**Data Science, Data Visualization, Artificial Intelligence, Virtual Reality**]
- **PI - ARL Grant:** Avatars to represent human behavior in a Collaborative Virtual Environment, under The **U.S. Army Research Laboratory (ARL)**, *Award: W911NF-17-S-0003*, funded by ARL-HRED division under Assessment and Analysis campaign. Award Period: 09/05/2018 to 08/28/2020, Award Amount: \$85,000.00. [**Area: Artificial Intelligence, Behavioral modeling, Virtual Reality, & Data Visualization**]
- **PI - ARL Grant:** Megacity: Avatars in Collaborative Virtual Environment (CVE) approach for Decision Making, under The **U.S. Army Research Laboratory (ARL)**, *Award: W911NF-17-2-0133*, funded by ARL-HRED division under Assessment and Analysis campaign. Award Period: 08/04/2017 to 08/03/2018, Award Amount: \$85,000.00. [**Area: Collaborative Virtual Reality, Artificial Intelligence, & Data Visualization**]
- **Army Research Laboratory Faculty Fellowship** at The U.S. Army Research Laboratory (ARL) at Aberdeen Proving Grounds (**APG**), MD, under SLAD (Survivability/Lethality Analysis Directorate) division at The Human Research and Engineering Directorate (HRED), 8 weeks in summer 2016., Award Period: May-July 2016, Award Amount: \$20,000.
- **Space Act Agreement** (SAA5-17-02-N25423) between NASA GSFC Applied Engineering and Technology Directorate and Bowie State University (VR Lab) to collaborate on the development of Virtual Reality/Augmented Reality (VR/AR) technologies. This agreement involves collaboration on multiple VR and AR pilots (and their follow-ons) that target engineering, operations, and sciences, Technical Points of Contact: Thomas Grubb (NASA) & Dr. Sharad Sharma (BSU), Period: 2/27/2018 - 2/26/2021. [**Area: Virtual Reality & Augmented Reality**]
- **PI- NSF:** "A Problem-Based Learning Approach to Teach Gaming and Development of **Gaming Instructional Modules** to Enhance Student Learning in Lower Level Core Courses", funded by the National Science Foundation. Award Number: HRD-1238784, Award Period: 10/01/2012 to 10/01/2015. Award Amount: \$299,500. [**Area: Gaming, Virtual Reality, Artificial Intelligence**]
- **PI- NSF:** "Increasing Expertise of Minority Students by Development of a **Virtual and Augmented Reality Laboratory for Research and Education** at Bowie State University", funded by the National Science Foundation. Award Number: HRD-1137541, Award Period: 09/15/2011 to 08/31/2014. Award Amount: \$299,489. [**Area: Virtual Reality & Augmented Reality**]
- **PI- DHS:** DHS Scientific Leadership Award, "Developing Homeland Security Expertise to Support **Emergency Evacuation Research** (HS-SEER)", Award Number: 2011-ST-062-000050, Award Period 09/01/2011 to 08/31/ 2015. Award Amount: \$249, 901.29. [**Area: Artificial Intelligence, Evacuation, Emergency Response and Decision making**]
- **NASA:** "Modeling and Simulation of Emergency Behavior in Virtual Reality for Airport Safety" funded by NASA Langley, under CIBAC grant. Award Period: Academic Year: 2011-2012.
- **PI- TEDCO/ USAMRMC** BAA-08-1 grant for "*Voice FMC: A speech recognition, speech synthesis, and natural language processing system*", Year: Dec. 2009 - Dec. 2010 (AMOUNT: \$55,000.00). [**Area: Artificial Intelligence, Machine Learning, Pattern Recognition, Software Engineering**]
- **BETTER ,** "*Virtual Reality as a tool for learning and education*", (Year: 2008, 2009, 2010), Department mini grant (AMOUNT: \$15,000.00 /year).
- **NASA: CIBAC ,** "*Simulation and Modeling for Aircraft Safety*", (Year: 2008, 2009, 2010), Department mini grant. (AMOUNT:1-month summer, 25%-time release).
- Thurgood marshal college funds, TMCf/DOE HBCU technology graduate student award, "*Online Data Backup System*", Year: 2009-2010. (AMOUNT: \$5,000.00).
- **NSF Cyberwatch sub-contract,** "*CUTS: (CyberWATCH Underground System)A Proposal for a Cooperative Testbed Network to Facilitate Information Assurance Education and Cooperation*", Year: Summer 2009. (AMOUNT: \$19,286.81).

Certificates Received

- Certificate of Completion for successful completion of Quality Matters - Dedicated Online Workshop: Helping Learners Track Their Progress (WCHLTP), on Tuesday, 9:00 – 10:45am, August 4, **2020**.
- Certificate of Completion for successful completion of Quality Matters - Aligning Instructional Materials, Activities & Tools with Objectives (WCAMATO), on Wednesday, 9:00 – 10:45am, August 5, **2020**.
- Certificate of Completion for successful completion of Quality Matters - Dedicated Online Workshop: Active Learning Strategies (WCSA), on Thursday, 9:00 – 11:00am, August 6, **2020**.
- Certificate of Completion for successful completion of Quality Matters - Dedicated Online Workshop: How the Online Classroom is Different Training Type: WCHOC, on Friday, 9:00 – 11:00am, August 7, **2020**.
- Certificate of Completion for successful completion of Quality Matters - Dedicated Online Workshop: Using the Flipped Approach for Synchronous Online Learning, on Monday, 9:00 – 11:00am, August 10, **2020**.
- Certificate of Appreciation for delivering the talk titled “VRI and ARI Modules for Teaching And Training” in the Three-day online Faculty Development Program on “E-Learning and Recent Trends in Electrical Engineering” at AMITY UNIVERSITY, Uttar Pradesh, Noida, INDIA, held from 20th - 22nd May, 2020.
- Certificate of Participation in the Secure Coding Workshop, BSU, Aug 26-27, 2013.
- Certificate of Participation in Office of research and Sponsored Programs, Hands-on Proposal development workshop, Bowie State University, January 15, 2009.
- Certificate of Participation in Office of research and Sponsored Programs, A Real Time, Hands-on search for grants SPIN software training workshop, Bowie State University, August 24, 2010.
- Certificate of Participation in Office of research and Sponsored Programs/Title III office, One-day symposium on grants development institute, Bowie State University, January 26, 2010.
- Certificate of Completion in Office of research and Sponsored Programs, Professional Grant Development Workshop, Bowie State University, June 15-17, 2011.

Professional Development

- Attended 3-week workshop on LOTTO I (Learning Online, teaching with Technology Online): Teaching Your Face-to-Face Course Online, through Bowie State University, July 20 – Friday, August 7, **2020**.
- Attended 4-week workshop on “Unity for Educators: A Beginner's Guide”, via zoom Every Tuesday from July 14th to August 4, **2020**.
- Attended two-day xR Symposium at APL's The Kossiakoff Center, 11100 Johns Hopkins Road, Laurel, MD, 20723 on July 23 and 24, **2019**.
- Attended The IMAGINE: A Better World, A Global Education Conference, hosted by Amazon Web Services (AWS), at The Conference Center at the Washington State Convention Center in Seattle, WA, July 10 - Thursday, July 11, **2019**.
- Attended Rail-x-Tech meeting: technology driving the future of U.S. freight rail, at Kennedy Caucus Room, Russell Senate Office Building (SR-325), 2 Constitution Avenue NE, Washington, DC 20001, May 7, **2019**.
- Attended workshop focused on Strategic Leader communications to technical teams concerning the use of Artificial Intelligence and Machine Learning (AIML) for Critical Infrastructure Protection/Resilience (CIP/R), at the National Defense University (NDU), Washington, DC 20319-5066 on Thursday, 25 April **2019**.
- Attended round table meeting on programs and approaches for data science at the PhD level by NASEM (The National Academies of Science, Engineering and Medicine), at National academy of Science building, Washington DC on **June 13, 2018**.
- Attended invited “Science Meets Congress” event on “AI robotics and your health” in the Rayburn building on Capitol Hill, Washington DC on June 14, **2018**.
- Attended QEM/NSF Outreach Forum on Building Research and Education Capacity in Computer and Information Science and Engineering (CISE) at Historically Black Colleges and Universities

(HBCUs) conducted at the Hilton Baltimore BWI Airport, 1739 West Nursery Road, Linthicum Heights, MD, July 27 – July 28, **2018**.

- Attended Computer Science Faculty Innovation Summit workshop, at San Francisco, CA (Google, Facebook, Netapp, Goldman Sachs) on October 26-October 28, **2017**.
- Attended Workshop: on Application Builder and COMSOI server as a Tool for Teaching Students Workshop. Location: United States Naval Academy, Michelson Hall - Room 300, 572M Holloway Rd Annapolis, Annapolis, Maryland 21402 on June 6th **2017**.
- Attended *NASA, JPL, California Institute of Technology*, meeting for outreach initiative collaboration, at Los Angeles, CA on August 2-3, **2017**.
- Attended Maryland Research and education Network/Internet2 research and education day, at the University of Baltimore, Angelos Law Center, October 14, **2016**.
Attended workshop on the “New Design for Learning: games and Gamification”, Thursday, 8AM to 4PM, College Park Marriot Hotel and Conference room, September 29, 2016.
- NSF-Advanced grant writing workshop at NSF headquarters at Arlington, VA in Feb. 22-23, 2010.
- NSF Workshop for CREST-HBCU-RISE proposals at Delaware State University, February 12, 2008. As a department, we submitted a proposal for the same in 2008, 2009, and 2010.
- NSF- QEM/CARRER workshop in Washington, DC, on May 30 – 31, 2008.
- NSF-QEM/NSF MRI Proposal Development Workshop, Embassy Suites, Albuquerque, NM, September 28-29, 2007
- An orientation to course redesign titled “Maryland Course Redesign workshop” at UMBC Tech Center on October 8, 2010. The Workshop was organized by Stan Jakubik, Asst. Vice Chancellor, University System of Maryland.
- Two-day grant writing NSF workshop at the Holiday Inn Arlington near NSF headquarters on in Arlington, VA, February 22-23, 2010.

Teaching Experience

COSC 900-906: Dissertation	COSC 477: Virtual Reality and its Principles
COSC 898: Selected Topics: Software Environments	COSC 465: Software Engineering
COSC 829: Advanced Virtual Reality Systems	CTEC 396 Java Programming
COSC 729: Virtual Reality and its Applications	COSC 209: Gaming II
COSC 665: Software Engineering II	CTEC 222 Unix Operating System
COSC 565: Software Engineering I	COSC 112 Computer Science I
COSC 590: Selected Topics: Virtual Reality	COSC 110 Computer Literacy and Applications
COSC 503: Software Design and Development I	

Collaboration and other activities

1) Dr. Ashok Agrawala, (*Research mentor*) Professor of Computer Science at the University of Maryland, College Park, MD. **2)** Dr. Jayfus Doswell President/CEO Juxtopia, LLC. **3)** Thomas G. Grubb (GSFC-5830), **NASA**, Ground Software Systems Branch, Greenbelt, MD 20771, **4)** Jacqueline J. Lemoigne-Stewart (GSFC-5800), **NASA** Goddard Senior Fellow, Assistant Chief for Technology, Greenbelt, MD 20771, **5)** Dr. Amitabh Varshney, Dean of the College of Computer, Mathematical and Natural Sciences, and Professor of Computer Science at the University of Maryland at College Park, **6)** Dr. Edbert B. Hsu, Director of Training, Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR), Associate Professor, Department of Emergency Medicine, Johns Hopkins University, **7)** Dr. Peter J. Grazaitis, U.S. Army Research Laboratory's (**ARL**) Human Research and Engineering Directorate (HRED), APG, MD, **8)** Dr. David R. Scribner, U.S. Army Research Laboratory's HRED division, APG, MD, **9)** Dr. Nilanjan Banerjee, Associate Professor of Computer Science and Electrical Engineering, University of Maryland, Baltimore County, **10)** Dr. Chintan Patel, Associate Professor of Computer Science and Electrical Engineering, University of Maryland, Baltimore County.

Membership of Professional Societies

1. Senior Member of IEEE, the Institute of Electrical and Electronics Engineers.
2. Member of ACM, Association for Computing Machinery.
3. Member of ISCA, International Society of Computer and their Applications.
4. Member of IEEE Computer Society.
5. Senior Member of International Association of Computer Science and Information Technology