Dr. Sharad Sharma

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Professional Preparation

1. PhD, Computer Engineering, Wayne State University, Detroit, MI, 2006
2. M.S., Architecture, University of Michigan, Ann Arbor, MI, 2003
3. B.Arch. Birla Institute of Technology, India, 1999

Professional Appointments

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

Recent Selected Publications

1. **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], **2017**.
2. **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**.
3. 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**.
4. 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**.
5. 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**.
6. 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**.
7. 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**.
8. 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**.
9. **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**.
10. **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**.
11. 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**.

12. Oladunni, T., **Sharma, S**, "Spatial Dependency and Hedonic Housing Regression Model", 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**.
13. Oladunni, T., **Sharma, S**, "Hedonic Housing Theory – A Machine Learning Investigation", 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**.
14. 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]
15. **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**.

Synergistic activities

Dr. Sharad Sharma is the ***Director of the*** *Virtual Reality Laboratory* at the Bowie State University. Recently in 2016, he has worked on a faculty research fellowship in the Human Research and Engineering Directorate (HRED) division in Army Research Laboratory (ARL) at Aberdeen Proving Ground (APG), Aberdeen, Maryland. He is involved in developing new data and visualization methods for course of action planning, visualization, training, and assessment. He is also exploring socio-cultural issues in Collaborative Virtual Environments (CVE) for emergency response and decision making in dense urban environments. His research specialization includes modeling and simulation of emergency evacuation scenarios, multi-agent systems, virtual reality, augmented reality, gaming, fuzzy logic, data science, and neural network.

He has recently won the "2018 USM (University System of Maryland) **Regents' Faculty Award**" for **Excellence in Scholarship and Research**. He has also won "***Outstanding Faculty of the year Award***" in year 2012 and "***Outstanding Researcher of the year Award***" at Bowie State University in year 2013 and 2011. 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.

Current Students

1. **Doctoral Students:** James Stigall, Kayode Onaolapo, Sarika Rajeev, Lamar Taylor.
2. **Masters Students:** Veda Dasari, Naveen Kumar, Pranay Rajeev, Suraj Kumar
3. **Undergraduate Students:** Diliorah Arah, Phillip Devreaux, Emmanuel Ossuetta

Past Dissertation Students (Advisor)

- Dr. Kolawole Ogunlana (2015) and Dr. Timothy Oladuni (2017)

PhD Dissertation Committee *member*

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

Professional Services

- **Program Chair,** for the Twenty Seventh International Conference on Software Engineering and Data Engineering, 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, ISCA (International Society for Computers and their Applications), Hilton San Diego Airport/Harbor Island, San Diego, CA, USA, October 2-4, 2017.
- Program Committee Chair, 2013 International Symposium on Intelligent System Engineering (ISISE 2013), Abu Dhabi, UAE, November 15-16, 2013.
- **Conference General Chair** of "2012 8th International Conference on MEMS NANO, and Smart Systems (ICMENS 2012) November 3-4, 2012.
- 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**.

- 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**.
- *Invited Talks*
    - 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**.

Awards Won

- 2018 **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

- **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.

- **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.
- **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 10/01/2017 (no cost extension). Award Amount: $299,500.
- **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.
- **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
- **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).
- 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).

Collaboration and other activities

1) Dr. Harpreet Singh, Professor, (PhD. Advisor) Department of Electrical and Computer Engineering, Wayne State University, Detroit, MI. 2) Dr. Atul Prakash, Professor, Department of Computer Science, University of Michigan, Ann Arbor, MI. 3) Dr. Ashok Agrawala*, (Research mentor)* Professor of Computer Science at the University of Maryland, College Park, MD.4) Dr. Pepe Siy, ECE, Wayne State University, 5) Dr. Abhilash Pandya, ECE, Wayne State University, 6) Dr. Jie yan, CS, Bowie State University.7) Dr. Jayfus Doswell President/CEO Juxtopia, LLC. 8) Jacqueline J.Lemoigne-stewart (GSFC-5800), NASA Goddard Senior Fellow, Assistant Chief for Technology, Greenbelt, MD. 9) Dr. Jock O. Grynovicki, chief of Complex Ground Systems & Operations Branch of the Army Research Laboratory (ARL) at APG, MD.

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 (IACSIT).