

MAHMUD SHAHRIAR HOSSAIN

Assistant Professor

Department of Computer Science

The University of Texas at El Paso

500 West University Avenue, El Paso, Texas 79968

Email: mhossain@utep.edu

Office Phone: (915) 747-6340

Web: <http://www.cs.utep.edu/mhossain/>

RESEARCH INTERESTS

Big data analytics, data mining and machine learning, computational biology, artificial intelligence, text analytics, distributed and parallel computing.

EDUCATION

- Ph.D. in Computer Science and Applications June 2012
Department of Computer Science, Virginia Tech, Blacksburg, VA 24061, USA.
CGPA: 4.0/4.0
- M. S. in Computer Science Spring 2008
Department of Computer Science, Montana State University, Bozeman, MT 59717, USA.
CGPA: 4.0/4.0
- B. Sc. (Engineering) in Computer Science & Engineering 2003
Shah Jalal University of Science & Technology, Sylhet, Bangladesh.
CGPA: 3.91/4.0 (With “*Honors*” ranking top of the university)

AWARDS

- **Best student paper award.** ACM SIGKDD International Workshop on Urban Computing (UrbComp 2012), Paper title: “Coordinated Clustering Algorithms to Support Charging Infrastructure Design for Electric Vehicles”, Pages: 126-133.
- **VAST 2011 mini-challenge award.** IEEE Symposium on Visual Analytics Science and Technology (VAST’11), Providence, RI, October 2011.
- **Best MS Graduate Researcher Award** from the Dept. of Computer Science, Montana State University, 2008.
- **Chancellor’s gold medal** from the Government of Bangladesh for achievements as a student of the School of Applied Sciences during bachelor’s degree, 2006.
- **Vice Chancellor’s gold medal** from the Government of Bangladesh for achievements as a student of the Dept. of Computer Science and Engineering during bachelor’s degree, 2006.
- **Prime Minister’s gold medal** from University Grants Commission of Bangladesh for achievements during bachelor’s degree, 2005.
- B.Sc. (Engineering) degree is awarded with “*Honors*”.
- **Undergraduate Scholarship** from Shah Jalal University of Science and Technology, Bangladesh.

JOB EXPERIENCE

- Assistant Professor, Department of Computer Science** Fall 2013–till the present time
University of Texas at El Paso, El Paso, TX 79968
- Assistant Professor, Department of Mathematics and Computer Science** Fall 2012–Summer 2013
Virginia State University, Petersburg, VA 23806, USA.
- Research Scientist, Commonwealth Center for Advanced Manufacturing (CCAM)** Fall 2012–Summer 2013
Disputanta, VA 23842, USA.
- Lecturer, Dept. of Computer Science & Engineering** February 2004 – December 2005
Shah Jalal University of Science & Technology, Sylhet, Bangladesh.
- Lecturer (Guest), PGD–IT** November 2004 – March 2005
Institute of Post Graduate Diploma in Information Technology, Shah Jalal University of Science & Technology, Sylhet, Bangladesh.
- Lecturer, Dept. of Computer Science & Engineering** September 2003 – March 2004
Asian University of Bangladesh, Dhaka, Bangladesh.

Journal Papers:

1. M. Momtazpour, P. Butler, N. Ramakrishnan, **M. S. Hossain**, M. C. Bozchalui, R. Sharma. Charging and Storage Infrastructure Design for Electric Vehicles. *ACM Transactions on Intelligent Systems and Technology (ACM TIST)*, 5(3), Article No. 42, September 2014. Impact factor: 9.39.
2. **M. S. Hossain**, M. Marwah, A. Shah, L. T. Watson, and N. Ramakrishnan. AutoLCA: A Framework for Sustainable Redesign and Assessment of Products. *ACM Transactions on Intelligent Systems and Technology (ACM TIST)*, 5(2), Article No. 34, April 2014. Impact factor: 9.39.
3. A. Jalal-Kamali, **M. S. Hossain**, V. Kreinovich. How to Understand Connections Based on Big Data: From Cliques to Flexible Granules. *Information Granularity, Big Data, and Computational Intelligence Studies in Big Data*. 8: 63-87, July 2015.
4. R. D. Phillips, **M. S. Hossain**, L. T. Watson, R. H. Wynne, and N. Ramakrishnan. Enrichment Procedures for Soft Clusters: a Statistical Test and its Applications. *Computer Modeling in Engineering and Science*, 97(2): 175-197, 2014.
5. A. Endert, **M. S. Hossain**, N. Ramakrishnan, C. North, P. Fiaux, C. Andrews. The Human is the Loop: New Directions for Visual Analytics. *Journal of Intelligent Information Systems*, Springer Link, January 2014, DOI: 10.1007/s10844-014-0304-9.
6. **M. S. Hossain**, N. Ramakrishnan, I. Davidson, and L. T. Watson. How to "Alternatize" a Clustering Algorithm. *Data Mining and Knowledge Discovery Journal*, Springer, 27(2):193–224, September 2013. Impact factor: 1.54.
7. **M. S. Hossain**, J. Gresock, Y. Edmonds, R. Helm, M. Potts, and N. Ramakrishnan. Connecting the Dots between PubMed Abstracts. *PLoS ONE Journal*, 7(1): e29509, January 2012. Impact factor: 4.41.
8. **M. S. Hossain**, M. Akbar, and N. F. Polys. Narratives in the Network: Interactive Methods for Mining Cell Signaling Networks. *Journal of Computational Biology*, 19(9): 1043-1059, September 2012. Impact factor: 1.7.
9. **M. S. Hossain**, P. K. R. Ojili, C. Grimm, R. Müller, L. T. Watson, and N. Ramakrishnan. Scatter/Gather Clustering: Flexibly Incorporating User Feedback to Steer Clustering Results. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 18(12): 2829-2838, December 2012. Impact factor: 1.92.
10. J. Jee, L. C. Klippel, **M. S. Hossain**, N. Ramakrishnan, and B. Mishra. Discovering the Ebb and Flow of Ideas from Text Corpora. *IEEE Computer*, 45(2): 73-77, February 2012.
11. N. Ramakrishnan, M. Marwah, A. Shah, D. Patnaik, **M. S. Hossain**, N. Sundaravaradan, and C. Patel. Data Mining Solutions for Sustainability Problems. *IEEE Potentials*, 31(6): 28-34, December 2012.
12. **M. S. Hossain**, M. M. Fuad, and M. M. A. Joarder. Agent Based Processing of Global Evaluation Function. *Journal of Electronics and Computer Science*, Jahangirnagar University Press, Bangladesh, 6: 35-45, June 2005.
13. M. T. H. Malik, M. M. A. Joarder, and **M. S. Hossain**. Multi-split Domain ERA Model for Solving Constraint Satisfaction Problems, *Journal of the Bangladesh Electronic Society*, 8(1), June 2008.
14. **M. S. Hossain**, M. M. Fuad, and M. M. A. Joarder. Homogenization for Divisible and Non-Divisible Problems across a Local Area Network. *Dhaka University Journal of Science*, 56(1), January 2008.

Conference and Workshop Papers:

15. D. R. Easterling, **M. S. Hossain**, L. T. Watson, N. Ramakrishnan. Probability-one Homotopy Maps for Tracking Constrained Clustering Solutions. *High Performance Computing Symposium (HPC'13)*, International Society for Computer Simulation, Article No. 17, 2013.
16. L. Bradel, J. Z. Self, A. Endert, **M. S. Hossain**, C. North, N. Ramakrishnan. How Analysts Cognitively "Connect the Dots". *IEEE Intelligence and Security Informatics Conference (ISI'13)*, Pages: 24-26, 2013.
17. **M. S. Hossain**, P. Butler, A. P. Boedihardjo, and N. Ramakrishnan. Storytelling in Entity Networks to Support Intelligence Analysts. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'12)*, Pages: 1375-1383, 2012.
18. M. Momtazpour, P. Butler, **M. S. Hossain**, M. C. Bozchalui, N. Ramakrishnan, and R. Sharma. Coordinated Clustering Algorithms to Support Charging Infrastructure Design for Electric Vehicles. *ACM SIGKDD International Workshop on Urban Computing (UrbComp 2012)*, Pages: 126-133, 2012. (Received the best student paper award.)
19. H. Wu, M. Mampaey, N. Tatti, J. Vreeken, **M. S. Hossain**, and N. Ramakrishnan. Where Do I Start? Algorithmic Strategies to Guide Intelligence Analysts. *ACM SIGKDD Workshop on Intelligence and Security Informatics (ISI-KDD 2012)*, Pages: 3:1-3:8, 2012.
20. **M. S. Hossain**, P. K. R. Ojili, C. Grimm, R. Müller, L. T. Watson, and N. Ramakrishnan. Scatter/Gather Clustering: Flexibly Incorporating User Feedback to Steer Clustering Results. *IEEE Conference on Visual Analytics Science and Technology (VAST)*, October 2012.
21. **M. S. Hossain**, C. Andrews, N. Ramakrishnan, and C. North. Helping Intelligence Analysts Make Connections. *AAAI'11, Workshop on Scalable Integration of Analytics and Visualization (WS-11-17)*, Pages: 22-31, 2011.

22. C. Andrews, **M. S. Hossain**, S. Gad, N. Ramakrishnan, and C. North. Analyst's Workspace: Protecting Vastopolis - VAST 2011 mini-challenge 3 award: Novel Use of Large Screen Workspace to Support Analysis. IEEE Symposium on Visual Analytics Science and Technology (VAST'11), 2011.
23. **M. S. Hossain**, S. Tadepalli, L. T. Watson, I. Davidson, R. F. Helm, and N. Ramakrishnan. Unifying Dependent Clustering and Disparate Clustering for Non-homogeneous Data. ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'10), Washington, DC, Pages: 593-602, 2010.
24. R. A. Angryk, **M. S. Hossain**, and B. Norick. Semantically-Guided Clustering of Text Documents via Frequent Subgraphs Discovery. Proceedings of the 19th International Conference on Foundations of Intelligent Systems, ISMIS 2011, Poland, Pages: 407-417, 2011.
25. **M. S. Hossain**. An enhanced Index Structure for a Digital Library Search Engine. International Conference on Information and Knowledge Engineering (IKE'11), USA, Pages: 211-215, 2011.
26. **M. S. Hossain**, M. Akbar, and N. F. Polys. Storytelling and Clustering for Cellular Signaling Pathways. International Conference on Information and Knowledge Engineering (IKE'09), USA, Pages: 109-115, 2009.
27. **M. S. Hossain**, and R. Angryk. GDClust: A Graph-Based Document Clustering Technique. IEEE International Conference on Data Mining (ICDM'07), IEEE ICDM Workshop on Mining Graphs and Complex Structures, USA, Pages: 417-422, 2007.
28. **M. S. Hossain**, M. Akbar, and J. D. Starkey. Inexpensive Construction of a 3D Face Model from Stereo Images. The 10th International Conference on Computer and Information Technology (IEEE Co-sponsored ICCIT '07), Bangladesh, 2007.
29. **M. S. Hossain**, M. Akbar, and R. Angryk. Sense Based Organization of Descriptive Data. IEEE International Conference on Systems, Man and Cybernetics, Canada, Pages: 468-473, 2007.
30. **M. S. Hossain**, and R. Angryk. Heuristic Algorithm for Interpretation of Non-Atomic Categorical Attributes in Similarity-based Fuzzy Databases - Scalability Evaluation. Proceedings of North American Fuzzy Information Processing Society (NAFIPS) Conference, USA, Pages: 233-238, 2007.
31. **M. S. Hossain**, and R. A. Angryk. Algorithm for Defuzzification of Multi-valued Taxonomic Attributes in Similarity-based Fuzzy Relational Databases. Proceedings of the IFSA 2007 World Congress (IFSA '07), Mexico, June 18-21, 2007, published in Theoretical Advances and Applications of Fuzzy Logic and Soft Computing, O. Castillo, P. Melin, O.M. Ross, R.S. Cruz, W. Pedrycz, J. Kacprzyk (Eds.) in Series: Advances in Soft Computing (ASC), Vol. 42, Springer-Verlag, 2007, XXI, 895 p., Pages: 23-35.
32. **M. S. Hossain**, M. M. Fuad, D. Deb, K. M. N. H. Khan, and M. M. A. Joarder. Homogenization: A Mechanism for Distributed Processing across a Local Area Network. Workshop on Communication Abstractions for Distributed Systems in the ECOOP 2004 Conference, Norway, 2004.
33. **M. S. Hossain**, M. M. Fuad, D. Deb, K. M. N. H. Khan, and M. M. A. Joarder. Load Balancing in a Networked Environment through Homogenization. International Conference on Cybernetics and Information Technologies, Orlando, USA, Pages: 99-104, 2004.
34. M. M. Fuad, D. Deb, and **M. S. Hossain**. A Trainable Fuzzy Spam Detection System. The 7th International Conference on Computer and Information Technology, Bangladesh, December 2004.
35. **M. S. Hossain**, K. M. N. H. Khan, M. M. Fuad, and D. Deb. Triangular Dynamic Architecture for Distributed Computing in a LAN Environment. The 6th International Conference on Computer and Information Technology, Bangladesh, 2003, Pages: 481-486.

Cited Technical Reports:

36. **M. S. Hossain**, M. Narayan, and N. Ramakrishnan. Efficiently Discovering Hammock Paths from Induced Similarity Networks. Cornell University Library, CoRR, abs/1002.3195, 2010.

SYNERGISTIC ACTIVITIES

- Session Speaker, Session title: The Promise of Big Data in Interdisciplinary Science, 2014 SACNAS National Conference "Creativity, Vision, & Drive: Toward Full Representation in STEM", Organized by: Society for Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS), Los Angeles, CA, October 16-18, 2014.
- Incorporated IBM contest, The Great Mind Challenge: Watson Technical Edition 2014, in a Machine Learning course in Spring 2014. One team with members from the class won the second place in this nation-wide competition.
- Member, Program Committee of the AAAI Conference on Artificial Intelligence (AAAI-15), Special Track on Computational Sustainability and AI, 2015.
- Member, Program Committee of the International Conference on Data Mining (ICDM'14), 2014.
- Member, Program Committee of the International Conference on Progress in Informatics and Computing (PIC'14), 2014, Shanghai, China.
- Member, Program Committee of the 3rd MultiClust Workshop at SIAM Data Mining (SDM 2012).

- Reviewer of the ACM International Conference on Information and Knowledge Management (CIKM 2013).
- Reviewer of the IEEE Conference on Visual Analytics Science and Technology (IEEE VAST 2013).
- Reviewer of the IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE).
- Reviewer of Machine Learning Journal (Springer).
- Reviewer of Data & Knowledge Engineering (DKE) Journal
- Reviewer of Knowledge and Information Systems-An International Journal (Springer KAIS).
- Reviewer of Transactions on Dependable and Secure Computing.
- Reviewer of Journal of Zhejiang University Science C (Computers & Electronics).
- Reviewer of International Conference on Cybernetics and Information Technologies, Systems & Applications (CITSA'11).
- Reviewer of International Conference on Cybernetics and Information Technologies, Systems & Applications (CITSA'10).