Md Mustafizur Rahman

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Department of Computer Science
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Research Interests
Data mining, information retrieval, and machine learning, with a particular focus on computational user behavior modeling

EDUCATION

Ph.D in Computer Science
University of Virginia, VA 22903   Fall, 2014 - present
Advisor - Dr. Hongning Wang

Master of Science in Computer Science & Engineering
Bangladesh University of Engineering & Technology, Dhaka   GPA 3.83   August 2013
Thesis - Forecasting Time Series - An Ensemble based approach
Advisor - Dr. Md. Monirul Islam

Bachelor of Science in Computer Science & Engineering
Bangladesh University of Engineering & Technology, Dhaka   GPA 3.95   February 2011
Thesis- Detecting Cuts in Wireless Sensor Network
Advisor - Dr. Masud Hasan

RESEARCH EXPERIENCE

Graduate Research Assistant   December, 2014 - present
Department of Computer Science
University of Virginia
Advisor - Dr. Hongning Wang
Topic - Computational User Behavior Modelling
- Implemented several probabilistic topic models including 2-topic mixture model, probabilistic latent semantic analysis (PLSA), hidden topic markov model (HTMM), logistic regression in HTMM etc.
- Developing a novel scheme to label unstructured corpus data using some prior knowledge from the domain

Graduate Researcher   April 2012 - August 2013
Department of Computer Science & Engineering
Bangladesh University of Engineering & Technology
Advisor - Dr. Md. Monirul Islam
Topic - Ensemble based approach for time series forecasting
- Developed a novel layered ensemble architecture for time series forecasting

SELECTED PUBLICATIONS
Book Chapter
- Abdus Salam Azad, Md. Kamrul Hasan, M. Arif Imtiazur Rahman, **Md. Mustafizur Rahman**, and Nashid Shahriar, Exploring the Behavior and Changing Trends of Rainfall and Temperature Using

Statistical Computing Techniques. Computational Intelligence Techniques in Earth and Environmental Sciences, Springer, DOI 10.1007/978-94-0:pages: 53-78, 2014

Journal
- **Md. Mustafizur Rahman**, S. M. Ferdous, Syed Ishtiaque Ahmed, and Anika Anwar, "Speech Development of Autistic Children by Interactive Computer Games," *Interactive Technology and Smart Education (ITSE), Emerald*, vol. 8, no. 4, pp. 208 - 223, 2011.[Online].
Available: http://dx.doi.org/10.1108/17415651111189450

Conference
- **Md. Mustafizur Rahman**, S. K. K. Santu, Md. Monirul Islam, and Kazuyuki Murase, "Forecasting Time Series - A Layered Ensemble Architecture," in the proceedings of International Joint Conference on Neural Networks (IJCNN 2014), IEEE, Beijing, China, 2014. [Online]. Available: http://dx.doi.org/10.1109/IJCNN.2014.6889682
- S. K. K. Santu, **Md. Mustafizur Rahman**, Md. Monirul Islam, and Kazuyuki Murase, "Towards better generalization in Pittsburgh Learning Classifier Systems," in the proceedings of IEEE World Congress on Computational Intelligence (CEC 2014), IEEE, Beijing, China, 2014. [Online]. Available:http://dx.doi.org/10.1109/CEC.2014.6900388
- Asif Salekin, **Md. Mustafizur Rahman** and Shihab Hasan Chowdhury, "Pattern matching in time series using combination of neural network and rule based approach," in the proceedings of The 7th International Conference on Electrical & Computer Engineering (ICECE 2012) Dhaka, Bangladesh, December 2012. [Online]. Available: http://dx.doi.org/10.1109/ICECE.2012.6471591
- Asif Salekin, **Md. Mustafizur Rahman**, and Raihanul Islam, "Composite Pattern Matching in Time Series," in the proceedings of The 15th International Conference on Computer & Information Technology (ICCIT 2012), Chittagong, Bangladesh, 2012. [Online].
Available: http://dx.doi.org/10.1109/ICCITechn.2012.6509784
- Raihanul Islam, **Md. Mustafizur Rahman**, Asif Salekin, Shihab Hasan Chowdhury, and Samiul Alam Anik, "A Novel Clustering-Based Ensemble Classification Model for Block Learning," in the proceedings of The 2nd The International Conference on Pattern Recognition Applications and Methods (ICPRAM 2013), Barcelona, Spain, 2013.
- S. M. Ferdous, Anindya Das, M. Sohel Rahman and **Md. Mustafizur Rahman**, "An Ant Colony Optimization approach to solve the Minimum String Cover Problem," in the proceedings of IEEE ICIEV 2012 endorsed by International Association for Pattern Recognition (IAPR), Dhaka, Bangladesh, May 2012.[Online]. Available: http://dx.doi.org/10.1109/ICIEV.2012.6317422
- Nashid Shahriar, Mahfuza Sharmin, Reaz Ahmed, **Md. Mustafizur Rahman**, Raouf Boutaba and Bertrand Mathieu, "Diurnal Availability for Peer-to-Peer Systems," in the proceedings of IEEE CCNC, Las Vegas, Nevada, USA, January 2012, IEEE Communications Society Press. [Online].
Available: http://dx.doi.org/10.1109/CCNC.2012.6181140
- K.M.A. Solaiman, **Md. Mustafizur Rahman**, and Nashid Shahriar, "AVRA Bangladesh collection, analysis & visualization of road accident data in Bangladesh," in the proceedings of International Conference on Informatics, Electronics & Vision (ICIEV), IEEE, Dhaka, Bangladesh, pages 1-6, 2013. [Online]. Available: http://dx.doi.org/10.1109/ICIEV.2013.6572632

SELECTED PROJECTS
Graduate Software Projects
- **Personalized Job Matching** - Developed multiple crawler for crawling job-postings from Google, Facebook, Microsoft and IBM, then indexed 1GB of crawled data using Lucene. Finally we designed a rank model and implemented the model using the Lucence index and developed a interface to show the search results for a given search query. Language and framework used in this projects are Java, Lucene and JSON

Undergraduate Software Projects
- **Social Bookmarking Website** - Developed a website for online bookmarking/voting for other web-sites. The web-site was developed in PHP and MySQL server. CSS and HTML have been used for user interface
- **Automated System for Buying House** - We designed the use-case model, collaboration and class diagram, sequence diagram and input-output of a buying house system using UML
- **Photo Viewer** - A simple photo viewing software using JAVA which has the ability to view wide range of picture format(i.e.: jpg, jpeg, tiff, bmp etc.)
- **Data Link Layer Implementation** - Implemented the sliding window protocol of Data Link Layer (one of the OSI layers) using Java
- **Kernel of an Operating System** - Developed the kernel, and the shell of an operating system as part of a larger operating system (OS) using educational OS named NACHOS. The kernel had architecture similar to UNIX and was developed using C language

Undergraduate Hardware Projects
- **4-bit Digital Computer** - Designed and developed a digital computer capable of executing 28 instructions from the Intel 80x86 processor family. Its main features include shared bus, micro programmed control unit and separate data and instruction RAM
- **Modified Booth's Multiplier** - Designed and implemented modified version of booths multiplier which was capable of multiplying ten bits multiplication in 2's complement form

TEACHING EXPERIENCE

Graduate Teaching Assistant   Fall, 2014 - present
Department of Computer Science
University of Virginia

- CS 3102 (Theory of Computation): Spring 2015, Course Instructor: Prof. Gabriel Robins
- CS 3102 (Theory of Computation): Fall 2014, Course Instructor: Prof. Worthy Martin
- CS 4810 (Computer Graphics): Fall 2014 Course Instructor: Prof. Jason Lawrence

Assistant Professor   May 2014 - August 2014
Department of Computer Science & Engineering
Bangladesh University of Engineering & Technology

- CSE 307 (Software Engineering & Information System Design)

Lecturer   March 2011 - April 2014
Department of Computer Science & Engineering
Bangladesh University of Engineering & Technology

- CSE 105 (Structured Programming Language)
- CSE 201 (Object Oriented Programming Language)

TECHNICAL SKILLS
- Programming language: C, C++, Visual C++, Java, Assembly Language (Intel 80x86, MIPS), UNIX shell scripting, PL/SQL, OpenGL, MATLAB, LaTeX, TeX
- Web Programming: HTML, CSS, ASP.NET, PHP, JSP, Javascript
- Modeling: UML, E-R Diagram
- Database Management System: Oracle, MySQL, JSON, Microsoft Access
- Simulation: Circuit Maker, PSPICE, Quartus
- Operating Systems: Microsoft Windows, Linux

HONORS

- Full tuition assistantship, University of Virginia
- Full scholarship to attend workshop on research frontier in Computing from School of Computing (SoC), National University of Singapore (NUS), Singapore.   May 2012
- Awarded with scholarship from Institute of International Education, New York, USA sponsored by AIG Foundation   2006–2011
- Deans list award for academic excellences from Bangladesh University of Engineering & Technology 2006–2011
- University scholarship for academic excellences from Bangladesh University of Engineering & Technology   2006–2011
- Award of excellence from Nazrul Islam Hall, Bangladesh University of Engineering & Technology 2011

REFERENCES

Prof. Hongning Wang
Assistant Professor
Department of Computer Science
University of Virginia