Md. Anindya Tahsin Prodhan

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Dept. of Computer Science
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Research Interest

Distributed Computing, High Performance Computing, Big Data Analytics, Cyber Physical Systems

Education

Graduate Student (PhD) at the Department of Computer Science
Expected Graduation Month/Year: Aug, 2018
University of Virginia School of Engineering and Applied Science

Master of Computer Science
University of Virginia School of Engineering and Applied Science (CGPA: 3.942/4.00)

M. Sc. Engineering in Computer Science and Engineering
Bangladesh University of Engineering and Technology (CGPA: 4.00/4.00)

B.Sc. Engineering in Computer Science and Engineering
Bangladesh University of Engineering and Technology (CGPA: 3.88/4.00)

Work Experience

Reliability-Engineer – Technical Intern — Feb 2015 – Jul 2015
Corporate Quality Network (CQN)
Intel Corporation

Research Assistantship — May 2013 - Present
Advisor: Andrew Grimshaw
Department of Computer Science, University of Virginia

Teaching / Research Assistantship — August 2011 - May 2013
Advisor: Kamin Whitehouse
Department of Computer Science, University of Virginia

Lecturer / Assistant Professor — April 2008 – August 2011
Department of Computer Science and Engineering
Bangladesh University of Engineering and Technology

Research Experience

- Working with Professor Dr. Andrew Grimshaw on market based grid computing.
- Worked on energy efficient smart buildings with Dr. Kamin Whitehouse, Assistant Prof, Department of CS, University of Virginia

Graduate Courses

Parallel Computing, Information Retrieval, Machine Learning, Operating Systems, Computer Architecture, Statistics, Cyber Physical Systems, Theory of Computation, Compilers, and Ubiquitous Computing.

Computer Skills

- **Programming Language:** Java, C/C++, C#, Python, JSP, ASP, JavaScript, Matlab
- **Parallel Programming:** MPICH, Open MPI, Cuda, OpenMP
- **Database:** MySQL, SQLServer

Projects

- **Mapping User Comments back to Newspaper Articles:** We used *information retrieval* techniques to map readers' comments on newspaper article back to the article itself in order to automate editors pick and rank the comments based on relevance of the comments. We used a language model to formalize our problem and Apache lucene was used to rank the documents (comments). The code was developed in JAVA and it is available in github (https://github.com/anindyatahsin/IR).
- **JSDL++:** We have implemented an upgrade on Job Submission Description Language (JSDL) an extensible XML specification from the Global Grid Forum for the description of simple tasks to non-

interactive computer execution systems, called JSDL++ (JSDL version 2.0). JSDL++ can specify multiple job descriptions on one JSDL document which is highly useful in a heterogeneous distributed environment where different end points requires different executables and different set up requirements. In such case, one JSDL document will suffice to make the job executable on all these environments.

- **Efficient Water Heater:** In the project we designed an efficient tankless water heating system which aims to reduce the energy consumption of a traditional tankless water heater by reducing the stand-by energy and pipe loss of the traditional heaters.
- **Garments Management Information System:** In this project an automated inventory and production system for a garments factory was implemented. In order to complete the project we followed all the formal steps of *software engineering* like *requirement analysis, requirement modeling, specifying control* etc. And the software was implemented in Java Platform with oracle in Back end.
- **Implementation of Unix File System & Memory Management System:** Here an efficient and *flexible* file system for *UNIX operating system* was implemented. In this project all basic data structures of UNIX file system like *inode, super block, boot block* etc were used. The system was implemented using UNIX c language. Also a *Dynamic Memory Manager* was implemented for *Unix System*. The system was capable of *allocating* and *releasing* variable size block and *splitting* and *merging* of distributed block dynamically.

Selected Publications

- Andrew Grimshaw, **Md Anindya Prodhan**, Alexander Thomas, Craig Stewart and Richard Knepper, "Campus Compute Co-operative (CCC): A Service Oriented Cloud Federation." In the IEEE International Conference on e-Science, October 23-27, 2016, Baltimore, Maryland, USA.
- **Md Anindya Prodhan**, Andrew Grimshaw, "Market-Based On DemandScheduling (MBoDS) in a Shared Virtual Compute Facility." In XSEDE 2015. July 26-30, 2015. St. Louis, MI, USA.
- Yong Sun, **Anindya Prodhan**, Erin Griffiths, Kamin Whitehouse, "How hot is piping hot?: lower energy consumption with smarter hot water delivery." in IPSN 2015. April 15-17, 2015. Seattle, WA, USA.
- Andrew Frye, Michel Goraczko, Jie Liu, **Anindya Prodhan**, and Kamin Whitehouse, "Circulo: Saving Energy with Just-In-Time Hot Water Recirculation", in BuildSys'13, November 13-14, 2013. Rome, Italy.
- **Md. Anindya Prodhan** and Kamin Whitehouse, "Hot Water DJ: Saving Energy by Pre-mixing Hot Water", in BuildSys'12. Toronto, Canada. November 6, 2012.
- **Md. Anindya Tahsin Prodhan**, Rajkumar Das, Md. Humayun Kabir, and Gholamali C. Shoja, "TTL Based Routing in Opportunistic Networks", Journal of Network and Computer Applications, May, 2011.
- Asif Iqbal, A. B. M. Musa, **Md. Anindya Tahsin**, Md. Abdus Sattar, Md. Monirul Islam, and K. Murase, "A Novel Algorithm for Translation, Rotation and Scale Invariant Character Recognition", in proceedings of 4th International Conference on Soft Computing and Intelligent Systems and 9th International Symposium on advanced Intelligent Systems (SCIS & ISIS 2008) at Nagoya University, Nagoya, Japan.

Patents

- Kamin Whitehouse (50%) and **Md Anindya Prodhan (50%),** *"Smart Water Heater System, Method and Computer Readable Media",* US Patent 20,150,346,740, 2015

Awards

- **Graduate Student Award for Outstanding Teaching (Honorable mention)**, UVa department of Computer Science, 2016-2017.
- Our Smart Water Heater was selected for the **DOE's Max Tech and Beyond design competition** for ultralow-energy-use appliances and equipment. July, 2013.
- **Full Tuition Scholarship**: University of Virginia, Graduate studies program (2011 - Present).
- **Dean's List** for excellent performance in an academic year in 2nd and 3rd year.

Reference

Available upon request