Md Shaifur **Rahman**

PhD student, Department of Computer Science, Stony Brook University, NY

Contact

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http://shaifur.com

Languages

English (Fluent)
Bengali (Native)

Expertise

Wireless and Cellular Networks,
Software Development

Objective

Summer internship position in computer programming and/or research projects

Experience

June, 2014 to present — **Research Assistant** — WINGS Lab, Dept. of CS, Stony Brook University
Researching the cost-effective switchable wireless back-hauls in cellular network

2013 – 2014 — **Teaching Assistant** — Dept. of CS, Stony Brook University
Held weekly recitation classes, graded exam scripts, held weekly office hours to supervise student projects
Courses Instructed:
- Software Engineering
- Foundation of Computer Science

2013 — **Assistant Professor** — Bangladesh University of Engineering & Technology
Courses Instructed:
- Structured Programming Language
- Theory of Computation

2009 – 2013 — **Lecturer** — Bangladesh University of Engineering & Technology
Courses Instructed:
- Artificial Intelligence
- VLSI Design
- Technical Writing & Presentation
- Labs: Computer Networks, Operating Systems, Database, Object-Oriented Programming

Education

2013 – 2018 — **PhD in Computer Science** — Stony Brook University
CGPA: 3.65/4.00
Research Area: Wireless and Cellular Networks

2010 – 2012 — **M.Sc. in Computer Science** — Bangladesh University of Engineering & Technology
CGPA: 3.75/4.00
Thesis Title: Path-planning Algorithm for Mobile Data Collector in Wireless Sensor Network

2004 – 2009 — **B.Sc. in Computer Science** — Bangladesh University of Engineering & Technology
CGPA: 3.92/4.00
Thesis Title: Application of Ant Colony Optimization in Energy-efficient Dynamic Source Routing in WSN

Publication

1. Md. Shaifur Rahman and Mahmuda Naznin, "Shortening the Tour-length of a Mobile Data Collector in the WSN by the Method of Linear Shortcut". In Proceedings of the 15^{th} *Asia-Pacific Web Conference (APWEB'13)*, 2013, Sydney, Australia (*LNCS, Springer*)

Current Research Project

Use of Free Space Optics (FSO) as an alternative to or an extension of wired or wireless backhauls connecting small-area femto-cells of cellular network- is a promising area of research. It can add flexibility by dynamic connections and cut down deployment cost by bypassing overprovisioning and reducing maintenance, yet it can provide high-bandwidth up to 10 Gbps per FSO-link. A fully functional prototype of a galvomotor-mounted FSO backhaul-link has already been tested indoor. However, outdoor deployment requires overcoming challenges such as line-of-sight problem, environmental hazards etc. We are currently researching a fully functional FSO backhaul link for deployment in the cellular network in the outdoor environment.

Supervisors:

- Samir R. Das, Professor, Dept. of CS, Stony Brook University
- Himanshu Gupta, Associate Professor, Dept. of CS, Stony Brook University

Graduate-level Courses

2013 – 2014 **PhD-level Courses** Stony Brook University
Asynchronous Systems, Artificial Intelligence, Analysis of Algorithms, Computational Biology, Discrete Math, Fundamentals of Computer Networks, Theory of Database Systems, Wireless & Mobile Networks

2009 – 2011 **M.Sc.-level Courses** Bangladesh University of Engineering & Technology
VLSI Layout Algorithms, Neural Networks, Bioinformatics Algorithms, Advanced Database Systems, Wireless Resource Management, Wireless Ad Hoc Networks

Graduate-level Projects

1. Efficient Pre-overlapper: a pre-processing step for the De Novo genome assembly of PacBio/ Nanopore short-reads of Bacteria *as part of the Computational Biology course*
2. Effect of Cache-size and Pending Interest Table (PIT) aggregation in Named Data Network (NDN) *as part of the Fundamentals of Computer Networks course*
3. Implementation of Chain Replication in Fault-tolerant Server Systems *as part of Asynchronous Systems course*
4. Spatial Analysis of WiFi Data *as part of the Wireless & Mobile Networks course*

Undergraduate-level Projects

1. *4-bit Microprocessor*: A microporcesor circuit based on 8086 family with features such as 28 instructions, memory protection, multiprogramming etc.
2. *NACHOS Virtual OS*: Multiprogramming, process management, console and elementary system calls implemented in bare-bone virtual operating system NACHOS.
3. *C Compiler*: Complete compiler for C programs using Lex and Yacc parser tools

Training, Consultancy & Organizing Skills

- Certified Trainer for Cisco CCNA Instructor's Program for Module 1, 2, 3 & 4 conducted by the Cisco Networking Academy, BUET
- Trainer for Advanced Networking Training Program (Cisco ICND-1 & ICND-2) for employees of IT department, Bangladesh Central Bank.
- Member of the Organizing Committee, Workshop on Algorithms & Computation- WALCOM-2010 & WALCOM-2012

Programming Skills

- **Programming Languages:** C/C++, Java, Python, Prolog, Assembly x86
- **Database Skill:** Oracle, MySQL
- **Web-development Tools:** HTML, PHP, JSP, JQuery
- **Simulation & Other Tools:** NS-2, NS-3, Wireshark, OMNET++, Matlab, PSPICE, Microwind, Verilog
- **Technical Writing Tools:** LaTeX , GnuPlot

Personal Information

- Date of Birth: September 17, 1986
- Gender: Male
- Citizenship: Bangladesh
- US VISA Status: F-1 (2013 – 2018)
- Availability: May, 2015 – September, 2015

Awards

- Special fellowship of CS department, Stony Brook University, 2013
- Dean's List Award for academic excellence in all levels of B.Sc
- University Merit Scholarship for academic excellence in all levels of B.Sc.

Co-curricular Activities

- Debating: Participated in Model United Nations Debate - 2002, National Debate Championship - 2000, 2001 & 2002
- AIDS Awareness Campaign: Participated in Countrywide AIDS Awareness Campaign for Youths 2002 – 2004, sponsored by UNICEF.

Reference

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