

Muhamad Foizul Islam Chowdhury

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Objective : *To work in the field of Computer Science & Engineering (Software Engineering, Developments of various tools, Digitalized control environment). Will use the skills obtained through my experience and academic background for the development of this evolving world.*

Education

- **Pursuing PhD in Computer Science** (On average 89% on courses) University of Western Ontario, London, Ontario Canada.
- **MSc in Computer Science, April-2009** (On average 95% on courses) University of Western Ontario, London, Ontario Canada.
- **B.Sc. in Computer science & Engineering, September-2004** (First Class **Second**, C.G.P.A. 3.73 out of 4.00) Khulna university of engineering & technology, Bangladesh.
- **Higher Secondary School Certificate, 1999** (First division) Murary Chand University College, Sylhet, Bangladesh.
- **Secondary School Certificate, 1997** (First division, star marks) Jafrabad High School, Sylhet, Bangladesh.

Work Experience:

Research Assistant: Doing research on “fast arithmetic using symbolic computation” in the Symbolic Computational Lab (Part of the Ontario Research Centre for Computer Algebra), Middlesex College, University of Western Ontario, Canada since December 2007.

Teaching Assistant: Department of Computer Science, University of Western Ontario, Canada, since January 2008.

TA for Winter 2008: CS033, Multimedia and communication course.

TA for Summer 2008: CS1027b, Computer Science Fundamental II and CS 3331a

Foundation of Computer Science.

TA for winter-2009, fall-2009, winter-2010, winter-2011: Computer Science 1032b – Information Systems and Design

TA for fall-2010 : Computer Science 3357b – Compute Networks

TA for fall-2011 : Computer Science 1037A – Computer Science Fundamentals II (C++)

Full time faculty member: Department of Computer science & Engineering, Leading University, Sylhet, Bangladesh from 25th January 2005 to 31st August 2007.

Computer Proficiency

1. Operating Systems: MS Windows 98/ XP Professional /2000 Professional/2000 Server/ Vista, Linux fedora-core.
2. Programming Languages: Assembly Language, **C, C++ (Excellent)**, Visual C++ (Moderate), Java (**Very good**), Perl shell programming (Basic Idea), Turbo PROLOG, Visual PROLOG (Basic Idea). **J2EE** (1 months experience).
3. Web scripting Languages: **Java script, ASP, JSP, PHP.**
4. Database Software: MS Access, SQL Server 7.0 & 2000, Oracle 8i, MySql.
5. Web Editor: FrontPage, Macromedia Flash 5.0
6. Internetworking Technologies: Dial up, TCP/IP,
7. Application Packages: Including but not limited to MS-Office, Adobe PhotoShop.

Publications:

Journal Papers:

1. “A Remark on the Computation of the Reliability of Consecutive-k-Out-of-n:F Systems”, **M.F.I. Chowdhury** and É. Schost. Submitted
2. “Homotopy methods for multiplication modulo triangular sets”, A. Bostan and **M.F.I. Chowdhury** and J. van der Hoeven and E. Schost. Accepted at journal of symbolic computation-Special issue for ISSAC 2008.
3. “An Efficient Approach for Increasing Security to Symmetric Data Encryption” **Md. Foizul Islam** with Muhammad Nazrul Islam, Md. Monir Hossain Mia, M.A. Matin. International Journal of Computer Science and Network Security. VOL.8 No.4, April 2008.

Conference Papers:

- 1) **M.F.I. Chowdhury**, M. Moreno Maza, W. Pan, É. Schost “Complexity and Performance Results for Non FFT-Based Univariate Polynomial Multiplication”, The International Conference on Applied Mathematics, Modeling and Computational Science (AMMCS-2011) July 25 - 29, 2011
- 2) **Muhammad F. I. Chowdhury** with Md. Monir, M.A. Matin, Md. Nazrul Islam, “Effect of security Increment to Symmetric Data Encryption through AES Methodology”, International Conference on Software

Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (*SNPD2008*). IEEE Computer Society. Pages 291-294.

- 3) **Md. Foizul Islam** with Md. Monir, M.A. Matin, Md. Nazrul Islam “A Symmetric Data Encryption Algorithm for Increasing Security”. Accepted in 4th IEEE International Conference on Wireless Communication, Networking and Mobile Computing (WiCom2008). Paper ID 40345
- 4) M Mostafizur Rahman*, Muhammad Foizul Islam Chowdhury “Examining Branch and Bound Strategy on Multiprocessor Task Scheduling” International Conference on Computer and Information Technology (ICIT-2009). Paper ID:-26

Posters

- a. Muhammad F.I. Chowdhury, Romain Lebreton “Root Lifting Techniques and Applications to List Decoding” Poster presented at ISSAC-2011, June 08-11, 2011, FCRC-2011 San Jose, CA, USA.
- b. **M.F.I. Chowdhury**, M. Moreno Maza, W. Pan, É. Schost “*Complexity and Performance Results for Non FFT-Based Univariate Polynomial Multiplication*”, Poster presented at ISSAC-2010, July 26-28, 2010, Munich, Germany

MSc. Thesis Work:

Title: “Multiplication modulo Triangular Sets”. (Experiment was done in C++ language on UNIX platform)

Summary: We study the cost of multiplication modulo triangular families of polynomials. Following previous work by Li, Moreno Maza and Schost, we propose an algorithm that relies on homotopy and fast evaluation-interpolation techniques. We obtain a quasi-linear time complexity for substantial families of examples, for which no such result was known before. Applications are given to notably addition of algebraic numbers in small characteristic.

B.Sc. Thesis Work

Title: “A study on network security using symmetric data encryption and increasing the security”. (Experiment was done in C language)

Summary: Protection of data during transmission or while in storage is necessary to maintain the confidentiality and integrity of the information. AES which uses 128 bits block size as well as 128 bits key sizes are using in symmetric encryption. In our work, an algorithm is proposed which is secured than Rijndael. The basic block size of the proposed system is 200 bits and the basic key size is also 200 bits. The security is enhanced while the efficiency decreased a bit.

Projects done:

1. Implementation of matrix inversion for **parallel** cores (Cilk)

2. Memory efficient Parallel implementation of **toomcook** polynomial multiplication (cilk++).
3. Improvement of current **aldor compiler** through replacing word data types by integers and pointer. (C/C++)

Projects done during B.Sc. Label

4. Banking System Management , Language: **Turbo C**
Summery: I have developed software to manage the requirements of a bank. The management includes all kinds of account systems such as saving account, current account, fixed deposits etc. Automatically update with any change in information such as opening or closing an account, changing in interest rates etc.
2. **Examination Schedule System for Khulna University of Engineering and Technology. Language: Borland C**
Summery: Beside class and examination scheduling for students this software helps teachers managing their duties during class or examination hours. It also helps proper scheduling for the students who have some lagging (Could not pass previous year or years).
3. Internet Programming Project (Developed a dynamic web sight).

Internship programs supervised:

- II) Wireless broadband communication of BTS communication, Bangladesh.
- III) A study on operating system of Prime bank, Bangladesh
- IV) Software Quality Assurance.
- V) CDMA based Mobile communication & switching technology.

Projects Supervised:

- I) Management of Leading University Admission section(VB, MS-SQL-2000)
- II) Network based shopping mall management system(JAVA (RMI), Access)
- III) Online library management (PHP, MySql)
- IV) Building mobile compatible Web services (J2ME, XML)
- V) Online management of leading university's course section (Php, Mysql)
- VI) Hotel & restaurant management (VB, Access)
- VII) Online ticket system(PHP, My-sql)

Key Courses at M.Sc level

Parallel Scientific Computing: Models, Algorithms and Implementation; Foundations of Computational Algebra, Algorithms for recurrences- differential equations and the automatic proof of identities; Reading course on Elliptic Curve Cryptography.

Key Courses at B.Sc level

Computer Basics and Programming, Object Oriented Programming, Data Structures and Algorithms, Artificial Intelligence, Digital Logic Design, Algorithm Analysis and Design, Microprocessor and Assembly Languages, Computer Architecture and Organization, Peripherals and Interfacing, Database Systems, Data Communications, Analysis and Design of Information Systems, Digital System design, VLSI Design, Compiler Design, Information Security and Control, Pattern Recognition and Machine Intelligence, Operating Systems, Computer Networks, Software Engineering, Computer Graphics, Theory of Computations, Discrete Mathematics, Numerical Methods, Applied Statistics, Digital Electronics, Analog electronics, Machine, Measurement.

Leadership & Managerial skill

- I) CR(Class Representative). Responsibility was to lead the class, to organize various functions, such as reception party of freshmen, cultural programs etc.
- II) Involved in various kinds of student's affair at Khulna university of Engineering and Technology. For example, as an active committee member of Hall section I have to mediate inter-hall problems.
- III) Research Committee member and steward of GTA Union, UWO, Canada.
- IV) Chief Steward of GTA Union, UWO, Canada

Language Proficiency: English, Bengali.

Honors

1. Primary scholarships awarded by education ministry of Bangladesh.
2. Technical Scholarship awarded by Khulna University of Engineering and Technology.
3. Western Graduate Research Scholarship awarded by University of Western Ontario

References

1. Éric Schost, Assistant professor and Canada Research Chair in Computer Algebra, Computer Science Department, University of Western Ontario. E-mail : eschost@uwo.ca