NAHIDA S CHOWDHURY

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Software Development Engineering | Distributed Computing | Big Data | Machine Learning

Enthusiastic Computer Science PhD student with strong understanding in Data structures and Algorithms. Passionate about creating and implementing high quality innovative solutions to complex problems.

EDUCATION

PURDUE SCHOOL OF SCIENCE, IUPUI, IN, UNITED STATES Expected Spring 2021
DOCTOR OF PHILOSOPHY IN COMPUTER AND INFORMATION SCIENCE (GPA 3.67/4.0)

KYUNGPOOK NATIONAL UNIVERSITY, DAEGU, SOUTH KOREA July 2012
MASTER'S IN COMPUTER SCIENCE AND ENGINEERING (GPA 4.01/4.5)

UNIVERSITY OF ASIA PACIFIC, DHAKA, BANGLADESH April 2008
BACHELOR'S IN COMPUTER SCIENCE AND ENGINEERING (GPA 3.91/4.0) (**Class Valedictorian**)

CORE COMPETENCIES

EXPERTISE
Distributed Systems, Scalability, Algorithms, Software Engineering, Big Data, Object Oriented Design & Programming, Parallel Programming, Database Systems, Machine Learning, Artificial Intelligence, Deep Learning, NLP, Sentiment Analysis, Topic Modeling, OWASP, CWE

PROGRAMMING LANGUAGES
Python, Java, C#, C, C++, CUDA, MATLAB, JavaScript, PHP, XML, HTML5, CSS, SQL, MySQL

TOOLS AND TECHNOLOGIES
AWS (EC2, EMR, S3), IBM Cloud, Map Reduce, Hadoop, Pig, Hive, Cloudera, Junit, PyUnit, Selenium, Flask, CBMC, JBMC, SPIN, TLA+, Bootstrap, Kafka, Google Map API, Oracle, SQL Server, Android SDK, Tableau, Anaconda, TensorFlow, Scikit-Learn, Pandas, SciPy, Matplotlib, NumPy, NLTK, Gensim, TextBlob, Turicreate, GitHub, LaTeX, IntelliJ, Google Colab, Linux

TECHNICAL PROJECTS

[CSCI 59000 Big Data Management] App's user sentiment analysis in terms of reviews Fall 2018
- The dataset contains 2,357 Google PlayStore Apps with App's basic details and 10,680,22 number of reviews (*Python, MySQL, Selenium, Cloudera-CentOS-OS, Hadoop, Map Reduce, Sqoop, Hive).*

[CSCI 50700 Object Oriented Design & Programming] Online Marketplace Spring 2018
- Developed a distributed marketplace based on Java RMI using Object Oriented design patterns including architectural, structural, behavioral and infrastructure patterns.

[CSCI 53700 Distributed Computing] Distributed System in Java Fall 2017
- Developed a distributed system based on Java using a master object and four process objects that supports clock consistency with the concept of logical clock.

[CSCI 50400 Computer Organization] Prime Factorization with Parallel Execution in CUDA Spring 2017
- Implemented a factorized integer of size 10^16, an improved running time compared to the serial execution (*PyCUDA*).

[Personal Project] Analyze the Sentiment of Tweets from Twitter Data Fall 2020
- Compare two different topics and identify the popular one based on the most recent Tweets sentiment (Tweepy in Python, IBM Watson NLP)

WORK EXPERIENCE

Teaching Assistant, Indiana University - Purdue University Indianapolis, USA Jan 2017 – Present
- [CSCI 50900: Software Quality Assurance] | [ECE 49500: Principles of Software Design] | [CSCI 45000: Principles of Software Engineering] | [CSCI 36200: Data Structures]

Programmer Analyst Intern, Corteva Agriscience, USA May 2020 – Aug 2020

- Developed three front-end window applications and upgrade one module in environmental exposure assessment system (*C#, SQL server, Advanced Installer*)
- The applications greatly reduce the level of modeling effort, from weeks down to < 1 day

Assistant Professor, University of Asia Pacific, Bangladesh Oct 2013 – Dec 2016

- Courses taught: Compiler Design, Operating System, Software Development, Computer Programming
- Consistently ranked as the **best teacher** of the department achieving **96% rating** per student evaluation

Research Engineer, National ICT Research Center of Australia, Australia Sep 2012 – Aug 2013

- Designed and developed a secure embedded micro-kernel-based safety critical system (*C, AUTOSAR OS*)

RESEARCH EXPERIENCE

Security-related and Evidence-based Holistic Rating Framework to Identify the Right Apps in Distributed Platform [PhD research] Jan 2017 – Present

- Quantify the trust of software apps based on programmatic view and user perception (*Python, Selenium, MySQL, IBM Watson NLP API, Machine learning, Static code analysis, Linux*).

COVID CV: A System for Creating Holistic Academic CVs during a Global Pandemic [IU Office of the Vice President Funded Project] Sep 2020 – Present

- Color-coded CV from the user's data entries documenting the work and home life and categorizing corresponding events as good or bad. (*React JS, Spring BOOT, Java, MySQL, HTTPS*).

Community Data Analytics for Social Harm (CDASH) [NSF Funded Project] Aug 2017 – July 2020

- Building distributed software control systems for near real-time policing of heterogeneous social harm events (*AWS, C#, Java, Spring Boot, Kafka, MySQL, Google Map API*).

seL4-AUTOSAR: Safety Critical Systems with seL4 Sep 2012 – Aug 2013

- Design and implementation of a secure embedded microkernel-based Safety-Critical-System (*C, Linux*).

Automated Scenario Generation for Model Checker Trampoline OSEK/VDX OS Sep 2010 – Jul 2012

- Implement an automated environment model based on structural data dependency information of the source, able to reduce the memory space up to 38% and runtime up to 82% compared to other existing technique (*C, Linux*).

PUBLICATIONS

- **Nahida Sultana Chowdhury**, Rajeev R. Raje, Saurabh Pandey, George Mohler, and Jeremy Carter; "Enhancing Trust-based Data Analytics for Forecasting Social Harm"; IEEE International Smart Cities Conference (ISC2), 2020.
- **Nahida Sultana Chowdhury**, and Rajeev R. Raje; "SERS: A Security-related and Evidence-based Ranking Scheme for Mobile Apps"; The First IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications, 2019.
- Saurabh Pandey, **Nahida Sultana Chowdhury**, Rajeev R. Raje, George Mohler, and Jeremy Carter; "Trust Estimation of Historical Social Harm Events in Indianapolis Metro Area"; IEEE International Smart Cities Conference (ISC2), 2019.
- **Nahida Sultana Chowdhury,** Rajeev R. Raje; "A holistic ranking schema of apps"; 21st IEEE International Conference of Computer and Information Technology, 2018.
- **Nahida Sultana Chowdhury,** Rajeev R. Raje; "Disparity between the Programmatic Views and the User Perceptions of Mobile Apps"; 20th IEEE International Conference of Computer and Information Technology, 2017.
- **Nahida Sultana Chowdhury**, and Choi Yunja; "Safety Properties based Scenario Generation for Model Checking Trampoline OS", SERSC: International Journal of Security and Its Applications, 2013.

HONORS AND AWARDS

- Student Scholar, Grace Hopper Celebration 2020
- Best Presenter, IEEE 20th International Conference on Computer and Information Technology 2017
- Chair, Organizing Committee, The 2016 ACM-ICPC Asia Dhaka Regional Contest 2016
- Co-Contest Director, 2016 Bangladesh National Collegiate Programming Contest 2016
- Korean Government Scholarship 2009 - 2012
- Vice Chancellor's Gold Medal for securing first position in undergrad level 2008
- Finalist, The 2007 ACM-ICPC Asia Dhaka Regional Programming Contest 2007
- Champion, University of Asia Pacific application development contest 2007

References

- **Rajeev R. Raje**
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