Md Ashiqur Rahman

GRADUATE ASSISTANT · PhD STUDENT
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Overview

7+ years of experience as a researcher, developer, problem-solver, mentor, and instructor. Love to work on challenging problems and finding more straightforward solutions that others might easily overlook.

Education

The University of Arizona — *AZ, U.S.A*
PhD STUDENT, COMPUTER SCIENCE (COURSEWORK GPA: 3.75) — *2016 - 05/2021*

Khulna Univ. of Engineering & Technology (KUET) — *Bangladesh*
B.Sc. IN COMPUTER SCIENCE AND ENGINEERING (GPA: 3.60) — *2011 - 2015*

Skills

Research — Routing in ad-hoc networks, Scheduling algorithms
Coding & Tools — **C++**, Scala, Python, Bash, Lucene, Vim, GDB, Docker

Experience

Network Research Lab, The University of Arizona — *AZ, U.S.A*
GRADUATE RESEARCH ASSISTANT — *2016 - Present*
- Routing in Mobile ad-hoc, Delay-tolerant, and challenged networks using Named Data Networking (NDN).

Computer Science, The University of Arizona — *AZ, U.S.A*
GRADUATE TEACHING ASSISTANT — *2016 - Present*
- CSC 452 Operating Systems (Fall 2018); CSC 425 Computer Networks (Spring-Fall 2017); CSC 477/577 Intro. to Computer Vision (Fall 2016).

Computer Sc. & Engrg., Daffodil Intl. Univ. (DIU) — *Bangladesh*
INSTRUCTOR — *2015 - 2016*
- Mentor: Competitive Programming (Beginner-Intermediate).
- Courses instructed: CSE 221 Algorithms; CSE 134 Data Structures.

Computer Science and Engineering, KUET — *Bangladesh*
LEADING UNDERGRADUATE RESEARCHER (WITH DR. G.G. NAWAZ ALI) — *2014 - 2015*
- Studying sheduling algorithms and applications of Network Coding in On-demand Vehicular Ad-hoc Networks.

SGIPC (Special Group of Interest in Programming Contests), KUET — *Bangladesh*
WORKSHOP MANAGER AND INSTRUCTOR — *2012 - 2015*

Honors & Awards

2019 **2nd Runners-up**, 8th NDN Hackathon at UCLA, CA, USA
2018 **Winner**, 6th NDN Hackathon at FIU, FL, USA
2017 **Winner**, 4th NDN Hackathon at Unive. of Memphis, TN, USA
2014 **Position 75**, ACM ICPC 2014 Asia Regional Dhaka Site
2014 **Winner**, Water Hackathon App Fest by WORLD BANK, BGD

Publications (Graduate research)

On Data-centric Forwarding in MANETs: An In-depth Analysis and Baseline Design — *China*
[SUBMITTED] 2020 IEEE INFOCOM — *2020*
- Md Ashiqur Rahman; Beichuan Zhang

Publications (Undergraduate research)

Cooperative Cache Transfer-based On-demand Network Coded Broadcast in Vehicular Networks — *ACM*
ACM TRANSACTION ON EMBEDDED COMPUTING SYSTEMS — *2019*
- G. G. MD. Nawaz Ali; MD. Noor-A-Rahim; Md. Ashiqur Rahman; Beshah Ayalew; Peter H. J. Chong; Yong Liang Guan

Efficient Real-time Coding-assisted Heterogeneous Data Access in Vehicular Network — *IEEE*
IEEE INTERNET OF THINGS JOURNAL — *2018*
- G. G. Md. Nawaz Ali; MD. Noor-A-Rahim; Md. Ashiqur Rahman; Syeda Khairunnesa Samantha; Peter Han Joo Chong; Yong Liang Guan

Efficient coding based heterogeneous data access in vehicular networks — *France*
IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS (ICC) — *2017*
- G. G. M. Nawaz Ali; Md. A. Rahman; S. K. Samantha; Yumeng Gao; Peter H.J. Chong; Y. L. Guan

On Accessing Heterogeneous Data Items Using Network Coding in Wireless Broadcast — *Canada*
IEEE 84TH VEHICULAR TECHNOLOGY CONFERENCE (VTC-Fall) — *2016*
- Md. Ashiqur Rahman; G. G. Md. Nawaz Ali; Yumeng Gao; Syeda K. Samantha; Peter H. J. Chong

On Scheduling Real-Time Multi-item Query with Network Coding in Multi-RSU VANETs — *S. Korea*
22ND IEEE RTCSA — *2016*
- Md. A. Rahman; G.G.M. Nawaz Ali; Peter H.J. Chong; S.K. Samantha; M.F. Muntasir; C. Chen

On Efficient Data Dissemination Using Network Coding in Multi-RSU VANETs — *China*
IEEE 83RD VEHICULAR TECHNOLOGY CONFERENCE (VTC Spring) — *2016*
- G. G. Md. Nawaz Ali; Md. Ashiqur Rahman; Peter Han Joo Chong; Syeda Khairunnesa Samantha

Projects

NFD: Named-Data Forwarding Daemon
STUDENT DEVELOPER (TOOLS: BOOSTC++, GERRIT, JENKINS) — *2016-Present*
- A network forwarder that evolves together with the NDN protocol (Site: `https://named-data.net/doc/NFD/current/`).

Weighted Dropout: Supporting Multi-Level Annotations for Medical Literature on Patient, Interventions and Outcomes — *UofA, AZ*
CSC 585 ALGORITHMS IN NLP — *Fall 2018*
- Variable dropout-probability based on distance from tokens of interest.
- Maintains higher context information from all hot-word neighbors.
- Near-SotA performance with significantly lower model training time.
- Tools: Python, Tensorflow, Docker.

Implementing components of MINIBASE in C — *UofA, AZ*
CSC 560 DATABASE SYSTEMS AND IMPLEMENTATIONS — *Fall 2017*
- Implementing Heapfile manager, Buffer manager, B+ tree in a DBMS.

Building (a part of) Watson — *UofA, AZ*
CSC 583 TEXT RETRIEVAL & WEB SEARCH — *Spring 2017*
- An end-to-end Information Retrieval system that indexes a large set of Wikipedia pages to retrieve top relevant pages for short queries similar to the Jeopardy game.
- Tools: Scala, Apache Maven, Lucene.

Implementing a Software Router in C — *UofA, AZ*
CSC 525 PRINCIPLES OF COMPUTER NETWORKING — *Fall 2016*
- A software router with ARP protocol, IP forwardng, and PWOSPF routing algorithm that can forward IP packets while reacting to link changes.