# Md Ashiqur **Rahman**


Graduate Assistant · PhD Student

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## Overview

PhD student at The University of Arizona. 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. Prefer to work in a team environment.

## Education

**The University of Arizona** *AZ, U.S.A*

PhD Student, Computer Science (Coursework GPA: 3.75) *2016-Present*

**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/C++, Scala, Python, Bash, Lucene, Vim, GDB, Docker

## Experience

**Network Research Lab, The University of Arizona** *AZ, U.S.A*

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.