

# 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-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 scheduling 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

IEEE

### Heterogeneous Data Access in Vehicular Network

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 forwarding, and PWOSPF routing algorithm that can forward IP packets while reacting to link changes.