Md **Ashiqur Rahman**

PhD Candidate · The University of Arizona

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Skills

Research	Computer Networks, Named Data Networking, routing in mobile ad-hoc networks, packet scheduling with network coding in RSU-based vehicular ad-hoc networks (V2I).
Coding	**C/C++**(preferred), familiar with Scala, Python, Java
Tools	Bash, Lucene, Vim, GDB, Docker, Jenkins, NS-3, CSIM
Others	Natural language processing, DBMS, Information retrieval

Education

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

PhD Candidate, 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*

Experience

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

Graduate Associate *2016 - Present*

- Architectural differences between Named Data Networking (NDN) and IP in mobile ad-hoc networks. Routing in delay-tolerant and challenging networks using NDN.

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

Graduate Associate *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*

Lead 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 Trainer *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 **Winner**, Water Hackathon App Fest by WORLD BANK, BGD

Relevant Coursework

Graduate *2016-Present*

- Principles of Computer Networking, Database Systems and Implementation, Algorithms in NLP, Information Retrieval, Operating Systems.

Undergraduate *2011-2015*

- Computer Networks, Machine Learning, Data Mining, Data Structures and Algorithms, Algorithm Analysis and Design, Data Communication.

Publications

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*

- Implemented 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.