Md **Ashiq**ur **Rahman**

PhD Candidate & MS in Computer Science

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Skills

Research Data-centric networking, vehicular networks.
Coding **C/C++**, familiar with Python, Java, Bash.
Others TCP/IP, Database Systems, Information Retrieval.

Education

The University of Arizona *AZ, U.S.A*
PhD Candidate, Computer Science (Coursework GPA: 3.75) *2016 - 05/2022*

The University of Arizona *AZ, U.S.A*
MS towards PhD, Computer Science (GPA: 3.75) *2016 - 2020*

Khulna Univ. of Engineering & Technology (KUET) *Bangladesh*
BS in Computer Science and Engineering (GPA: 3.60) *2011 - 2015*

Experience

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

Research *2016 - Present*

- Analyzing network and transport layer with Named Data Networking (NDN) in mobile ad-hoc, delay-tolerant and challenging networks.

Teaching *2016 - Present*

- Instructor: CSC 210 Software Development (Summer 2020)
- TA: CSC 425 Computer Networks; CSC 452 Operating Systems

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 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 Trainer *2012 - 2015*

Projects

NDN in mobile ad-hoc, delay-tolerant and challenging networks. *Ongoing*

- Improving data retrieval rate, throughput and reducing latency using data-centric approach compared to traditional TCP/IP.
- **Publications:** One accepted at IC3N 2021 and one published at ICC Workshops 2020.
- *Tools:* ndnSIM, C++

Network Coded Data Dissemination in RSU-based Vehicular Ad-hoc Networks (VANETs) *2014-2019*

- Minimize wireless broadcast data transmissions and overall Vehicle-to-RSU communication latency to provide improved road-safety and infotainment.
- Achieved significant lower latency and wireless broadcast overhead with high data-retrieval rate.
- **Publications:** Two Journals and four Conference papers. Two as first author, two as second and two as third (Google Scholar).
- *Tools:* CSIM (C, C++)

Weighted Dropout: Supporting Multi-Level Annotations for Medical Literature on Patient, Interventions and Outcomes *2018*

- Distance-based variable-dropout using tokens of interest for annotating abstracts from medical literature.
- Focusing on contextual realationship in sparse dataset.
- Near-SotA performance with near-half model training time.
- *Tools:* Python, Tensorflow, Docker.

Components of MINIBASE DBMS in C *2017*

- Implemented self-resizing Heapfile manager, Buffer manager
- Implemented B+ tree (non-balancing)

Building (a part of) Watson *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.

Email Spam classifier *2017*

- Built a spam classifier model by training with spam labeled/unlabeled dataset and finding similarity between unknown dataset
- *Tools:* Scala, Apache Maven, Lucene.

Implementing a Software Router in C *2016*

- Wrote the ARP protocol for IP forwarding, and PWOSPF routing algorithm that can react to link changes.

Gas Station Automation *2014*

- Easy and secured management of gas station's monetary, repository, and human resources and report generation using cloud services.
- Tools: C#, SQL, ASP.NET, Crystal Report, JavaScript