Md **Ashiqur Rahman**

Problem-solver ~ Researcher

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Skills

Research Performance optimization, latency reduction in Data-centric and vehicular ad-hoc networks.

Coding **C/C++**, familiar with Java, Python, Bash.

Others Database Systems, Information Retrieval.

Education

The University of Arizona, USA *2016-12/2021*

PhD Candidate, Computer Science

(Coursework GPA: 3.75)

The University of Arizona, USA *2016-05/2020*

MS towards PhD, Computer Science

(GPA: 3.75)

Khulna University of Engineering & Technology (KUET), Bangladesh *2011-2015*

BSc in Computer Science and Engineering

(GPA: 3.60)

Experience

Graduate Associate, The University of Arizona, USA *2016-Present*

Research

- Analyzing and improving Named Data Networking (NDN) in mobile ad-hoc, delay-tolerant and challenging networks.

Teaching

- *Instructor*: CSC 352 Systems Programming and UNIX (Summer 2021); CSC 210 Software Development (Summer 2020)
- *TA*: CSC 425 Computer Networks; CSC 452 Operating Systems

Computer Sc. & Engg., Daffodil Intl. Univ. (DIU), Bangladesh *2015-2016*

Instructor

- *Mentor*: Competitive Programming (Beginner-Intermediate).
- *Teaching*: CSE 221 Algorithms; CSE 134 Data Structures.

Computer Science and Engineering, KUET, Bangladesh *2014-2015*

Lead Undergraduate Researcher

(with Dr. G.G. Nawaz Ali)

- Analyzing scheduling algorithms and applications of Network Coding in On-demand Vehicular Ad-hoc Networks.

SGIPC (Special Group of Interest in Programming Contests), KUET, BGD *2012-2015*

Workshop Manager and Trainer

Projects

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

- Optimizing data-centric approach in wireless networks compared to traditional TCP/IP.
- Reducing data exchange latency and network overhead through passive path learning.
- Improving application data retrieval rate and throughput.
- **Publications:** Two accepted at LCN 2021, IC3N 2021 and one published at ICC Workshops 2020 (Google Scholar).
- *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.
- *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-State-of-the-Art 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