

# 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,** 2016-Present  
**The University of Arizona, USA**  
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 five Conference papers. Two as first author, two as second and three 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 relationship 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