MD ASHIQUR RAHMAN

GRADUATE STUDENT ~ THE UNIVERSITY OF ARIZONA

Tempe, Arizona   +1 (480) 310-7674

marahman@email.arizona.edu
ashiqopu117   ashiqopu
ashiqrahman.com

Skills

Research   Computer Networks, Named Data Networking, routing in mobile ad-hoc networks, scheduling algorithms with network coding in RSU-based vehicular ad-hoc networks (V2I).

Coding and Tools   C/C++, familiar with Scala, Java and Python; ViM, GDB, Lucene, Docker, NS-3, CSIM.

Others   Natural language processing, Database systems, Information retrieval.

Education

● **Graduate (PhD):** *Computer Science, The University of Arizona, AZ (GPA: 3.75/4.00)*   *2016-05/2021*

- **Student Developer**: NDN Forwarding Daemon (NFD): (https://named-data.net/doc/NFD/current/). A network forward that evolves together with the NDN architecture.
- **NLP**: Built a weighted dropout probability-based system to support multi-level token annotation in medical literature. Near SoTA performance with significantly lower training time. *Tools: Python, Docker*.
- **Information Retrieval**: Built a (part of) Watson to index and retrieve top relevant Wikipedia pages for short queries similar to the Jeopardy game. Built a spam classifier. *Tools: Scala, Lucene*.
- **DBMS**: Implemented heap-file, buffer manager and B+ tree of a MINIBASE database system. *Tool: C.*
- **Networks**: Implemented a software router with ARP and PWOSPF protocol supporting link failure. *Tool: C.*
- **Hackathon**: 2nd Runner-up in 8th and Winner in 6th and 4th NDN Hackathon.

Relevant Coursework: Principles of Computer Networks; Operating Systems; Database Systems and Implementation; Algorithms in NLP; Text Retrieval & Web Search; Algorithms in Bioinformatics; Computer Graphics; Computer Security.

● **Undergraduate (BSc):** *Computer Science and Engineering, Khulna University of Engineering & Technology (KUET), Bangladesh (GPA: 3.60/4.00)*   *2011-2015*

- **Thesis**: Application of network coding in scheduling algorithms in multi-RSU vehicular ad-hoc networks. *Published six papers* from related studies, two as the first author, two as second and two as third. *Tool: CSIM*.
- **Software Development**: Implemented a gas station automation software, *Tools: C#, .NET, Crystal Reports.*
- **Programming**: Four ACM ICPC regionals, IUT-ICT Fest (best- 14th). Workshop manager and trainer.
- **Hackathon**: Winner, Water Hackathon by World Bank.
- **Hardware Project**: Designed a car with programmable microcontroller; Logisim and FPGA circuit design.

Relevant Coursework: Software Engineering; Computer Networks; Data Comm.; Machine Learning; Artificial Intelligence; Fault-tolerant systems; Data Structures and Algorithms; Mathematical Analysis; Computer Architecture and Organization; Digital System Design; Microprocessors and Assembly Language; Digital Logic Design; Peripherals and Interfacing.

Experience

● **Graduate Associate**

Computer Science, The University of Arizona, AZ   *2016-Present*

Research: Architectural differences between Named Data Networking (NDN) and IP in mobile ad-hoc networks (submitted). Routing in challenging networks.

Teaching: CSC 425: Computer Networks (grader and project maintainer), Spring-17, Fall-17, Spring-20. CSC 452: Operating Systems (grader), Fall-19.

● **Instructor**

Computer Science and Engineering, Daffodil International University, Bangladesh   *2015-2016*

Teaching (in-person): CS 113: Intro to Programming, CS 134 Data Structures, CS 221: Algorithms.

Mentor, Contest organizer and Judge: Competitive programming: Beginner and Intermediate.

● **Workshop Manager and Trainer**

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