Md. Ashfaqur Rahaman

Curriculum Vitae

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Research Interests

- Computer Architecture
- Operating Systems and Distributed Systems
- Compilers
- Software Performance
- Security

Experience

Research

Dec. 2019-Present **Voluntary Research Assistant**, *Prof. Baris Kasikci's Lab*, University of Michigan, Ann Arbor.
I am working on load-time profile guided optimizations of large application binaries to reduce cache misses

Dec. 2018-Aug. 2019 **Research Assistant**, *Climate Modeling and Simulation Lab*, IWFM, BUET.
I worked as a system developer in Flash Flood Early Warning System (FFEWS) project

Professional

Apr. 2018-Apr. 2019 **Lead Software Engineer**, *NextGen Digitech*, Dhaka.
Worked on a desktop application for designing wind turbines. I contributed in the core software architecture and developed the GUI

Oct. 2017-Mar. 2018 **Firmware Engineer**, *2RA Technology Limited*, Dhaka.
I worked on different projects based on Raspberry Pi and AVR Microcontrollers. Here are few of them:

Energy Monitoring System A system for monitoring a textile industry's power generators from the web

UHF Attendance System An automated attendance system for schools using UHF RFID

Battery Voltage Monitoring System A battery voltage and temperature monitoring system for an industry's backup power system in different sites accross the country and centralize the data

Temperature Monitoring System A web based temperature monitoring system for a company's parking lot.

Competitions

2018 **Google Kickstart Coding Competition**, *Google*.
Participated in the qualification round and solved all the problems.

2016 **RoboSoccer Competition**, *Engineering Student Association Bangladesh (ESAB)*.
My team got honorable mention in the competition.

2015 **Model Ship Propulsion Competition**, *BUET*.
My team secured third position. I worked in programming and hardware interfacing part

2015 **Android App Contest**, *EATL-Prothomalo*.
We developed an Android application for checking OMR sheets by using image processing algorithms. Our app was in the top 100 list.

Training and Courses

- Operating System and System Programming CS162, UC Berkeley
- Digital Design & Computer Architecture, Prof. Onur Mutlu
- Compilers CS143, Stanford
- Mathematics for Computer Science 6.042J, MIT OCW
- Introduction to Algorithms 6.006, MIT OCW
- Practical Programming in C 6.087, MIT OCW
- Advanced C++ Programming for Ship Structure, BUET
- Fortran Programming, BUET

Skills

Programming Languages	C, C++, Python, JAVA, Assembly(AVR, X86), Shell script, SQL
Frameworks and Tools	Qt, Android, Perf, BOLT
Embedded Systems	AVR Microcontrollers, Raspberry Pi, Arduino
GNU/Linux	7 years of experience in the GNU/Linux environment
VCS	Git and Github
Text Editing	Vim, LaTeX
GRE	313, Quantitative - 162, Verbal - 151, AWA - 3.0
TOEFL	101, Reading - 28, Listening - 27, Speaking - 23, Writing - 23

Education

2012-2019 **B.Sc in Naval Architecture and Marine Engineering**, *Bangladesh University of Engineering and Technology (BUET), CGPA – 2.69 on 4.00*.

Bachelor Thesis

Title *Power Efficient Remotely Operated Underwater Vehicle Using Buoyancy Chambers*

Supervisor	Professor Dr. Md. Mashud Karim
Description	In this thesis, a power efficient remotely operated underwater vehicle (ROV) has been built using buoyancy chambers.Conventionally, thruster motors are used for the propulsion of the ROV. In this system to keep the vehicle at rest in a fixed position under water, thruster motors are used and battery power is consumed continuously. This power loss can be removed by adding simple buoyancy mechanism. A control algorithm has been developed to control all the valves and pump. Also a computer program has been developed to communicate with the on board controller of the ROV.