

# MD Iftakharul Islam

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## EDUCATION

*PhD*, Computer Science (Expected in 2020)  
Kent State University, Kent, OH, USA. GPA 3.82  
*Bachelor of Science*, Computer Science and Engineering (Jan 2008)  
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

## PROGRAMMING SKILLS

C; C++; Java; C#; Python; Shell Script; Verilog; HTML; CSS; JavaScript

## OPEN SOURCE PROJECTS

Linux Kernel, Alladin (an ASIC simulator), Mininet (Network emulator), GStreamer

## PROFESSIONAL EXPERIENCE

*Kent State University*  
Kent, OH, USA

Sep, 2013 - present  
(Graduate Assistant)

- Developed a new routing table lookup algorithm and several existing best performing algorithms such as Poptrie and SAIL. Implemented them as a stand-alone application, inside ASIC simulator and inside Linux kernel (in C). Evaluated the algorithms with the routing tables from real core routers.
- Implemented power and area calculation in Aladdin (an ASIC simulator) where logic gates are not shared across pipeline stages.
- Implemented a router-assisted TCP in Linux kernel where TCP sending rate is calculated based on the explicit feedback from router (in C). The router-assisted TCP performs better than delay-based congestion control (currently used in Google Hangout) for video conferencing.
- Implemented RCP protocol for network processor based routers using Linux eBPF (in C).
- Implemented RCP protocol in a router data plane using Domino (in C).
- Developed a GStreamer based video streaming application (in C).
- Developed several experimental network topologies using Mininet (Python).
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*inConatact*  
Columbus, OH, USA

May, 2015 - Aug, 2015  
(Software Development intern)

- Simulated a call center where simulated calls are generated based on various probabilistic distributions. The calls are then assigned to agents based on their schedule and the skill matrices of the agents have been calculated. (C#)
- Implemented an interval tree to make the call assignment efficient instead of searching all the agents.

*RightRez*  
Bloomington, IN, USA

May, 2014 - Aug, 2014  
(Software Development intern)

- Implemented a BFS and A\* search to find flights from a graph consists of 3 million flights (C#)
- Implemented several heuristics that reduced that searching time from 30 minutes to few seconds.
- Integrated Sabre webservice to implement seat map for airlines. (C#)

*GenWeb2*  
Dhaka, Bangladesh

Sep, 2012 - Jul, 2013  
(Senior Software Engineer)

- Implemented a 3D simulator for CNC machines. (C++, OpenGL, Qt)
- Calculated the minimum number of points to draw an arc based on the arc length. It reduced the CPU and memory usage by almost 90%

*KB Group* Apr, 2010 - Sep, 2011  
Dhaka, Bangladesh (Software Engineer)

- Integrated payment gateways to KB Group e-commerce and post office box application. (C++, COM).
- Implemented a print server that generates PDF tickets and print them by specialized printers (C#)

*Arista Enterprises* Apr, 2009 - Mar, 2010  
Dhaka, Bangladesh (Software Engineer)

- Implemented end-to-end transaction for an airline booking system (ASP.NET).

*SDSL* Feb, 2008 - Mar, 2009  
Dhaka, Bangladesh (Software Engineer)

- Developed a map client for feature phones for AfriGIS map. Worked on zooming, panning, and caching map tiles. (J2ME).

## **PUBLICATIONS**

- **MD Iftakharul Islam**, Javed I Khan "SAIL Based FIB Lookup in a Programmable Pipeline Based Linux Router." IEEE High Performance Switching and Routing (HPSR), 2019.
- **MD Iftakharul Islam**, Javed I Khan "Leveraging Domino to Implement RCP in a Stateful Programmable Pipeline." IEEE High Performance Switching and Routing (HPSR), 2019.
- **MD Iftakharul Islam**, Javed I Khan "A Network-centric TCP for Interactive Video Delivery Networks (VDN)." IEEE International Conference on Network Protocols (ICNP), 2017.
- **MD Iftakharul Islam**, Javed I Khan "Video Splicing Techniques for P2P Video Streaming." IEEE ICDCS workshop on Computer and Networking Experimental Research using Testbeds (CNERT), 2015.

## **SERVICES**

- Reviewer of IEEE Journal of Selected Area of Communication (JSAC).
- Reviewer of Computer Networks, Elsevier.
- Shadow reviewer of Network and Computer Applications, Elsevier.