MD Islam (Tamim)

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EDUCATION

Kent State University
PhD in Computer Science

📅 Aug 2013 – Aug 2022   ⚲ Kent, OH

BUET
Bachelors in Computer Science and Engineering

📅 Aug 2003 – Dec 2008   ⚲ Dhaka, Bangladesh

TECHNICAL SKILLS

`C++` `C`

RESEARCH AREA

`Computer Architecture` `Network Algorithms`

RESEARCH PROJECTS

C2RTL: A High-Level Synthesis tool

- Developed a high-level synthesis tool named C2RTL that can generate synthesizable Verilog RTL for pipelined ASIC from C code.
- It was designed as a GCC plugin. It takes intermediate code produced by GCC as an input and generates a control and data-flow graph (CDFG) for that. It then performs scheduling and MUX tree generation before producing the Verilog code.
- Evaluated the generated Verilog code with iVerilog and Open-ROAD

CP-Trie: A Longest Prefix Match algorithm in Software and ASIC

- Developed several bitmap and Trie based longest prefix match algorithms such as CP-Trie, Poptrie and SAIL for IPv6 routing table lookup.
- Evaluated the algorithms with the routes from real core routers.

NC-TCP: A congestion control in Linux kernel

- Developed several router assisted congestion control such as XCP, RCP and NC-TCP in Linux kernel.
- Evaluated the protocols for a video streaming applications for various network topologies using Mininet and a GStreamer.

SELECTED PUBLICATIONS

- MD Iftakharul Islam, Javed I Khan "C2RTL: A High-level Synthesis System for IP Lookup and Packet Classification." IEEE HPSR, 2021.
- MD Iftakharul Islam, Javed I Khan "CP-Trie: Cumulative Pop-Count based Trie for IPv6 Routing Table Lookup in Software and ASIC." IEEE HPSR, 2021.
- MD Iftakharul Islam, Javed I Khan "A Network-centric TCP for Interactive Video Delivery Networks (VDN)." IEEE ICNP Workshop PVE-SDN, 2017.

WORK EXPERIENCE

Staff Engineer
Samsung SARC/ACL

📅 April 2023 – Present ⚲ San Jose, CA

- Working on microarchitecture modeling of the GPU control subsystem (C++).

Software Engineer 3
Juniper Networks

📅 Jan 2022–Mar 2023 ⚲ Sunnyvale, CA

- Worked on packet classification algorithms (e.g. prefix match, range match, TCAM match, etc) of Juniper Express ASIC. (C++).

Graduate Teaching Assistant
Kent State University

📅 Sep 2013-Dec 2022 ⚲ Kent, OH

- Taught Design Patterns and Object Oriented Programming in C++.

Software Engineer Intern
inConatact

📅 May 2015-Aug 2015 ⚲ Columbus, OH

- Developed a call center simulation platform (C#).

Software Engineer Intern
RightRez

📅 May 2014-Aug 2014 ⚲ Bloomington, IN

- Developed a flight search algorithm (C#).

Senior Software Engineer
GenWeb2

📅 Sep 2012 – Jul 2013 ⚲ Dhaka, Bangladesh

- Developed a 3D simulator of CNC machines (C++)

Software Engineer
KB Group

📅 Apr 2010 - Sep 2011 ⚲ Dhaka, Bangladesh

- Developed ticketing systems for theaters (C++).

Software Engineer
Arista Enterprises

📅 Apr 2009–Mar 2010 ⚲ Dhaka, Bangladesh

- Developed an airline ticket booking system (C#)