Muhammad Asim Jamshed

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Contact Information

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Interests

Networked systems design & implementation, distributed systems, network security and operating systems.

Education

Korea Advanced Institute of Science & Technology (KAIST), Republic of Korea
- PhD, Electrical Engineering (Spring 2017). Advisor – Prof. KyoungSoo Park

University of Pittsburgh, Pittsburgh, Pennsylvania, USA
- MS, Computer Science (Apr 2010). Advisors – Prof. KyoungSoo Park & Prof. Daniel Mossé

Lahore University of Management Sciences, Pakistan
- BSc (Hons), Computer Science, (May 2005).

Employment Experience (Selected)

Intel Labs, Intel Jones Farm 2 (JF2), Hillsboro, OR
- Research Scientist, Telco Systems (May 2017-onwards). Reporting to Christian Maciocco (Principal Engineer)

International Computer Science Institute (ICSI), Berkeley, CA
- Research Intern (May 2014-Aug 2014, Oct 2015-Dec 2015). Mentor – Dr. Robin Sommer
- Developed Packet Bricks. See [3] in Projects section.

Palmchip Corporation, Lahore, Pakistan
- Software Engineer (May 2005-July 2006). Reporting to Ahrar Naqvi (VP Engineering)
- Optimized bootloader & filesystem performances for an system-on-chip network-attached storage device series.

Projects/ Software (Selected)

1. **Omec Project** (https://github.com/omec-project/ngic-rtc)
   - Control User Plane Separated (CUPS) TS23501 based EPC Service & Packet Gateways (SGW, PGW)
   - *URL:* https://www.opennetworking.org/omec/
2. **mOS Stack** (https://github.com/ndsl-kaist/mOS-networking-stack)
   - A Specialized Network Programming Library for Stateful Middleboxes.
   - *Pub:* **NSDI 2017**, *URL:* http://mos.kaist.edu/
3. **Packet Bricks** (https://github.com/bro/packet-bricks)
   - A netmap-based packet layer for distributing and filtering traffic.
4. **mTCP** (https://github.com/eunyoung14/mtcp/)
   - A Highly Scalable User-level TCP Stack for Multicore Systems.
   - *Pub:* **NSDI 2014**, *URL:* http://shader.kaist.edu/mtcp/
5. **Kargus**
   - A Highly-scalable Software-based Network Intrusion Detection System.
   - *Pub:* **CCS 2012**, *URL:* http://shader.kaist.edu/kargus/

Publications (Selected)

[1] "AccelTCP: Accelerating Network Applications with Stateful TCP Offloading." NSDI '20
[2] "Reducing Tail Latency via Safe and Simple Duplication." CoNEXT '19
[3] "mOS: A Reusable Networking Stack for Flow Monitoring Middleboxes." NSDI '17 - **Best Paper Award**
[4] "APUNet: Revitalizing GPU as Packet Processing Accelerator." NSDI '17
[5] "DFC: Accelerating String Pattern Matching for Network Applications." NSDI '16
[6] "Haetae: Scaling the Performance of Network Intrusion Detection with Many-core Processors." RAID '15
[7] "mTCP: a Highly Scalable User-level TCP Stack for Multicore Systems." NSDI '14 - **Community Award**
[8] "Kargus: a Highly-scalable Software-based Intrusion Detection System." CCS '12
[9] "Suppressing Bot Traffic with Accurate Human Attestations." ApSys '10
[10] "Sentinel: Hardware-Accelerated Mitigation of Bot-Based DDoS Attacks." ICCCN '08

Awards

Intel Division Recognition Award for OMEC
NSDI Best Paper Award 2017 for mOS
2^{nd} Runner-up Samsung Humantech Paper Award 2016 for DFC
NSDI Community Award 2014, & Runner-up Samsung Humantech Paper Award 2014 for mTCP
"10 Achievements of 2012 that put KAIST on the Spotlight" for Kargus
Graduate Fellowship Spring 2006
Undergraduate Dean's Honor List 2001-03

Skills

C/C++, C#, Java, Python, CUDA, Lua, Javascript, HTML/XML, Linux, x86 Assembly, TILE-Gx, Intel DPDK