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).
- Minor in Mathematics

Employment Experience (Selected)

Intel Jones Farm 2 (JF2), Hillsboro, OR
- Research Scientist (May 2017-onwards). Mentor – Christian Maciocco

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 [2] in Projects section.

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

Projects/ Software (Selected)

1. mOS Stack (https://github.com/ndsl-kaist/mOS-networking-stack)
- A Specialized Network Programming Library for Stateful Middelboxes.
- *Pub:* **NSDI 2017**, *URL:* http://mos.kaist.edu/

2. Packet Bricks (https://github.com/bro/packet-bricks)
- A netmap-based packet layer for distributing and filtering traffic.

3. mTCP (https://github.com/eunyoung14/mtcp/)
- A Highly Scalable User-level TCP Stack for Multicore Systems.
- **NSDI Community Award 2014**, Runner-up **Samsung HumanTech Paper Award 2014**.
- *Pub:* **NSDI 2014**, *URL:* http://shader.kaist.edu/mtcp/

4. Kargus
- A Highly-scalable Software-based Network Intrusion Detection System.
- **"10 Achievements of 2012 that put KAIST on the Spotlight."**
- *Pub:* **CCS 2012**, *URL:* http://shader.kaist.edu/kargus/

Publications (Selected)

[1] "mOS: A Reusable Networking Stack for Flow Monitoring Middleboxes." NSDI 2017 - **Best Paper Award**
[2] "APUNet: Revitalizing GPU as Packet Processing Accelerator." NSDI 2017
[3] "DFC: Accelerating String Pattern Matching for Network Applications." NSDI 2016
[4] "Haetae: Scaling the Performance of Network Intrusion Detection with Many-core Processors." RAID 2015
[5] "A Case for a Stateful Middlebox Networking Stack." SIGCOMM CCR 2015
[6] "mTCP: a Highly Scalable User-level TCP Stack for Multicore Systems." NSDI 2014 - **Community Award**
[7] "Kargus: a Highly-scalable Software-based Intrusion Detection System." CCS 2012
[8] "Suppressing Bot Traffic with Accurate Human Attestations." ApSys 2010
[9] "Sentinel: Hardware-Accelerated Mitigation of Bot-Based DDoS Attacks." ICCCN 2008
[10] "In-Network Server-Directed Client Authentication and Packet Classification." LCN 2010

Awards

NSDI Best Paper Award 2017 for mOS
2^{nd} Runner-up Samsung Humantech Paper Award 2016 for DFC
NSDI Community Award 2014 for mTCP
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++, Java, C#, Python, CUDA, Lua, Awk, Javascript, Linux shell scripting, HTML, XML, Unix/GNU Linux, x86 Assembly, TILE-Gx programming, LaTeX