

Interests I am broadly interested in malware analysis, user privacy and security, and network monitoring.

Online Presence [Homepage @Data-CSIRO](#), [@Google Scholar](#), & [@LinkedIn](#)

University studies

- 09/2014 – 02/2018 **PhD candidate in Electrical Engineering and Telecommunication**, The University of New South Wales (UNSW), Australia.
- Research topic and supervision: Design and analysis of usable privacy and security systems for the Web and mobile platforms. Supervised by **Mohamed Ali (Dali) Kaafar, PhD**.
- 03/2008 – 02/2010 **M.Sc. in Information and Communication Engineering**, Ajou University, Korea.
(GPA: 4.06/4.5)
- M.Sc thesis and supervision: Design and evaluate a resource- and energy-efficient surveillance scheme for wireless multimedia sensor networks. Supervised by **Ki Hyung Kim, PhD**.
- 12/2002 – 03/2007 **B.Sc in Computer Systems Engineering**, University of Engineering and Technology (UET) Peshawar, Pakistan.
(GPA: 3.71/4.0)
- B.Sc thesis: Simulate and implement a CDMA transceiver with advanced access control mechanisms using MATLAB and field programmable graphics arrays (FPGAs).

Professional experience

- 09/2014 – to date **Graduate Research Student**, Networks Group, CyberPhysical Systems Research Program, Data61-CSIRO, Australia.
- Designed and implemented an analysis framework to analyze privacy preserving systems for the Web and proposed as well as validated a machine-learning based systems with improved usability and efficiency.
 - Designed and implemented crawling and analysis framework to Analyze security and privacy risks of VPN permission-enabled Android applications.
 - Implemented data collection framework i.e., crawlers and comprehensively analyzed characterize sellers, buyers, and services of two prominent underground marketplaces.
 - Empirically analyzed the inefficiencies of Facebook's spam detection systems and proposed as well as validated a machine learning based system that detect even the most trickiest and stealthy spammers.
- 05/2014 – 08/2014 **Software Engineer**, Network Research Lab (NRL) NICTA, Sydney, Australia.
- Implemented an analysis framework to extract syntactic and semantic features from JavaScript programs collected from Alexa's top 5K websites.
- 05/2013 – 12/2013 **Software Engineer**, STU, Umm Al Qura University, Makkah, Saudi Arabia.
- Designed and implemented crowd sensing system to monitor crowd behavior in Hajj - one of the largest religious gatherings.
- 02/2010 – 01/2013 **Research Engineer**, Peer-to-Peer Networks, Technische Universität Darmstadt, Germany.
- Implemented monitoring systems to analyzing security and resiliency of p2p-based services.
 - Contributed to research activities in Quap2P (www.quap2p.de) project to benchmark security (attacks and countermeasures) against p2p-based systems.
- 11/2009 – 01/2010 **Software Engineer**, GStorm, Seoul, Korea.
- Ported multi-media codec for Samsung Galaxy mobile phone at GStorm from propriety multi-media applications to Android OS.
- 07/2008 – 08/2008 **Software Engineer**, Lanbrid Company, Seoul, Korea.
- Implemented security solutions, mainly IPSec, in network service processors i.e., propriety gateways and routers.
- 03/2008 – 01/2010 **Research Assistant**, Information and Communication Security Lab, Seoul, South Korea.
- Programmed sensor node and deployed surveillance applications in sensor networks and collected multimedia monitored data.
 - Proposed efficient relay node placement scheme for two-tiered wireless sensor networks.
- 03/2007 – 03/2008 **Lab Instructor**, DCSE, University of Engineering and Technology, Peshawar, Pakistan.
- Conducted lab courses including embedded system programming, Java-based object oriented software development, and image processing.

Technologies and specialization

Frequently Used Python (expert), Java (proficient), C/C++ (proficient), Bash-scripting, R, Bro, Scikit-learn, Wireshark, tcpdump, XML, JSON.

Prior Experiences JavaScript, CSS, HTML, Angular, MySQL, MongoDB, NS3, Scapy, Scrapy, MATLAB, gnuplot

Honors and awards

- 09/2014 – 02/2018 **PhD Scholarship**, granted by UNSW and Data61-CSIRO, for pursuing PhD in Electrical Engineering and Telecommunication, UNSW, Sydney, Australia.
- 09/2016 – 09/2016 **Travel Grants and Post Graduate Research Scholarship**, granted by Data61-CSIRO and UNSW, for attending IMC in Santa Monica, USA.
- 10/2015 – 11/2015 **Student Travel Grants**, granted by ACM and NICTA, for attending IMC in Tokyo, Japan.
- 03/2008 – 01/2010 **M.Sc Scholarship**, granted by IITA and Ajou University.
- 03/2002 – 03/2007 **Position Holder Scholarship**, secured top position (1%) in B.Sc engineering, granted by UET, Peshawar, Pakistan.
- 03/2002 – 03/2007 **Position Holder Bronze Medal and Scholarship**, got 3rd position out of 50K+ students at intermediate school exams, granted by BISE Mardan, Pakistan.

Selected scientific publications (Complete list @GScholar)

Peer-reviewed publications

- 1) **Muhammad Ikram**, Lucky Onwuzurike, Shehroze Farooqi, Emiliano De Cristofaro, Arik Friedman, Guillaume Jourjon, Mohamed Ali Kaafar, M. Zubair Shafiq, "Combating Fraud in Online Social Networks: Measuring, Characterizing, and Detecting Facebook Like Farms", ACM Transaction on Privacy and Security, 2017.
- 2) **Muhammad Ikram**, Hassan Jameel Asghar, Mohamed Ali Kaafar, Balachander Krishnamurthy, and Anirban Mahanti, "Towards Seamless Tracking-Free Web: Improved Detection of Trackers via One-class Learning", PETS'17, Minneapolis, USA
- 3) Shehroze Farooqi, **Muhammad Ikram**, Emiliano De Cristofaro, Arik Friedman, Guillaume Jourjon, Mohamed Ali Kaafar, M. Zubair Shafiq, Fareed Zaffar, "The 1%: Identification and Role of Key Stakeholders in a Black-Hat Marketplace", APWG, eCrime'17, Scottsdale, Arizona.
- 4) **Muhammad Ikram**, Narseo Vallina Rodriguez, Suranga Seneviratne, Mohamed Ali Kaafar, Vern Paxson, "An analysis of the Privacy and Security Risks of Android VPN Permission-enabled Apps", ACM IMC'16, Santa Monica, USA.
- 5) **Muhammad Ikram**, Hassan Asghar, Mohamed Ali Kaafar and Anirban Mahanthi, "On the Intrusiveness of JavaScript on the Web", CoNext SW'14, Sydney, Australia.

Technical Reports

- 1) **Muhammad Ikram**, Lucky Onwuzurike, Shehroze Farooqi, Emiliano De Cristofaro, Arik Friedman, Guillaume Jourjon, Mohammad Ali Kaafar, M. Zubair Shafiq, "Combating Fraud in Online Social Networks: Detecting Stealthy Facebook Like Farms", <https://arxiv.org/abs/1506.00506>, 2016.
- 2) Shehroze Farooqi, **Muhammad Ikram**, Emiliano De Cristofaro, Arik Friedman, Guillaume Jourjon, Mohamed Ali Kaafar, M. Zubair Shafiq, Fareed Zaffar, "Characterizing Seller-Driven Black-Hat Marketplaces", <https://arxiv.org/abs/1505.01637>, 2015.

References

- o **Mohamed Ali (Dali) Kaafar, PhD**, Group Leader, Networks Group, CyberPhysical Systems Research Program, Data61-CSIRO (previously NICTA), Australia. Cell: (0435)-747-249. Email: Dali.Kaafar@data61.csiro.au.
- o **Emiliano De Cristofaro, PhD**, Associate Professor, Dept. of Computer Science, University College London, United Kingdom. Email: e.decrisofaro@ucl.ac.uk
- o **Narseo Vallina-Rodriguez, PhD**, Research Scientist, Networking and Security Group, International Computer Science Institute (ICSI), Berkeley, California, USA. Assistant Research Professor at IMDEA Networks, Madrid, Spain. Phone: +34 91 481 6956 Email: narseo@icsi.berkeley.edu or narseo.vallina@imdea.org.
- o **Zubair Shafiq, PhD**, Assistant Professor, Dept. of Computer Science, The University of Iowa, Iowa City, IA, USA. Phone: (319) 335-0742. Email: zubair.shafiq@uiowa.edu.