

Mohammad Nauman

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▷ Education

Postdoctorate

2015-2017, Max Planck Institute for Software Systems, Germany

Research Domain: Android Security

Research Advisor: Prof. Dr. Michael Backes. Research Group: CISPA

Funded by the Max Planck Institute for Software Systems through a Foreign Researcher Grant

PhD (IT) – System Security

2014, Universiti Kuala Lumpur, Malaysia

Research Track

Domain of Research: Security and Privacy

Thesis Title: Extending User Privacy on Virtual Machine based Smartphones through Resource Usage Control

MS Software Engineering

2008, City University, Peshawar

CGPA: 3.33

Research Topic: Common Sense and Folksonomy: Engineering a Model for an Intelligent Search System

BSc (Hons)

2004, University of Peshawar (Institute of Management Sciences)

Specialization: IT. CGPA: 3.9

Was awarded merit scholarship for first semester.

Courses included both Computer Science (programming, databases, artificial intelligence, and hardware) and Business (accounting, management and logic) subjects.

F.Sc. (Pre Medical)

2001, Edwardes College

Obtained 798 marks out of 1100 - 72.5%

Was awarded merit scholarship by Joseph Chamberlain College, UK.

IGCSE/O Levels

1999, UCLES Cambridge University

Obtained 3A*s, 1A, 2Bs and 2Cs

Obtained A* in Physics, Chemistry and Mathematics in IGCSE. Took English as a first language in IGCSE. Was awarded a B in the subject of Arts (Water Colours) taken as an optional course.

▷ Editorial Services

Editorial Board

Currently serving on the Editorial Board of The International Arab Journal of Information Technology - Indexed ISI - Impact Factor 0.724 (JCR 2016)

Program Committee

Served on the Program Committee of 6th International Conference on **Trust & Trustworthy Computing, London, UK** – the leading conference on Trusted Computing technologies

Journal and Conference Reviews

Reviewed papers for several journals including IEEE Computer, Springer TeleSys, Wiley Security and Communication Networks, and Elsevier EIS as well as several high-ranking conferences including Trust'11, Trust'12, SACMAT'12 among others.

▷ Refereed Journals Papers and Book Chapters (15)

Cluster Computing (Springer), 2017

Indexed: ISI, IF: 1.514

Nauman, M., Ali, T., Khan, S., Syed, T. A. **Deep Neural Architectures for Large Scale Android Malware Analysis.**

Cluster Computing. Indexed ISI. Impact factor: 1.514. Early access. Springer. May, 2017.

Cluster Computing (Springer), 2017

Indexed: ISI, IF: 1.514

Ali, T., Nauman, M., Jan, S. **Trust in IoT: dynamic remote attestation through efficient behavior capture.**

Cluster Computing. Indexed ISI. Impact factor: 1.514. Early access. Springer. May, 2017.

Journal of Supercomputing (Springer), 2016

Indexed: ISI, IF: 1.088

Ali, T., Ismail, R., Musa, S., Nauman, M., Khan, S. **Design and implementation of an attestation protocol for measured dynamic behavior.**

Journal of Supercomputing. Indexed ISI. Impact factor: 1.088. Vol. 73. No. 4. pp 1–28. Springer. April, 2017.

Information Sciences (Elsevier), 2016

Indexed: ISI, IF: 3.364

Nauman, M., Azam, N., Yao, J.T. **A three-way decision making approach to malware analysis using probabilistic rough sets**

Information Sciences. Indexed ISI. Impact factor: 3.364. Elsevier. Vol. 374 pp 193–209. December, 2016.

SCN (Wiley), 2016

Indexed: ISI, IF: 0.806

Khan, S., Nauman, M., Othman, A.T., Musa, S., Ali, T. **TSSDroid: realization of an efficient and usable TSS API for the Android software stack.**

Security and Communication Networks. Indexed ISI. Impact factor: 0.806. Wiley. July 2016.

SCN (Wiley), 2015

Indexed: ISI, IF: 0.806

Nauman, M., Khan, S., Othman, A.T., Musa, S. **Realization of a User-Centric, Privacy Preserving Permission Framework for Android**

Security and Communication Networks. Indexed ISI. Impact factor: 0.433. Wiley. February, 2015.

SCN (Wiley), 2012

Indexed: ISI, IF: 0.433

Alam, M., Ali, T., Khan, S., Khan, S., Ali, M., Nauman, M., Hayat, A., Khan, M.K., Alghathbar, K. **Analysis of Existing Remote Attestation Techniques**

Security and Communication Networks. Indexed ISI. Impact factor: 0.433. Wiley. Vol 5. No. 9. May, 2012. (Co-author)

IAJIT, 2011
Indexed: ISI, IF: 0.39

Nauman, M, Khan, S. **Design and Implementation of a Fine-grained Resource Usage Control Model for the Android Platform**
International Arab Journal of Information Technology. Indexed ISI/SCI-E. Impact Factor: 0.39. Vol. 8. No. 4. October 2011.

TeleSys (Springer), 2011
Indexed: ISI, IF: 1.163

Nauman, M., Khan, S., Rauf, A. **Using Trusted Computing for Privacy Preserving Keystroke-based Authentication in Smartphones**
Telecommunications Systems Journal. Indexed ISI. Impact factor: 1.163. Springer. July, 2011.

SP&E (Wiley), 2011
Indexed: ISI, IF: 1.148

Toegl, R., Winkler, T., Nauman, M. Hong, T. **Specification and Standardization of a Java Trusted Computing API**
Software: Practice and Experience. Indexed ISI. Impact factor: 1.148. Wiley. July, 2011. (Co-author)

MTA (Springer), 2011
Indexed: ISI, IF: 1.058

Alam, M., Zhang X., Nauman, M. Ali, T., Ali, M., Anwar, S., and Alam, Q. **Behavioral Attestation for Web Services Using Access Policies**
Multimedia Tools and Applications. Indexed ISI. Impact factor: 1.058. Volume 53. No. 1. Springer. May, 2011. (Co-author)

Information, 2010
Indexed: ISI, IF: 0.099

Ali, T., Alam, M., Nauman, M, Ali, T., Ali, M., Anwar, S. **A Scalable and Privacy Preserving Remote Attestation**
Journal of Information. Indexed ISI/SCI-E. Impact Factor: 0.099. October 2010. (Co-author)

IJPS, 2010
Indexed: ISI, IF: 0.554

Nauman, M, Ali, T., Khan, K., Alghathbar, K. **Information Flow Analysis of UCON**
International Journal of Physical Sciences. Indexed ISI/SCI-E. Impact Factor: 0.554. Vol. 5, Num. 6. pp 865-875. May 2010.

JWSR, 2010
Indexed: ISI, IF: 1.200

Alam, M., Zhang, X., Nauman, M, Ali, T. Hung, P.C.K. **Behavioral Attestation for Business Processes**
Journal of Web Services Research. Indexed ISI/SCI-E, Impact factor: 1.200. Vol. 7. Num 3. pp 52-72. April 2010. (Co-author)

Book Chapter, 2010
Springer

Nauman, M., Khan, S., Khan, S. **Helplets: A Collaborative Help Collection and Retrieval Architecture for Web-enabled Systems**
In Web-based Support Systems by J.T. Yao and Y.Y. Yao

▷ **Selected Conference Publications (30)**

International (IEEE), 2017
EuroS&P'17 – Paris, France

Backes, M., Nauman, M. **LUNA: Quantifying and Leveraging Uncertainty in Android Malware Analysis through Bayesian Machine Learning**
2nd IEEE European Symposium on Security and Privacy (Euro S&P '17) Paris, France. April, 2017

International (Springer), 2015
RSKT'15 – Tainjin, China

Nauman, M., Azam, N., Yao, J.T. **A Three-way Decision Making Approach to Malware Analysis**
10th International Conference on Rough Sets and Knowledge Technology (RSKT'15) LNCS 9436, Tainjin, China. November, 2015

International (ACM), 2014
IMCOM'14 – Siem Reap, Cambodia

Nauman, M., Khan, S., Othman, A.T., Musa, S. **Transforming High-Level Requirements to Executable Policies for Android**
ACM Conference on Ubiquitous Information Management and Communication (IMCOM 2014). Siem Reap, Cambodia. January, 2014.

International (Springer), 2010
Trust'10 – Berlin, Germany
⇒ Citations: 75+

Nauman, M., Khan, S., Zhang, X., Seifert, J-P **Beyond Kernel-level Integrity Measurement: Enabling Remote Attestation for the Android Platform**
3rd International Conference on Trust and Trustworthy Computing (Trust 2010). Berlin, Germany. June, 2010.

International (ACM), 2010
ASIACCS'10 – Beijing, China
⇒ Citations: 640+

Nauman, M., Khan, S., Zhang, X. **Apex: Extending Android Permission Model and Enforcement with User-defined Runtime Constraints**
ACM Symposium on Information, Computer and Communication Security (ASIACCS'10). April, 2010.

International (ACM), 2009
STC'09 – Chicago, USA

Toegl, R., Winkler, T., Nauman, M. and Hong, T. **Towards Platform Independent Trusted Computing**
Annual Workshop on Scalable Trusted Computing (STC 2009) in conjunction with 16th ACM Conference on Computers and Communications Security (CCS'09). November, 2009.

International (Springer), 2009
Trust'09 – Oxford, UK
⇒ Citations: 30+

Nauman, M., Alam, M., Zhang, X., Ali, T. **Remote Attestation of Attribute Updates and Information Flows in a UCON System**
International Conference on Technical and Socio-economic Aspects of Trusted Computing (Trust 2009) Oxford, UK. April, 2009. Talk sponsored by ICT R&D Fund, Pakistan.

International (CEUR), 2008
SemSearch'08 – Tenerife, Spain

Nauman, M., Khan, S., Amin, M., Hussain, F **Resolving Lexical Ambiguities in Folksonomy Based Search Systems through Common Sense and Personalization**
Semantic Search 2008 Workshop, Tenerife, Spain. June, 2008.

International (ACM), 2008
SACMAT'08 – Colorado, USA
⇒ Citations: 70+

Alam, M., Zhang, X., Nauman, M., Ali, T., Seifert, J-P **Model-based Behavioral Attestation**
ACM Symposium on Access Control Models and Technologies, Colorado, USA. June, 2008.

International (IEEE/ACM/WIC), 2007
WT07 – Silicon Valley, USA
⇒ **Citations: 25+**

Nauman, M. and Khan, S. **Using Personalized Web Search for Enhancing Common Sense and Folksonomy Based Intelligent Search Systems**
International Conference on Web Intelligence, Silicon Valley, USA. Published by the IEEE Computer Society Press.

International (IEEE), 2007
CSEE&T'07 – Dublin, Ireland
⇒ **Citations: 10+**

Nauman, M. and Uzair, M. **SE and CS Collaboration: Training Students for Engineering Large, Complex Systems**
20th International Conference on Software Engineering Education and Training, Dublin, Ireland. Published by the IEEE Computer Society Press. Talk sponsored by the CSEE&T and Dublin City University, Ireland.

Others: *h-index: 13; i10-index: 17*

A complete list of all 30 conference publications to date is available at <http://recluze.wordpress.com/publications>

▷ **Countries Visited**

Ireland
2007

For presentation of a paper at 20th International Conference on Software Engineering Education and Training (CSEE&T)
Sponsored by CSEE&T and Dublin City University, Ireland

USA
2009

For presentation of a paper at the 4th International Workshop on Scalable Trusted Computing
Held in conjunction with 16th ACM Conference on Computers and Communication Security (CCS'09). Sponsored by Higher Education Commission of Pakistan

United Kingdom
2009

For presentation of a paper at International Conference on Technical and Socio-Economic Aspects of Trusted Computing (Trust 2009)
Sponsored by ICT R&D Fund, Pakistan under the project "Dynamic Behavioral Attestation for Mobile Platforms"

Germany
2015

For an invited talk at Universität des Saarlandes, Saarbrücken, Germany
Funded by Center for IT-Security, Privacy and Accountability (CISPA) at Universität des Saarlandes

Spain
2016

As a visiting scholar to Machine Learning Summer School (MLSS2016) at Cádiz, Spain
Funded by the Max-Planck Institute for Software Systems Germany

France
2016

For a talk at the 2nd IEEE European Symposium on Security and Privacy (Euro S&P '17), Paris, France.
Funded by the Max-Planck Institute for Software Systems Germany

Malaysia
2011-2013

As a PhD Candidate and for presenting papers in several conferences

▷ **Experience**

Assistant Professor
Jan 2015 – to-date

FAST National University of Computer and Emerging Sciences, Peshawar
Taught several courses to **BS, MS and PhD** students. Job responsibilities included teaching in areas of Software Engineering, Secure Systems, Applied Algorithms, Advanced Programming and Computer Networks. Supervised BS final year projects and MS research students. Also remained a Final Year Project coordinator and served on the Campus Graduate Studies Committee. Acting as the Principle Investigator in COLAB Research Lab.

Research Associate
Dec 2007 – Dec 2009

Institute of Management Sciences, Peshawar
Research Associate in the research project, "Towards Trusted Web Services for Mobile Devices" and "Dynamic Behavioral Attestation for Mobile Platforms".

Lecturer
Mar 2006 – Nov 2007

City University of Science and Information Technology
Taught MS, MCS and BCS for three semesters in the University.
Courses taught: Software Quality Assurance (MS), Visual Programming, Artificial Intelligence, Intelligent Systems, Object Oriented Programming and Modern Programming Tools

▷ **Funded Research Projects (5)**

"Expert"
2008 – 2011

JSR 321: Trusted Computing API for the Java Platform
Worked as an "Expert" in the Expert Group of JSR321 brought together to create an Trusted Computing API for Java Platform. The group includes several industry leaders such as IAIK Graz University, Samsung, Intel and Sun Microsystems/Oracle. Details available at: <http://www.jcp.org/en/jsr/detail?id=321>

Consultant
2009

Constrained Intents: Extending Android Security for Intent Policies
Funded by the ICTR&D Fund, Islamabad, Pakistan. 24 months.
Participated in idea generation and defense, team structuring.

Research Scholar
2008 – 2010

Dynamic Behavioral Attestation for Mobile Platforms
Funded by the ICTR&D Fund, Islamabad, Pakistan. 24 months.
Participated in idea generation and defense, paper writing and prototype development.

Research Associate
2007 – 2009

Towards Trusted Web Services for Mobile Devices

Funded by the Institute of Management Sciences, Peshawar, Pakistan. 24 months.
Participated in idea generation and defense, prototype development and project execution.

▷ **Skills**

<i>Security</i>	Expertise in state of the art technologies such as Trusted Platform Module (TPM) and Trusted Computing, Identity Management Frameworks (Shibboleth), Android smartphone source code, the Linux kernel, Security Enhanced Linux and several other security architectures, protocols and algorithms.
<i>Programming Languages</i>	Skilled and experienced in high and low level languages including Full stack Javascript, Java, PHP, Ruby, Python, C/C++, Visual Basic, .Net languages, Prolog and Lisp. Also very well versed with version control systems such as SVN, Git and mercurial.
<i>System Analysis and Design</i>	Proficiency in system analysis and design of fairly complex system including Linux Kernel, ERPs for SMEs, e-commerce, MISs and CMSs. Experienced with large-scale production-level systems.
<i>Formal Specification and Verification</i>	Working knowledge of formal specification of security systems using Z Notation and Isabelle.
<i>Artificial Intelligence</i>	Development of basic artificially intelligent systems using Lisp and Prolog. Also, a field of research in MS alongside Software Engineering.

▷ **References (3)**

Prof. Michael Backes <i>Director CISPA, Max Planck Fellow for MPI-SWS</i>	Email: backes@mpi-sws.org * Relationship: Postdoc Advisor
Dr. Xinwen Zhang <i>Director of R&D, Samsung Research America, 3920 Freedom Circle, Santa Clara, CA 95054, USA</i>	Email: xinwenzhang (at) gmail.com * Web: http://profsandhu.com/zhang Relationship: Collaborator/co-author
Dr. Ronald Toegl <i>Siemens Austria, Industrial Automation, 8020 Graz, Austria</i>	Email: ronald (at) toegl.at * Phone: +43 650-848-2842 Relationship: Colleague/Collaborator

** Preferred means of contact
Further references can be provided on requirement.*