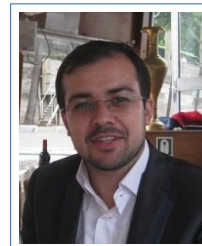


Hamid R. Ghaeini

Curriculum Vitae



Education & Research

- 2019–Now **Visiting Researcher**, *CISPA - Helmholtz Center for Information Security*, Saarbrücken, Germany.
(Apr. 2019–Now)
- 2015–2019 **Ph.D. Information Systems Technology and Design**, *Singapore University of Technology and Design*, Singapore, Pillar of Information Systems Technology and Design.
Thesis: Threats to Industrial Control Systems and Process-based Countermeasures
- 2017–2018 **Academic Exchange**, *Technische Universität Darmstadt*, Darmstadt, Germany, Department of Computer Science.
(Oct. 2017–Mar. 2019)
- 2010–2013 **M. Eng. Computer Engineering**, *Tarbiat Modares University of Tehran*, Tehran, **Awarded National Exemption for Outstanding Students**, **Awarded Iranian Telecommunication Research Center (ITRC) Scholarship**.
Thesis: An adaptive packet loss recovery scheme in peer-to-peer video streaming over the mobile networks
- 2006–2010 **B. Eng. Computer Engineering**, *Arak University*, Arak, **First Class Honours**, **Awarded Outstanding Students Award**.
Thesis: Development of a High Resolution Wave Forecasting System by Using Parallel Processing Technology

Selected Publication

- 2019 H.R. Ghaeini, M. Chan, R. Bahmani, F. Brasser, L. Garcia, J. Zhou, A. Sadeghi, N. O. Tippenhauer, S. Zonouz, "*PAtt: Physics-based Attestation of Control Systems*", Accepted at the 22nd International Symposium on Research in Attacks, Intrusions, and Defenses (RAID 2019), Beijing, China, 2019.
- 2019 H.R. Ghaeini, N. O. Tippenhauer, J. Zhou, "*Zero Residual Attacks on Industrial Control Systems and Stateful Countermeasures*", Accepted at the 14th International Conference on Availability, Reliability, and Security (ARES 2019), Canterbury, UK, 2019..
- 2018 H.R. Ghaeini, D. Antonioli, F. Brasser, A. Sadeghi, N. O. Tippenhauer, "*State-Aware Anomaly Detection for Industrial Control Systems*", The 33rd ACM/SIGAPP Symposium On Applied Computing (SAC), Pau, France.

- 2017 D. Antonioli, H. R. Ghaeini, S. Adep, M. Ochoa, N. O. Tippenhauer, *"Gamifying ICS Security Training and Research: Design, Implementation, and Results of S3"*, ACM Workshop on Cyber-Physical Systems Security and Privacy, ACM Conference on Computer and Communications Security (CCS), Dallas, Texas.
- 2016 H.R. Ghaeini, N. O. Tippenhauer, *"Hamids: Hierarchical monitoring intrusion detection system for industrial control systems"*, ACM Workshop on Cyber-Physical Systems Security and Privacy, ACM Conference on Computer and Communications Security (CCS), Vienna, Austria.
- 2015 H.R. Ghaeini, B. Akbari, B. Barekatain, A. Trivino Cabrera, *"Adaptive video protection in large scale P2P video streaming over mobile WMNs"*, Wiley International Journal of Communication Systems.
- 2014 B. Barekatain, D. Khezrimotlagh, M. Aizaini Maarof, H.R. Ghaeini, A. Ariza Quintana, and A. Trivino Cabrera. *"Efficient P2P Live Video Streaming Over Hybrid WMNs Using Random Network Coding"* Wireless Personal Communications.
- 2014 H.R. Ghaeini, B. Akbari, *"Peer-to-Peer Adaptive Forward Error Correction in Live Video Streaming over Wireless Mesh Network"*, The 12th International Conference on Wired and Wireless Internet Communications, Paris, France.
- 2013 B. Barekatain, D. Khezrimotlagh, M. Aizaini Maarof, H.R. Ghaeini, S. Salleh, A. Ariza Quintana, B. Akbari, A. Trivino Cabrera, *"MATIN: A Random Network Coding Based Framework for High Quality Peer-to-Peer Live Video Streaming"*, PloSone, Public Library of Science.
- 2012 H.R. Ghaeini, B. Akbari, B. Barekatain, *"A Comprehensive Evaluation of Different Loss Recovery Schemes in Peer-to-Peer Live Video Streaming over WMNs"*, International Conference on Connected Vehicles and Expo, Beijing, China.

Patents

- 2019 H.R. Ghaeini, et. al., *"Cyber-Physical Attestation of Control Processes"*, Germany. Pending at TU Darmstadt
- 2018 H.R. Ghaeini, N. O. Tippenhauer, *"Industrial Control Systems Anomaly Detection by Learning Algorithms with Physical Process Features"*, Singapore. Pending at Intellectual Property Office of Singapore

Projects

- 2019-Now **Security Testing of Control Processes**, with the collaboration of the CISPA Helmholtz Center for Information Security.
- 2017-2019 **Process-based Attestation of Control Systems**, with the collaboration of the TU Darmstadt, CISPA Helmholtz Center for Information Security, Singapore University of Technology and Design, University of California at Los Angeles, and Rutgers University.
- 2015-2017 **Cyber and Physical Anomaly Detection in ICS**, with the collaboration of the TU Darmstadt, CISPA Helmholtz Center for Information Security, and Singapore University of Technology and Design.

2010-2014 **Peer-to-Peer Video Streaming over Wireless Mesh Networks**, *with the collaboration of the Tarbiat Modares University of Tehran, University of Malaga, University of Technology Malaysia, and ITRC.*

Service

2018 - Now **Outstanding Reviewer**, Journal of King Saud University - Computer and Information Sciences, Elsevier.

2015 - Now **Reviewer**, Journal of Wireless Personal Communications, Springer.

2015 - Now **Reviewer**, Journal of China Communications, IEEE.

2014 **Session Chair**, The 12th International Conference on Wired and Wireless Internet Communications, Paris, France.

2017 - Now **Reviewer**, International Journal of Information & Communication Technology Research (IJICTR).

2015 **Reviewer**, Journal of KSII Transactions on Internet and Information Systems, TIIS.

2018 **Reviewer**, International Conference on Advanced Science and Engineering (ICOASE 2018), University of Zakho, Iraq.

Professional Experiences

Jan. 2016 - **Teaching Assistant**, Singapore University of Technology and Design,
May 2016 Singapore, Elements of Software Construction (50.003).

Sep. 2015 - **Teaching Assistant**, Singapore University of Technology and Design,
Jan. 2016 Singapore, Networks(50.012).

2014 - 2015 **University Instructor**, University of Bojnord, Programming Languages.

2014 - 2015 **University Instructor**, University of Bojnord, Computer Programming.

2013-2015 **University Instructor**, University of Bojnord, Design and Implementation of Programming Languages.

2013 - 2014 **University Instructor**, University of Bojnord, Project.

2012 - 2014 **University Instructor**, University of Bojnord, Multimedia Systems.

2012 - 2013 **University Instructor**, University of Bojnord, Fundamentals and Applications of Computer.

Awards and Honours

2018 **PhD** Outstanding Reviewer, Journal of King Saud University - Computer and Information Sciences

2018 **PhD** ACM SIGAPP Travel grant, The 33rd ACM/SIGAPP Symposium On Applied Computing (SAC), France

2017 **PhD** Fostering Industrial Research Success Together (FIRST) Industry Workshop, Singapore

2017 **PhD** DAAD, Bi-nationally Supervised Doctoral Degrees, Germany

2016 **PhD** Travel grant, International School on Foundations of Security Analysis and Design, Italy
2015 **PhD** Travel Grant, PROSECCO Code camp, Belgium
2015 **PhD** Travel Grant, IEEE ComSoc, Italy
2013 **M. Eng.** Travel Grant, PROSECCO, Finland
2012 **M. Eng.** Travel Grant, ITRC, China
2012 **M. Eng.** ITRC Scholarship, Iran
2010 **B. Eng.** Outstanding Students Award, Iran
2010 **B. Eng.** First Class Honours, Iran
2009 **B. Eng.** Honours of ACM Programming Contest, Iran

Computer Skills

Programming Languages: C++, C, Java, MATLAB, Python, Assembly, FORTRAN

Operating Systems: Linux, Windows, Macintosh

Paralle Processing: CUDA, OpenMP, MPI

IDS: Bro, Snort, Suricata

Security Technologies: TPM, Secure Boot, PUF

Controller: SIEMENS, Wago, CoDeSys, OpenPLC, Allen-Bradley, ABB

Machine Learning: MATLAB, Python Scipy, Intel Movidius, Weka

Web: Django, HTML, XML, JAVASCRIPT, Apache, Tomcat, Web Services (SOAP)

IDE: Eclipse, NetBeans, VisualStudio

Database: ElasticSearch, MS SQL, MySQL

Languages

- English: *Professional Working Proficiency*
- Persian: *Native*
- German: *B1*