

Rasheed Hussain, PhD [Resume]



CONTACT INFORMATION

Room No. 405,
Secure System and Network Engineering (SNE),
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Innopolis University (IU),
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Objective

To pursue a career in academia with a challenging work environment by using expertise in teaching, curriculum development and cutting edge research activities. Furthermore, to work in an institution where I can further polish my teaching, research, technical, and managerial skills.

RESEARCH INTERESTS

Information Security and Privacy, Cryptography, Applied Cryptography, Vehicular Ad Hoc Network (VANET), Intelligent Transportation System, Content-Centric Networking, Electric Vehicles, Internet of Things (IoT), Cloud Computing, VANET Clouds, Security Protocols, Mobile Clouds, Vehicular Social Networks, Network Security, and Cyber Security, Blockchain.

ONLINE PROFILES

- Google Scholar: <https://scholar.google.com/citations?user=1LjRFakAAAAJ&hl=en&oi=ao>
- LinkedIn: https://www.linkedin.com/profile/public-profile-settings?trk=prof-edit-edit-public_profile
- Professional Webpage: <https://sites.google.com/site/rasheedinfosec/>

EDUCATION

Hanyang University, South Korea

Postdoctoral Research Fellow, Computer Engineering, March 2015-August 2015

- Research Topics: Security and Privacy in VANET, VANET-based Clouds, Mobile Social Networks, Internet of Things, Cloud Computing, Applied Cryptography
- Advisor: Professor Heekuck Oh

Hanyang University, South Korea

Ph.D., Computer Engineering, February 2015 (CGPA: 4.00/4.00, 100 %)

- Dissertation Topic: **Secure and Privacy-aware Beacon-based Communication in VANET** [CLICK HERE to download](#)
- Advisor: Professor Heekuck Oh

Hanyang University, South Korea

Korean Language, Sep 2010 - Aug 2011

- Certification: Test of Proficiency in Korean Language (TOPIK Intermediate Level)

Hanyang University, South Korea

M.S., Computer Engineering, August, 2010 (CGPA: 4.00/4.00, 100%)

Advisor: Professor Heekuck Oh

University of Engineering and Technology, Peshawar, Pakistan

B.Sc. Engg., Computer Software Engineering, May, 2007, (CGPA: 3.42/4.00, 84%)

HONORS AND
AWARDS

ACM Distinguished Speaker (Dec. 2018 - Dec. 2021)

Fully Funded M.S. Scholarship at Hanyang University, South Korea (2008-2010)

Ph.D Scholarship awarded by NIIED (KGSP), Government of South Korea (2010-2015)

Crypto Award by K-Crypto Forum, South Korea (Nov. 2014)

IEEE Student Travel Grant for IEEE MILCOM 2014

Best paper awards (3 times) in KIPS conference and CISC conferences, South Korea

Employee of the year 2017 Award, Innopolis University, Russia

PROFESSIONAL
MEMBERSHIP

Senior Member IEEE

Member ACM

TRAININGS,
CERTIFICATIONS
AND WORKSHOPS

- Trainer Development Workshop (TDW) May 2018, Innopolis University - Certified Trainer in Education and Instructional Skills
- Professional course on Supervising PhD Research, Utrecht University, Netherlands (April 2018)
- University Teaching Qualification, Basis Kwalificatie Onderwijs (BKO) at University of Amsterdam (UvA)(EU teaching certification)
- Instructional Skills Workshop (ISW), May 18-20, 2017, Innopolis University, Russia
- ISW Facilitators Development Workshop, May 22-26, 2017, Innopolis University, Russia
- Teaching Excellence Workshop by INNOVAHIED at Innopolis University (March 9-11, 2017)
- Official Blogger for 2014 Incheon Asian Games, South Korea
- Kauffman FastTrac Planning the Entrepreneurial Venture Program, November 2014, Korea Entrepreneurship Foundation, South Korea
- Quality of Life monitor for Seoul Metropolitan Government (2013-14), Seoul, South Korea
- Leadership conference for international students (LCIS), 2010, Corps of Youth Global Leader (CYGL), Muju Resort, organized by The Ministry of Education, Science and Technology, The committee for G20 Seoul Summit, South Korea
- Teaching Methodologies Workshop by Higher Education Commission, Pakistan (June 2007)

ACADEMIC
EXPERIENCE

Innopolis University, Innopolis, Tatarstan, Russia *Associate Professor* **December 2018 - Date**
Institute of Cyber Physical Systems, Head of Secure System and Network Engineering (SNE)

- Teaching courses (Networks and Security related courses)

- Head of Networks and Blockchain Lab at Innopolis University
- Supervision of MS students research projects
- Conducting research in different fields that include, but not limited to, Vehicular networks, Vehicular Social networks, cloud computing, malware analysis, and so forth
- Working on different research projects

Innopolis University, Innopolis, Tatarstan, Russia *Assistant Professor*
December 2018

June 2016 -

Institute of Informatics, Secure System and Network Engineering (SNE)

- Teaching courses (Networks and Security related courses)
 - Classical Internet Applications (CIA) (2016-2017)
 - Security of Systems and Networks (SSN) (2016-2017)
 - Advanced Security (AS)
 - Offensive Technologies (OT)
 - Discrete Mathematics (DM) (Bootcamp 2016 and 2017)
 - Bash Scripting (Bootcamp 2016 and 2017)
 - Technical Writing (Bootcamp 2017)
- Head of SNE research group at Innopolis University
- MS students research projects
 - Backdooring Public Key Algorithms
 - Graph Watermarking
 - Energy profiling based malware analysis
 - Breaking neural cryptography
 - Exploiting social media storage
- Conducting research in different fields that include, but not limited to, Vehicular networks, Vehicular Social networks, cloud computing, malware analysis, and so forth
- Working on different research projects

University of Amsterdam (UvA), Amsterdam, *Guest Professor and Consultant* **September 2015 - June 2016**

Institute of Informatics, System and Network Engineering (SNE). I am working as a consultant and guest professor for Innopolis University, Russia at UvA, Amsterdam. Innopolis University is going to deploy SNE Masters program. SNE is currently offered by UvA and is regarded as the best MS program in Netherlands and Europe in the Information Security. Furthermore I also received the University Teaching Qualification also known as Basis Kwalificatie Onderwijs (BKO) at UvA.

Hanyang University, South Korea

*Post-doctoral Research Fellow at InfoSec Lab*¹

March, 2015 - August, 2015

Conducting research in the area of Information Security and Privacy with prime focus on VANET, IoT, Cloud Computing, Mobile Clouds, Big data, and so forth. Besides, publishing research outcomes in the world renowned journals and conferences.

Graduate Student

September, 2008 - February, 2015

Includes Ph.D. research, Ph.D. and Masters level course work, conducting research and publishing papers.

¹Information Security and Privacy Lab

Teaching Assistant

March, 2013 - December 2013

Duties at various times have included giving homeworks to students and grading them. Conducting examinations was also part of my duty.

- Analysis of Algorithms, Spring 2013.
- Computer Security

University of Engineering and Technology, Peshawar, Pakistan

Lecturer and Semester Coordinator

June 2007 - August, 2008

Taught undergraduate level courses for B.Sc Engineering in Computer Software Engineering in N-WFP University of Engineering and Technology. I also served as the controller of examinations in the aforesaid department.

THESIS SUPERVISION

- **PhD Thesis: 2018-**
 - Subham Chakraborty
 - Topic: Image forensics
- **PhD Thesis: 2018-**
 - Svetlana Ostrovskaya
 - Topic: Behavior profiling for cybersecurity in IoT
- **PhD Thesis (co-supervised): 2014-2018**
 - Marwa Saidi
 - Topic: Secure and Efficient Image Steganography

RESEARCH PROJECTS

- Project funded by Skolkovo Foundation, Russia (2017-) (*Documentation yet to be completed*)
- Non-GPS Vehicular Network-based cooperative real-time navigation
- Realization of DSRC-based Connected Car Technology, Applications, and Services through Smartphone *For Russian Foundation for Basic Research (RFBR)*

MS STUDENTS SUPERVISION (RESEARCH PROJECTS)

Currently on-going projects

- NDN-driven depth-based forwarding in underwater sensor networks
- Interface ranking in Named Data Networking
- Efficient CS management in Named Data Networking
- M2M communication and auditing in Electric Autonomous Vehicles through Blockchain Technologies
- GDPR and AI-based API Security with Royal Bank of Canada (RBC)

Completed Projects MS-SNE

[2019]

- Decentralized passive detection of rogue hosts
- Using Containerized Environment for Malware Analysis
- Blockchain-based PKI infrastructure

- Open-source Framework for Security Event Monitoring Visualization Based on Remote Desktop Protocol-Related Event Logs
- Comparison of Distributed Ledger Technologies for Smart Contract Development
- Passive Scan on network processor CC3100
- Location-based Secret Sharing Protocol
- Analysis of the FIDO2 standard and implementation of the biometric Android FIDO2 Key
- Licensing and software protection in Docker environment

[2018]

- BFT consensus in blockchain
- Exploring Shoda's Database
- Privacy in Social Networks: Facebook Analysis
- Probabilistic estimation of honeypot detection
- IaaS and PaaS from scratch
- Trust management in software-defined networks (SDN)
- Collaborative DDoS mitigation in SDN
- Secure Telemetry in Sailfish OS

[2016-17]

- Samsung Smart TV Security Overview
- Security Analysis of Telegram Voice Calls
- Backdooring Android Firmware
- Using Buffer Overflow Vulnerabilities for Code Execution
- Mobile Application Security Assessment Using OWASP Mobile Security Project
- ARP Covert Channel
- Spoofing Android Camera
- Mapping IP address to Accounts in Social Networks
- WiFi-based Access Control Service
- Security in Public Places: Identifying Drug Intoxication by the Pupil Size
- Non-destructive Attacks through Physical Access to Devices
- Forging Virtual Environments by Untrusted Cloud Providers
- File System Based on Social Networks Media Storage
- Graph Watermarking
- Analysis of Neural Cryptography-based Authenticated Key Exchange Protocol with Secret Boundaries
- Analysis of Resource Consumption for Malware Detection in Mobile Environment
- Backdooring Asymmetric Crypto Algorithms
- Analysis of Security Issues in Open-source Software
- Analysis of Bitcoin Block-chain Database for Clustering Wallets

RESEARCH
COLLABORATIONS

- Prof. Sherali Zeadally, University of Kentucky, USA
- Prof. Ekram Hossain, University of Manitoba, Canada
- Prof. Donghyun Kim, Kenessaw State University, Atlanta, USA
- Dr. Junggab Son, Kenessaw State University, Atlanta, USA
- Prof. Heekuck Oh, Hanyang University, South Korea
- Prof. Abderrahim Benslimane University of Avignon, France
- Dr. JooYoung Lee, Innopolis University, Russia
- Prof. Adil Khan, Innopolis University, Russia
- Prof. Joel J. P. C. Rodrigues, National Institute of Telecommunications (Inatel), Brazil
- Dr. Fatima Hussain, Ryerson University, Canada
- Dr. Syed Hassan Ahmad, Georgia Southern University, USA
- Prof. Safdar Hussain Bouk, DGIST, Korea

PUBLICATIONS

PAPERS UNDER
REVIEW

S. Zafar, **R. Hussain**, F. Hussain, and S. Jangsher, “Interplay between Big Spectrum Data and IoT: A Systematic Survey,” *under review* **Computer Networks, Elsevier**

M. Saidi, R. Rhouma, **Rasheed Hussain**, and O. Mannai, “Osteg: A New Steganalysis-Resistible Chaotic Image Steganography Mechanism based on Otsu Clustering,” *under review* **IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)**

B. Nour, F. Li, H. Khelifi, **Rasheed Hussain**, H. Moun gla, and S.H. Bouk, “A Collaborative Multi-Metric Interface Ranking Scheme for Named Data Networks,” *under review* **IEEE Transactions on Network and Service Management**

A. Ali, F. Hussain, **Rasheed Hussain**, A. Ferworn, “Multi-band Multi-Hop WLANs for Disaster Relief and Public Safety Applications,” *under review* **IEEE Global Communications Conference (GLOBECOM) 2019**

A.T. Abbasi, N. Naqvi, **Rasheed Hussain**, and A. Khan, “Authentication and Copyright Protection of Urdu Text (A Zero Steganography Approach),” *under review* **Theoretical Computer Science, Elsevier**

Rasheed Hussain, JooYoung Lee, and Sherali Zeadally, “Trust in VANET: Current Solutions and Future Challenges,” *under review* **IEEE Transactions on Intelligent Transportation Systems**

S.M.A. Kazmi, T.M. Dang, I. Yaqoob, A. Ndikumana, E. Ahmed, **R. Hussain**, and C.S. Hong, “Infotainment Enabled Smart Cars: A Joint Communication, Caching and Computation Approach,” *Revision submitted* **IEEE Transactions on Vehicular Technology**

F. Hussain, **Rasheed Hussain**, S.A. Hassan, and E. Hossein, “Machine Learning and Internet of Things Security: Research Results and Future Challenges,” *under review* **IEEE Communication Surveys and Tutorials**.

Rasheed Hussain, F. Hussain, and S. Zeadally, “VANET Security through 5G,” *Minor revision* **Future Generation Computer Systems (FGCS)**

F. Ahmad et al., “Securing Connected and Autonomous Vehicles via Trust Management,” *under review* **IEEE International Conference on Connected Vehicles and Expo (ICCVE) 2019**

BOOK CHAPTERS

Rasheed Hussain, Z. Rezaeifar, J. Son, D. Kim, and H. Oh, “Exploring the Use of Big Data for Malware Detection and Mitigation Techniques in Android Environment,” *Big Data: Storage, Sharing, and Security (3S)* (edited by Fei Hu), Taylor & Francis LLC, CRC Press, 2015. ***In Press***

PAPERS TO BE
SUBMITTED SOON

Rasheed Hussain, F. Hussain, S. Zeadally, and J. Lee, “On the Adequacy of 5G Security for Vehicular Ad-hoc NETWORKS (VANETs),” *TBD*

F. Hussain, **Rasheed Hussain**, S.A. Hassan, “Machine Learning and Resource Management in Internet of Things: Research Results and Opportunities,” *to IEEE Communication Surveys and Tutorials*.

S. Burikova, J. Lee, **R. Hussain**, I. Sharafitdinova, R. Dzheriev, F. Ahmad, C.A. Kerrache, S.M.A. Kazmi, and F. Hussain, “A New Trust Management Framework for Software-Defined Networks-based Internet of Things,” *under review (IEEE IEMCON 2019)*.

D. Mordovtsev, **Rasheed Hussain**, J. Lee, F. Ahmad, C.A. Kerrache, F. Hussain, and F. Kurugollu, “A Hybrid Social-Aware Trust Management System for Vehicular Ad hoc Networks,” *to be submitted to IEEE WiMob 2019*

B. Nour et al., “Access Control in Named Data Networking,” *for IEEE Communications Surveys and Tutorials*

H. Farahneh et al., “VLC channel modeling for V2V communication,” *TBD ...*

F. Z. Bousbaa et al., “Group Data Communication in VANETs: A Systematic Review,” *to be submitted to IEEE Communications Surveys and Tutorials*

PAPERS IN
PREPARATION

F. Hussain and Rasheed Hussain, “GDPR and AI-based API Security,” *for IEEE IT Professional*

A. Sabirov et al., “Backdooring Cryptographic Algorithms,” **TBD...**

K. Bayad et al. “A Secure Commercial Ads Dissemination Scheme based on referral system for Vehicular Networks,” *for TBA ...*

F. Hussain et al. “Collaborative Intrusion Detection Systems in Wireless Networks,” *for IEEE Communication Surveys and Tutorials*

...Data Quality in VANET *for TBA...*

W. Ahmad et al. “Localization in VANET,” *for TBA...*

E. Milnikov, M. Boldorev, **Rasheed Hussain**, J. Lee, “Graph Watermarking ...,” *for IEEE Transactions on Information Forensics and Security (TIFS)*

SELECTED
PUBLICATIONS

[Newsletter Articles]

Fatima Hussain and **Rasheed Hussain**, "Deep Learning: Is it the Main Challenge behind Autonomous Vehicles Deployment?" **IEEE Internet Initiative**, September 2018.

[Peer-Reviewed Journals]

F. Ahmad, C.A. Kerrache, F. Kurugollu¹, and **R. Hussain**, "Realization of Blockchain in Named Data Networking-based Internet-of-Vehicles," *Accepted IEEE IT Professional*

H. Khelifi, S. Luo, B. Nour, H. Moun gla, Y. Faheem, **R. Hussain**, and A. Ksentini, "Named Data Networking in Vehicular Ad hoc Networks: State-of-the-Art and Challenges," **IEEE Communication Surveys and Tutorials** doi: 10.1109/COMST.2019.2894816 (Ranked 1 Journal of Telecommunications with Highest Impact Factor = 20.2)

M. Wazid, A.K. Das, **R. Hussain**, G. Succi, and Joel J.P.C. Rodrigues, "Authentication in cloud-driven IoT-based big data environment: survey and outlook," **Journal of Systems Architecture, Elsevier** Vol. xx, No. xx, 2018 <https://doi.org/10.1016/j.sysarc.2018.12.005>

C.A. Kerrache, N. Lagraa, **R. Hussain**, S.H. Ahmed, A. Benslamine, C.T. Calafate, J.C. Cano, and A.M. Vegni, "TACASHI: Trust-Aware Communication Architecture for Social internet of vehicles," **IEEE Internet of Things Journal**, 2018 10.1109/JIOT.2018.2880332

S.H. Bouk, S.H. Ahmed, **R. Hussain**, and Y. Eun, "Named Data Networking's Intrinsic Cyber-Resilience for Vehicular CPS," **IEEE Access Journal** Vol. 6, pp. 60570 - 60585, 2018, (10.1109/ACCESS.2018.2875890)

Rasheed Hussain and Sherali Zeadally, "Autonomous Vehicles: Current Solutions and Future Challenges" **IEEE Communication Surveys and Tutorials**, 2018, DoI: 10.1109/COMST.2018.2869360 (Ranked 1 Journal of Telecommunications with Highest Impact Factor = 20.2)

E. Barka, C. A. Kerrache, **R. Hussain**, N. Lagraa, A. Lakas, and S.H. Bouk, "A Trusted Lightweight Communication Strategy for Flying Named Data Networking," **Sensors, MDPI** 2018, 18(8), 2683; <https://doi.org/10.3390/s18082683>

R. Hussain, J. Lee, and S. Zeadally, "Autonomous Cars: Social and Economic Implications," **IEEE IT Professional**, vol. 20, no. 6, pp. 70-77, 1 Nov.-Dec. 2018.

L. Kong, G. Xue, K.Z. Ghafoor, **R. Hussain**, H. Sheng, and P. Zeng, "Real-Time Density Detection in Connected Vehicles," **IEEE Communication Magazine**, Volume: 56 , Issue: 10 , pp. 64-70, OCTOBER 2018 (Ranked 2 Journal of Telecommunications with 2nd Highest Impact Factor = 9.27)

Rasheed Hussain, D. Kim, J. Son, J. Lee, C.A. Kerrache, A. Benslimane, and H. Oh, "Secure and Privacy-Aware Incentives-Based Witness Service in Social Internet of Vehicles Clouds," **IEEE Internet of Things Journal** Volume: 5 , Issue: 4, pp. 2441-2448, Aug. 2018.

F.Z. Bhousbaa, N. Lagraa, C.A. Kerrache, F. Zhou, M.B. Yagoubi, and **R. Hussain**, "A Distributed Time-limited multicast algorithm for VANETs using incremental power strategy," **Computer Networks, Elsevier** Volume 145, 9, Pages 141-155, November 2018.

N. Naqvi, A.T. Abbasi, **R. Hussain**, M.A. Khan, and B. Ahmad, "Multilayer Partially Homomor-

phic Encryption Text Steganography (MLPHE-TS) (A Zero Steganography Approach),” **Wireless Personal Communications, Springer**, Volume 103, Issue 2, pp 15631585, Nov. 2018.

Q. Gul, S. Luo, L. Pan, W. Liu, **R. Hussain**, and S.H. Bouk, “SVPS: Cloud-Based Smart Vehicle Parking System Over Ubiquitous VANETs,” **Computer Networks, Elsevier** Volume 138, 19, Pages 18-30, June 2018.

J. Lee, **R. Hussain**, V. Rivera, and D. Isroilov, “Second Degree based Entity Resolution in Online Social Networks,” **Social Network Analysis and Mining, Springer** (2018) 8: 19. <https://doi.org/10.1007/s13278-018-0499-9>.

M. Ahmad. S. Protasov, A.M. Khan, **R. Hussain**, “Fuzziness-based active learning framework to enhance hyperspectral image classification performance for discriminative and generative classifiers,” **PLOS ONE**, January 2018. DoI: <https://doi.org/10.1371/journal.pone.0188996>.

Rasheed Hussain, S.H. Bouk, N. Javaid, A.M. Khan, and J. Lee, “Realization of VANET-based Clouds Services Through Named Data Networking,” **IEEE Communication Magazine** Volume: 56, Issue: 8, pp. 168-175, August 2018. (**Ranked 2 Journal of Telecommunications with 2nd Highest Impact Factor = 10.3**)

Rasheed Hussain, J. Son, D. Kim, M. Nogueira, H. Oh, A.O. Tokuta, and J. Seo, “PBF: A New Privacy-Aware Billing Framework for Online Electric Vehicles with Bidirectional Auditability,” **Wireless Communications and Mobile Computing Journal** Volume 2017, Article ID 5676030, 17 pages, DoI: <https://doi.org/10.1155/2017/5676030>.

M. Ahmad, A.M. Khan, and **R. Hussain**, “Graph-based Spectral feature learning,” **IET Image Processing**, Volume: 11, Issue: 12, pp. 1310-1316, 2017.

Rasheed Hussain, Z. Rezaeifar. J. Son, M.Z A. Bhuiyan, S. Kim, and H. Oh, “PB-MII: Replacing Static RSUs with Public Buses-based Mobile Intermediary Infrastructure in Urban VANET-based Clouds,” **Cluster Computing Journal**, Vol. 20, No. 3, pp. 22312252, 2017, DoI: 10.1007/s10586-017-0883-7

D. Kim, Y. Velasco, W. Wang, R.N. Uma, **Rasheed Hussain**, S. Lee, “New Comprehensive RSU Installation Strategy for Cost-Efficient VANET Deployment,” **IEEE Transactions on Vehicular Technology (TVT)**, Vol. 66, No. 5, pp: 4200-4211, 2016. DoI: 10.1109/TVT.2016.2598253.

J. Son, D. Kim, Z. Alam, *Rasheed Hussain*, and H. Oh, “A New Outsourcing Conditional Proxy Re-Encryption Suitable for Mobile Cloud Environment,” **Concurrency and Computation (Practice and Experience)**, Vol. 29, No. 14, 2017, Wiley.

Z. Rezaeifar, **Rasheed Hussain**, S. Kim, and H. Oh, “A New Privacy Aware Payment Scheme for Wireless Charging of Electric Vehicles,” **Wireless Personal Communications, Springer**, Volume 92, Issue 3, pp 10111028, 2017.

Rasheed Hussain, S. Kim, and H. Oh, “Traffic Information Dissemination System: Extending Cooperative Awareness among Smart Vehicles with Single-Hop Beacons in VANET,” **Wireless Personal Communications**, Vol. 88, No. 2, pp. 151-172, 2016.

Rasheed Hussain, Z. Rezaeifar, and H. Oh, “Secure and Privacy-aware Traffic Information as a Service in VANET-based Clouds,” **Mobile and Pervasive Computing, Elsevier (MPC)**, Vol. 24, pp. 194-209, 2015.

Rasheed Hussain, Z. Rezaeifar, and H. Oh, “A Paradigm Shift from Vehicular Ad Hoc Networks

to VANET-Based Clouds,” *Wireless Personal Communications Journal, Springer*, Vol. 83, No. 2, pp. 1131-1158, 2015.

J. Son, **Rasheed Hussain**, H. Kim, and H. Oh, “SC-DVR: A Secure Cloud Computing based Framework for DVR Service,” *IEEE Transactions on Consumer Electronics*, Vol. 60, No. 3, pp. 368-374, Aug 2014, DOI: 10.1109/TCE.2014.6937320.

Rasheed Hussain, H. Oh, “Identity-Exchange based Privacy Privacy Preserving Mechanism in Ephemeral Networks,” *Journal of the Korea Institute of Information Security and Cryptology (KIISC)*, Vol. xx, No. xx, 2014.

Rasheed Hussain, H. Oh, “A Secure and Privacy-Aware Route Tracing and Revocation Mechanism in VANET-based Clouds,” *to appear in Journal of the Korea Institute of Information Security and Cryptology (KIISC)*, Vol. xx, No. xx, 2014.

Rasheed Hussain, and H. Oh, “On Secure and Privacy-Aware Sybil Attack Detection in Vehicular Communications,”. *Wireless Personal Communications Journal, Springer*, Vol. 77, No. 4, pp. 2649-2673, Aug. 2014. DoI: 10.1007/s11277-014-1659-5

Rasheed Hussain and H. Oh, “Cooperation-Aware VANET Clouds: Providing Secure Cloud Services to Vehicular Ad Hoc Networks,” *Journal of Information Processing Systems*, vol. 10, no. 1, pp. 103-118, 2014.

International Conference/Workshop

S. Benahmed, I. Pidikseev, **R. Hussain**, J. Lee, S.M.A. Kazmi, A. Oracevic, and F. Hussain, “Comparison of Distributed Ledger Technologies for Smart Contract Development,” (**IEEE PIMRC**), September 8-11, 2019, Istanbul, Turkey *Accepted*

A. Benmoussa, A.K. Tahari, N. Lagraa, A. Lakas, F. Ahmad, **R. Hussain**, C.A. Kerrache, F. Kurugollu, “A Novel Congestion-Aware Interest Flooding Attack Detection Mechanism in Named Data Networking,” **IEEE International Conference on Computer Communications and Networks (ICCCN’19) Workshop**, July 29 - Aug 1, 2019, Valencia, Spain (*Accepted*)

M. Farhan et al., “A Comparative Analysis of Trust Models for Safety Applications in IoT-enabled Vehicular Networks,” **IEEE Wireless Days (WD) 2019** *Accepted*

D. Strugar et al., “An architecture for distributed ledger-based M2M auditing for Electric Autonomous Vehicles,” **IEEE AINA 2019** *Accepted*

O. Surnin et al. “Security Analysis of Mobile Healthcare Applications,” **The International Science and Technology Conference Modern Network Technologies, (MoNeTec 2018)** *Accepted*

O. Surnin et al., “Probabilistic Estimation of Honey-pot Detection in IoT,” **International Conference on Computing, Networking and Communications (ICNC 2019)**, February 18-21, 2019, Honolulu, Hawaii, USA (*Accepted*)

H. Farahneh et al., ”A Novel Optimal Precoder and Equalizer in 2×2 MIMO VLC Systems for Vehicular Application,” **IEEE GLOBECOM Workshop 2018, December, Abu Dhabi, UAE.** (*Accepted*)

- S. Saad et al., “Mitigating DDoS Attacks in Software-Defined Networks,” **IEEE WiMob 2018, October, Cyprus** (*Accepted*)
- V. Rivera et al., “Teaching Programming and Design-by-Contract,” **International Conference on Interactive Collaborative Learning (ICL’18)**, (*Accepted*)
- S. Ostrovskaya et al., “Multi-metric Cache Replacement Policies in Named Data Vehicular Networks,” **IEEE PIMRC 2018**, (*Accepted*)
- D. Strugar, **Rasheed Hussain**, M. Mazzara, and V. Revira, “On M2M Micropayments: A Case Study of Electric Autonomous Vehicles,” **IEEE Blockchain 2018** *Accepted*
- D. Strugar, **Rasheed Hussain**, M. Mazzara, J. Lee, and V. Revira, “Reputation in M2M Economy: A case Study of Electric Autonomous Vehicles,” **SEDA 2018** (*Accepted*)
- O. Surnin et al., “Security Analysis of Mobile Healthcare Applications,” **IEEE International Conference on Consumer Electronics Asia (ICCE-Asia)** *Accepted*
- B. Saifullin et al., “Spoofing Android Camera,” **IEEE SNDP 2018** *Accepted*
- K. Sozykin et al. “Multi-label Class-imbalanced Action Recognition in Hockey Videos via 3D Convolutional Neural Networks,” **IEEE SNPD** *Accepted*
- J. Lee, K. Lopatin, **Rasheed Hussain**, and W. Nawaz, “Evolution of Friendship: a case study of MobiClique,” (*Accepted*) ACM International Conference on Computing Frontiers (2017).
- Z. Alishev, **Rasheed Hussain**, W. Nawaz, and J. Lee, “AHP-based Trust and Reputation management in Vehicular Social Networks,” *Accepted* IEEE VTC-Spring 2017
- M. Ahmad, A. Khan, **Rasheed Hussain**, S. Protasov, F. Chow, A. Khattak, “Unsupervised Geometrical Feature Learning from Hyperspectral Data,” *to appear in* the proceedings of 2016 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2016)
- Rasheed Hussain**, W. Nawaz, J. Lee, J. Son, and J. Seo. “A Hybrid Trust Management Framework for Vehicular Social Networks,” *to appear in* 5th International Conference on Computational Social Networks (CSoNet 2016), Ho Chi Minh, Vietnam.
- Rasheed Hussain**, D. Kim, M. Nogueira, J. Son, A. Tokuta, H. Oh, “A New Privacy-aware Mutual Authentication Mechanism for Charging-on-the-Move in Online Electric Vehicles,” *to appear in* IEEE International Conference on Mobile ad hoc and Sensor Networks (MSN 2015).
- D. Kim, Y. Velasco, X. Liu, W. Wang, **Rasheed Hussain**, R. N. Uma, “Cost Effective Mobile and Static Road Side Unit Deployment for Vehicular Adhoc Networks,” *to appear in* IEEE International Conference on Computing, Networking, and Communications (ICNC 2016).
- U. Rajput, F. Abbas, **Rasheed Hussain**, H. Eun, and H. Oh, “A Two Level Privacy Preserving Pseudonymous Authentication Protocol for VANET,” IEEE International Conference on Wireless and Mobile Computing, Network and Communications (WiMob 2015), pp. 643-650, 2015.
- Rasheed Hussain**, Z. Rezaeifar, J. Son, D. Kim, and H. Oh, “Covert Communication-based Privacy Preservation in Ephemeral Networks,” IEEE Military Communications (IEEE MilCom), pp. 55-60, October 2015.
- J. Son, D. Kim, **Rasheed Hussain**, Alade O. Tokuta, S. Kwon, and J. Seo, “Privacy-aware Incentive

Mechanism to Collect Mobile Data While Preventing Duplication,” *IEEE Military Communications (IEEE MilCom)*, pp. 1242-1247, October 2015.

Rasheed Hussain, Z. Rezaeifar, D. Kim, A. O. Tokuta, and H. Oh. “On Secure and Efficient Beacon Broadcasting among One-hop Neighbors in VANETs,” *IEEE Military Communication Conference (MilCom)*, pp. 1427-1434, 2014 [[IEEE Student Travel Grant](#)].

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U. Rajput, F. Abbas, **Rasheed Hussain**, H. Eun, and H. Oh, “A Simple Yet Efficient Approach to Combat Transaction Malleability in Bitcoin,” *to appear in The 15th International Workshop on Information Security Applications (WISA)*, 2014.

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J. Lee, J. Son, **Rasheed Hussain**, and H. Oh, “Media cloud: A secure and efficient virtualization framework for media service,” *Consumer Electronics (ICCE)*, 2014 *IEEE International Conference on* , vol., no., pp.79,80, 10-13 Jan. 2014 doi: 10.1109/ICCE.2014.6775917

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Rasheed Hussain, J. Son, H. Eun, S. Kim, and H. Oh, “Traffic information system: A lightweight geocast-based piggybacking strategy for cooperative awareness in VANET,” *Consumer Electronics (ICCE)*, 2013 *IEEE International Conference on*, pp.614-615, 11-14 Jan. 2013.

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Rasheed Hussain, F. Abbas, J. Son, D. Kim, S. Kim, and H. Oh, “Vehicle Witnesses as a Service: Leveraging Vehicles as Witnesses on the Road in VANET Clouds,” *Cloud Computing Technology and Science (CloudCom)*, 2013 *IEEE 5th International Conference on*, pp.439-444, 2-5 Dec. 2013 doi: 10.1109/CloudCom.2013.64

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F. Abbas, **Rasheed Hussain**, J. Son, and H. Oh, “Privacy Preserving Cloud-Based Computing Platform (PPCCP) for Using Location Based Services,” *Utility and Cloud Computing (UCC)*, 2013 *IEEE/ACM 6th International Conference on*, pp.60-66, 9-12 Dec. 2013 doi: 10.1109/UCC.2013.26

Rasheed Hussain, F. Abbas, J. Son, and H. Oh, “TaaS: Secure Cloud-assisted Traffic Informa-

tion Dissemination in Vehicular Ad Hoc Networks,” *Cluster, Cloud and Grid Computing (CCGrid), 2013 13th IEEE/ACM International Symposium on*, pp.178-179, 13-16 May 2013 doi: 10.1109/CC-Grid.2013.38

Rasheed Hussain, S. Kim, and H. Oh, “AntiSybil: Standing against Sybil Attacks in Privacy-Preserved VANET,” *Connected Vehicles and Expo (ICCVE), 2012 International Conference on*, pp.108-113, 12-16 Dec. 2012 doi: 10.1109/ICCVE.2012.27

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Rasheed Hussain, J. Son, H. Eun, S. Kim, and H. Oh, “Rethinking Vehicular Communications: Merging VANET with cloud computing,” *Cloud Computing Technology and Science (Cloud-Com), 2012 IEEE 4th International Conference on*, pp.606-609, 3-6 Dec. 2012 doi: 10.1109/Cloud-Com.2012.6427481

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Rasheed Hussain, F. Abbas, J. Son, and H. Oh, “On Hybrid Re-Broadcasting Techniques in Vehicular Ad Hoc NETWORKS,” *To appear in the 39th Korean Information Processing Society (KIPS) Conference*, Busan, May 2013, South Korea [[Excellent Paper Award](#)].

Rasheed Hussain, J. Son, and H. Oh, “Providing Secure Traffic Information through Clouds in VANET,” *Conference on Information Security and Cryptology (CISC)*, pp. 121-124, December 2012, South Korea [[Excellent Paper Award](#)].

Rasheed Hussain, S. Kim, and H. Oh, “Preventing Sybil Attacks Through Road-Side Infrastructure in Vehicular Ad Hoc NETWORKS,” *To appear in the Conference on Information Security and Cryptology (CISC)*, pp. 77-81, December 2011, [[Excellent Paper Award](#)].

PROFESSIONAL SERVICES AND ACTIVITIES

Editorial Board Member (Associate Editor)

- IEEE Access Journal
- Internet Technology Letters (ITL), Wiley
- Ad Hoc & Sensor Wireless Networks, Old City Publishing
- IEEE Internet Initiative
- IEEE Internet Policy Letters
- IEEE Future Directions Newsletter

Editorial Board Member (Guest Editor)

- SI: Recent Advancements in Flying Ad hoc Networks, **Computers and Electrical Engineering, Elsevier Journal** <https://www.journals.elsevier.com/computers-and-electrical-engineering/call-for-papers/special-issue-on-recent-advancements-in-flying-ad-hoc-network>
- SI: Recent Advances in Software-Defined Internet of Vehicles (SDIoV), **Sensors (MDPI)** http://www.mdpi.com/journal/sensors/special_issues/SDIoV
- SI: Vehicular Sensor Networks: Applications, Advances and Challenges, **Sensors (MDPI)** https://www.mdpi.com/journal/sensors/special_issues/Vehicular_Sensor_Networks

Selected Journal Referee Service

- IEEE Transactions on Information Forensics and Security (TIFS)
- IEEE Transactions on Dependable and Secure Computing (TDSC)
- IEEE Transactions on Vehicular Technology (TVT)
- IEEE Vehicular Technology Magazine
- IEEE Transactions on Intelligent Transportation Systems (T-TIS)
- IEEE Transactions on Intelligent Transportation Systems Magazine
- IEEE Transactions on Industrial Electronics (TIE)
- IEEE Transactions on Industrial Informatics
- IEEE Wireless Communications Magazine
- IEEE Internet of Things Journal
- IEEE Communications Magazine
- IEEE Communications Letters
- IEEE Sensors Journal
- IEEE Access
- IETE Technical Review, Taylor & Francis
- Computer Communications, Elsevier
- Computer Standards and Interfaces, Elsevier
- Information Sciences (INS), Elsevier
- Information Fusion (INFUS), Elsevier
- Journal of Network and Computer Applications (JNCA), Elsevier
- International Journal of Communication Systems (IJCS), Wiley
- Wireless Networks, Springer
- Telecommunication Systems (TELS), Springer
- Soft Computing Journal, Springer
- Computer Networks (COMNET), Elsevier
- Ad Hoc Networks (ADHOC), Elsevier
- Vehicular Communications (Vehcom), Elsevier
- Journal of Parallel and Distributed Computing, Elsevier
- IET Security
- Journal of Information Processing Systems
- Wireless Personal Communications (WIRE), Springer
- Journal of Network and System Management (JONS), Springer
- Cryptography Journal
- Information Security Journal: A Global Perspective
- AND MORE . . .

Selected Conference Referee and TPC Service

- IEEE ICCCN 2019 (TPC)
- IEEE ICC 2019 (TPC)
- IEEE Wireless Days 2019 (TPC)
- IEEE Intelligent Transportation Systems Conference (ITSC) 2018, (Associate Editor)

- IEEE VNC 208 (TPC)
- IEEE VTC-Fall 2018 (TPC)
- IEEE VTC-Spring 2018 (RAFNET) (TPC)
- IEEE International Conference on Vehicular Technology (VTC-Spring) 2017 (TPC)
- 2nd International Workshop on Recent Advancements in Future Networking Technologies (RAFNET), Sydney, Australia (TPC)
- 6th International Conference on Computational Social Networks (CSoNet 2017), August 2017, Hong Kong, China (TPC)
- IEEE Connected Vehicles (ICCVE) 2016, Seattle, USA (TPC)
- IEEE Vehicular Networking Conference (VNC) 2016, Columbus Ohio, USA (TPC)
- IEEE International Conference on Global Communications (Globecom) 2016
- IEEE Network of the Future (NoF) 2016, Brazil (TPC)
- 31st ACM/SIGAPP Symposium on Applied Computing, WCN Workshop 2016, Sousse, Tunisia (TPC)
- IEEE Connected Vehicles (CCVE) 2015, Shenzhen, China (TPC)
- Special Track on Bio-Inspired Wireless Network Security (BWNS) - BICT 2015 (TPC), Track on Selected Area of Wireless Communications and Networking(WCN) (TPC)
- The 31st ACM/SIGAPP Symposium on Applied Computing SAC 2016
- Global Summit on Computer and Information Technology (GSCIT) 2015, Sousse, Tunisia (TPC)
- International Conference on Cloud Computing and Cryptography (ICCC) 2015
- International Conference on Computer Technologies Innovations and Applications (ICCTIA) 2015
- IEEE Vehicular Networking Conference (VNC) 2015, Kyoto, Japan (TPC)
- International Conference on Network of the Future (NoF) 2015, Montreal, Canada (TPC)
- IEEE Connected Vehicles (CCVE) 2012 (TPC)
- IEEE Connected Vehicles (CCVE) 2013 (TPC)
- IEEE Connected Vehicles (CCVE) 2014, Vienna, Austria (TPC)
- IEEE International Conference on Communications (ICC) 2015
- IEEE International Conference on Global Communications (GLOBECOM) 2015
- IEEE International Performance Computing and Communications Conference (PPPC) 2014
- International Conference on Information Security and Cryptology (ICISC) 2013
- International Conference on Information Security and Cryptology (ICISC) 2014

INVITED TALKS

Invited Talk in Skolkovo Cyber Day 2018, Skolkovo, Moscow, Russia, November 30, 2018

Invited Talk in Blockchain Symposium - From Hype to Reality, September 17-21, 2018, Toronto, Canada September 17-21, 2018.

Invited Talk at International Conference on Software Engineering for Defense Applications (SEDA), June 7-8, 2018, Rome, Italy

Invited Seminar talk on Blockchain technology for constrained environments, July 2, 2018, Hanyang University, South Korea

Invited Talk at 15th International Conference on Frontiers of Information Technologies (FIT 2017), Dec 18-20, 2017, Islamabad, Pakistan

Invited Talk at 14th International Conference on Frontiers of Information Technologies (FIT 2016), Dec 19-21, 2016, Islamabad, Pakistan

Invited Talk at RAFNET workshop at IEEE VTC-Spring 2017, Sydney, Australia June 4-7, 2017

SELECTED CONFERENCE PRESENTATIONS

International Workshop on Information Security Applications (WISA 2012), Jeju Island, South Korea.

IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2012), Taipei, Taiwan.

IEEE International Conference on Connected Vehicles and Expo (ICCVE 2012), Beijing, China.

IEEE International Conference on Consumer Electronics (ICCE 2013), Las Vegas, NV, USA.

IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2013), Delft, Netherlands.

IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2013), Lyon, France.

IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2013), Bristol, United Kingdom.

IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2013), Dresden, Germany.

IEEE International Conference on Consumer Electronics (ICCE 2014), Las Vegas, NV, USA.

IEEE International Conference on Military Communications (MilCom 2014), Baltimore, MD, USA.

5th International Conference on Computational Social Networks (CSoNet 2016), Ho Chi Minh, Vietnam

IEEE Vehicular Technology Conference (VTC-Spring 2017), June 4-7, Sydney, Australia

COMPUTER SKILLS

- Programming Skills: C, C++, Java, XML, HTML, DHTML
- Applications: ArcGIS, ArcView 3.2, \LaTeX
- Simulation Tools: NS2, OMNET++, NCTUns, SUMO, MOVE, TraNS, VanetMobiSim

- Operating Systems: Unix/Linux, Windows.

LANGUAGES

- Pashto (Native)
- Urdu (Professional)
- English (Professional)
- Korean (Fluent)

REFERENCES

Available on demand.