Muhammad Aslam Jarwar, Ph.D.

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https://iris.ucl.ac.uk/iris/browse/profile?upi=MAJAR17
https://scholar.google.com/citations?user=nQTE0W8AAAAJ&hl=en
Citations **240** · H-Index **11** Cumulative Impact Factor (as per JCR, 2020): **33**

Education

2016.08 - 2020.02 **Ph.D. in Information and Communications Engineering** from Hankuk University of Foreign Studies, Seoul, South Korea.

2012.08 - 2016.02 **M.S. in Information Science and Technology** from Quaid-i-Azam University, Islamabad, Pakistan.

2000.08 - 2004.12 **B.S (Hons). in Computer Science** from University of Sindh, Jamshoro, Pakistan.

Employment

2021.11 - to date **Research Fellow**, PETRAS National Centre of Excellence for IoT Systems Cybersecurity, Department of Science, Technology, Engineering and Public Policy (STEaPP) University College London (UCL), WC1E 6JA, UK.

2020.09 - 2021.10 **Research Associate** , University of Manchester, Manchester, UK.

2016.08 - 2020.02 **Research and Teaching Assistant**, Advanced Network and Multimedia Laboratory, Hankuk University of Foreign Studies, Seoul, South Korea.

2005.08 - 2016.07 **Assistant Director Software Development,** Research and Development Division, National Database and Registration Authority, Islamabad, Pakistan.

Selected projects

SOfIoTS (Current) The SOfIoTS (Secure Ontologies for IoT Systems) project aims to understand and develop cybersecurity attributes for existing Industrial Internet of Things (IIoT) network ontologies to include machine learning at the Edge. The projects planned outcomes will result in publications on which further academic endeavor can be built, whilst contributing to the understanding and methodologies of data security and assurance in Building Management Systems (BMS) in sensitive public buildings. [2021.11 - ongoing.] ***URL*** *https://petras-iot.org/project/secure-ontologies-for-iot-systems-sofiots/*

PROVANON In this project we are investigating that how the use of provenance formalisms will enable us to capture the necessary features of the complex dynamic data situations to allow more principled analysis of risk, the requirements of anonymisation and related topics such as Cyber Security, privacy and data utility. [2020.09 - 2021.10] ***URL*** *https://www.turing.ac.uk/research/research-projects/anonymisation-and-provenance*

EmoSpaces The innovative aspect of this research lies in considering emotion and sentiments as a context source for improving intelligent services in the IoT environment. In this project, our research focus was to develop an IoT data analytics and service provisioning platform that recognize the context and situation of user. The significance of this research is that the situation recognition and adaption based on the emotions leads to improving the service quality, users (such as elderly, teenager, etc) protection and privacy. [2016.05 - 2019.09] ***URL*** *https://itea3.org/project/emospaces.html*

Selected projects (continued)

WoO-SAS

The aim of WoO-SAS (Web Objects based Smart Aging Services) project was to develop technologies and mechanisms to improve the life of a super-aging society. Some of the topics we explored include the development of self-Learning smart aging service objects, to design infrastructure for healthcare services to assist the elderly living, collecting and analyzing data from the wearable and non-wearable sensors in order to monitoring vital health conditions. The outcome of this project were the IoT data analytics and services platform which provides services to the elderly. [2016.05 - 2019.12]

Peer reviewed Publications (selected)

Journal Articles

1. Khowaja, S. A., Lee, I. H., Dev, K., **Jarwar**, **M. A.**, & Faseeh, M. N. (2022). Get your Foes Fooled: Proximal Gradient Split Learning for Defense against Model Inversion Attacks on IoMT data. *Transactions on Network Science and Engineering*, 1–1. submitted (Impact Factor=3.894, Ranking=Q2). doi:-

2. **Jarwar**, **M. A.**, Khowaja, S. A., Dev, K., Adhikari, M., & Hakak, S. (2021). NEAT: A Resilient Deep Representational Learning for Fault Detection using Acoustic Signals in IIoT Environment. *IEEE Internet of Things Journal*, 1–1. (Impact Factor=9.471, Ranking=Q1). doi:10.1109/JIOT.2021.3109668

3. **Jarwar**, **M. A.**, & Chong, I. (2020). Web Objects Based Contextual Data Quality Assessment Model for Semantic Data Application. *Applied Sciences*, *10*(6), 2181. (Impact Factor=2.679, Ranking=Q2). doi:10.3390/app10062181

4. **Jarwar**, **M. A.**, Ali, S., & Chong, I. (2019a). A Microservices Model to Enhance the Availability of Data for Buildings Energy Efficiency Management Services. *Energies*, *12*(3), 360. (Impact Factor=3.004, Ranking=Q1). doi:10.3390/en12030360

5. Ali, S., **Jarwar**, **M. A.**, & Chong, I. (2018). Design Methodology of Microservices to Support Predictive Analytics for IoT Applications. *Sensors*, *18*(12), 4226. (Impact Factor=3.576, Ranking=Q1). doi:10.3390/s18124226

6. Ali, S., Kibria, M. G., **Jarwar**, **M. A.**, Lee, H. K., & Chong, I. (2018). A Model of Socially Connected Web Objects for IoT Applications. *Wireless Communications and Mobile Computing*, *2018*. (Impact Factor=2.336, Ranking=Q2). doi:10.1155/2018/6309509

7. **Jarwar**, **M. A.**, Kibria, M. G., Ali, S., & Chong, I. (2018). Microservices in Web Objects Enabled IoT Environment for Enhancing Reusability. *Sensors*, *18*(2), 352. (Impact Factor=3.576, Ranking=Q1). doi:10.3390/s18020352

8. Kibria, M., Ali, S., **Jarwar**, **M. A.**, Kumar, S., & Chong, I. (2017). Logistic Model to Support Service Modularity for the Promotion of Reusability in a Web Objects-Enabled IoT Environment. *Sensors*, *17*(10), 2180. (Impact Factor=3.576, Ranking=Q1). doi:10.3390/s17102180

9. **Jarwar**, **M. A.**, Abbasi, R. A., Mushtaq, M., Maqbool, O., Aljohani, N. R., Daud, A., … Chong, I. (2017). CommuniMents: A Framework for Detecting Community Based Sentiments for Events. *International Journal on Semantic Web and Information Systems (IJSWIS)*, *13*(2), 87–108. (Impact Factor=0.843, Ranking=Q3). doi:10.4018/IJSWIS.2017040106

Conference Proceedings

1. **Jarwar**, **M. A.**, Chapman, A., Elliot, M., & Raji, F. (2021). Modelling data environments within PROV to assist anonymisation decision-making. In *Conference of European Statisticians and Expert Meeting on Data Confidentiality*. United Nations Economic Commission for Europe (UNECE). doi:https://unece.org/sites/default/files/2021-12/SDC2021_Day3_Elliot_AD.pdf

2. Ali, S., **Jarwar**, **M. A.**, & Chong, I. (2019). Microservices based Framework to Support Interoperable IoT Applications for Enhanced Data Analytics. In *Proceedings of the 2019 Winter Conference of the Korean Communication Society*. the Korean Institute of Communications and Information Sciences (KICS). doi:abs/1910.08713

3. **Jarwar**, **M. A.**, Ali, S., & Chong, I. (2019b). Microservices based Linked Data Quality Model for Buildings Energy Management Services. In *Proceedings of the 2019 Winter Conference of the Korean Communication Society*. the Korean Institute of Communications and Information Sciences (KICS). doi:abs/1910.06115v1

4. **Jarwar**, **M. A.**, Ali, S., & Chong, I. (2018). Exploring Web Objects enabled Data-Driven Microservices for E-Health Service Provision in IoT Environment. In *2018 International Conference on Information and Communication Technology Convergence (ICTC)* (pp. 112–117). IEEE. doi:10.1109/ICTC.2018.8539684

5. Ali, S., Kibria, M. G., **Jarwar**, **M. A.**, Kumar, S., & Chong, I. (2017). Microservices model in WoO based IoT platform for depressive disorder assistance. In *2017 International Conference on Information and Communication Technology Convergence (ICTC)* (pp. 864–866). IEEE. doi:10.1109/ICTC.2017.8190800

6. **Jarwar**, **M. A.**, Ali, S., Kibria, M. G., Kumar, S., & Chong, I. (2017). Exploiting interoperable microservices in web objects enabled Internet of Things. In *2017 Ninth International Conference on Ubiquitous and Future Networks (ICUFN)* (pp. 49–54). IEEE. doi:10.1109/ICUFN.2017.7993746

7. Kibria, M. G., Ali, S., **Jarwar**, **M. A.**, & Chong, I. (2017). A Framework to Support Data Interoperability in Web Objects Based IoT Environments. In *2017 International Conference on Information and Communication Technology Convergence (ICTC)* (pp. 29–31). IEEE. doi:10.1109/ICTC.2017.8190935

8. Kibria, M. G., **Jarwar**, **M. A.**, Ali, S., Kumar, S., & Chong, I. (2017). Web objects based energy efficiency for smart home IoT service provisioning. In *2017 Ninth International Conference on Ubiquitous and Future Networks (ICUFN)* (pp. 55–60). IEEE. doi:10.1109/ICUFN.2017.7993747

9. Kumar, S., Kibria, M. G., Ali, S., **Jarwar**, **M. A.**, & Chong, I. (2017). Smart spaces recommending service provisioning in WoO platform. In *2017 International Conference on Information and Communications (ICIC)* (pp. 311–313). IEEE. doi:10.1109/INFOC.2017.8001686

Technical Recommendations (ITU Telecommunication Standardization Sector)

1. **Jarwar**, **M. A.**, Chong, I., Feingold, N., An, X., & Lee, G. M. (2019). *Technical Specification D4.4 - Framework to support data quality management in IoT*. ITU-T. Retrieved from https://www.itu.int/pub/T-FG-DPM-2019-4.4

Academic Services

Editorial activities

- **Lead Guest Editor** for special issue on Role of Disruptive Technologies in Modern Distribution Grid Automation in Sustainable Energy Technologies and Assessments Journal. ***URL*** *https://bit.ly/3yAYpGF*
- **Editorial Board Member** for Progress in Human Computer Interaction Journal. ***URL*** *https://ojs.whioce.com/index.php/phci/about/editorialTeam*

Member of Reviewer Board

- IEEE Transactions on Network Science and Engineering
- IEEE Transactions on Computational Social Systems
- IEEE Internet of Things Journal
- IEEE Sensors Journal

Academic Services (continued)

- Computer Networks (Elsevier)
- Future Generation Computer Systems (Elsevier)
- Neural Computing and Applications (Springer)
- And many other Q1 journals

Member

- Member: IEEE (94189930)
- Member: ACM (4513194)
- Member: The Korean Institute of Communications and Information (2016 - to date)
- Member: HUFS International Alumni Association, South Korea (2016 - to date)
- Member: Digital Trust and Security Group University of Manchester, UK (2020 - 2021)
- University of Manchester: Representatives: National Postdoc, Steering Committee, UK (2020 - 2021)

Honors and Awards (selected)

- **Research and Networking Grant**, A seed grant for the research collaboration and networking from the University of Manchester, United Kingdom.
- **Research travel grant** from the the Hankuk University of Foreign Studies for attending the 31st International Conference on Information Networking (ICOIN) (11 to 13 January2017) Dan Nang, Vietnam.
- **Scholarship**, Fully funded foreign scholarship for graduate studies by the Hankuk University of Foreign Studies, South Korea.