Muhammad Ilyas

School of Engineering and Architecture, Altinbas University

Email: muhammad.ilyas@altinbas.edu.tr   **Skype:** ilyas_8787

Short Bio

Muhammad Ilyas is an experienced academician with more than five years of teaching and more than eight years of research experience at the prestigious institute, Altinbas University. Dr Ilyas has contributed to his research portfolio by securing funds for two of his projects and publishing more than 60 leading, peer reviewed conference papers and articles in international technical journals.

Dr Ilyas taught various courses both at the undergraduate and graduate levels, including but not limited to cybersecurity, information security, ethical hacking, and wireless communication. He also presented his research at various leading conferences around the globe. He has supervised more than 30 graduate students on their thesis and published multiple research papers with his students. Furthermore, he is also reviewer of multiple well known international journals, including IEEE Access, International Journal of Communication systems, microprocessors microsystems and many more. Dr Ilyas has also organized IEEE conferences, and the most recent one was held in Istanbul, ICEET Oct 2021. Recently Dr Ilyas was elevated to the grade of IEEE senior member due to his significant contributions to the profession.

Education

PhD, Electrical and Computer Engineering	**Aug., 2018**
Altinbas University, Istanbul, Turkey	
MS, Electrical and Computer Engineering	**Nov., 2014**
Altinbas University, Istanbul, Turkey	
BS, Computer Engineering	**Nov., 2010**
COMSATS University Islamabad, Abbottabad Campus, Pakistan	

Work Experience

August 2022 – present: **Coordinator Institute of Graduate Studies**
Altinbas University, Institute of Graduate Studies, Turkey.

December 2018 – present: **Assistant Professor**
Altinbas University, School of Engineering and Architecture, Turkey.

Sept. 2015 – Aug. 2018: **Research Assistant**
Altinbas University, School of Engineering and Architecture, Turkey.

April 2013 – Oct. 2014: **RF Co-op R&D Engineer**
Bayt Technology, Istanbul, Turkey.

Awards and Achievements

EC-Council Official academic partner.

Cybersecurity researcher (providing trainings and supporting TAG)

Best academician award based on performance for the academic year 2021-2022.

IEEE Senior Member

Publications

Google Scholar: https://scholar.google.com/citations?user=io_LywsAAAAJ&hl=en

LinkedIn: https://www.linkedin.com/in/muhammad-ilyas-phd-5827a634/

Journals

1. Ali Mahdi Al-Dabbagh & **Muhammad Ilyas** (2023) Uni-temporal Sentinel-2 imagery for wildfire detection using deep learning semantic segmentation models, Geomatics, Natural Hazards and Risk, 14:1, DOI: 10.1080/19475705.2023.2196370
2. Mezher, M, Alabbas, AR, **Ilyas, M**. A survey on state of the inter body radio communication channel: Performance and solutions. *Trans Emerging Tel Tech*. 2023; 34(2):e4697. doi:10.1002/ett.4697
3. Mohammed Ibrahim Al-mashhadani, Kilan M. Hussein, E. Tariq Khudir, and **Muhammad Ilyas**, "Sentiment Analysis using Optimized Feature Sets in Different Facebook/Twitter Dataset Domains using Big Data", *Iraqi Journal For Computer Science and Mathematics*, vol. 3, no. 1, pp. 64–70, Jan. 2022.
4. H. H. Al-Khshali and **M. Ilyas**, "Impact of portable executable header features on malware detection accuracy," *Computers, Materials & Continua*, vol. 74, no.1, pp. 153–178, 2023.
5. Salam Alyassri, **Muhammad Ilyas**, Ali Marhoon, Oguz Bayat, Novel partial overlapped gaussian pulse multi-access system aided by data analysis, Computers and Electrical Engineering, Volume 101, 2022, 108007, ISSN 0045-7906, https://doi.org/10.1016/j.compeleceng.2022.108007.
6. Mezher MA, Din S, **Ilyas M**, Bayat O, Abbasi QH, Ashraf I. Data Transmission Enhancement Using Optimal Coding Technique Over *In Vivo* Channel for Interbody Communication. Big Data. 2022 Apr 4. doi: 10.1089/big.2021.0224. Epub ahead of print. PMID: 35377193.
7. Alsanad, H.R., Sadik, A.Z., Ucan, O.N. Ucan., **M. Ilyas**. And O. Bayat*., YOLO-V3 based real-time drone detection algorithm. *Multimed Tools Appl* (2022). https://doi.org/10.1007/s11042-022-12939-4
8. Al-Mashadani, Abdulrahman Khalid Abdullah, and **Muhammad Ilyas**. "Distributed Denial of Service Attack Alleviated and Detected by Using Mininet and Software Defined Network." *Webology* 19, no. 1 (2022), DOI: 10.14704/WEB/V19I1/WEB19272
9. S. N. Azzah, S. Din, **M. Ilyas**, I. Ashraf and G. S. Choi, "Resolving Energy Consumption Issues and Spectrum Allocation for Future Broadband Networks," in *IEEE Access*, doi: 10.1109/ACCESS.2021.3135934.
10. Hayder Alkatrani, **Muhammad Ilyas**, Salam Alyassri, Ali Nahar, Fadi Al-Turjman, Jawad Rasheed, Ali Alshahrani, Basil Al-Kasasbeh, "Polygon Number Algorithm for Peak-to-Average Ratio Reduction of Massive 5G Systems Using Modified Partial Transmit Sequence Scheme", *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 7498240, 10 pages, 2021. https://doi.org/10.1155/2021/7498240
11. Alkurdi, D.A., **Ilyas, M**. & Jamil, A. Cancer detection using deep learning techniques. *Evol. Intel.* (2021). https://doi.org/10.1007/s12065-021-00635-5
12. B. Dinç , **M. Ilyas** , H. Kaygusuz and O. Uçan , "5 GHZ WI FI EFFECTS ON ESCHERICHIA COLI, CAENORHABDITIS ELEGANS AND HUMAN NEUROBLASTOMA CELLS", *Mugla

Journal of Science and Technology, vol. 7, no. 1, pp. 7-13, Mar. 2021, doi:10.22531/muglajsci.820783

13. **M. Ilyas** and H. K. E. Ghazal, "Design of a MPPT System Based on Modified Grey Wolf Optimization Algorithm in Photovoltaic System under Partially Shaded Condition", *IJC*, vol. 40, no. 1, pp. 36-49, Mar. 2021.

14. Sarah Majid Obaid, Taha Ahmed Elwi, and **Muhammad Ilyas**, "Fractal Minkowski-Shaped Resonator for Noninvasive Biomedical Measurements: Blood Glucose Test," *Progress In Electromagnetics Research C*, Vol. 107, 143-156, 2021. doi:10.2528/PIERC20072603

15. H. R. Alsanad, O. N. Ucan, **M. Ilyas**, A. U. R. Khan and O. Bayat, "Real-Time Fuel Truck Detection Algorithm Based on Deep Convolutional Neural Network," in *IEEE Access*, vol. 8, pp. 118808-118817, 2020, doi: 10.1109/ACCESS.2020.3005391.

16. M. Al-Qaraghuli, S. Ahmed and **M. Ilyas**, "Encrypted Vehicular Communication Using Wireless Controller Area Network," Iraqi Journal for Electrical and Electronic Engineering, Vol. SCEEER, issue 3rd, pp. 17-24, 2020.

17. Murtadha M. A. Alkadhmi, Osman N. Uçan, **Muhammad Ilyas**, "An Efficient and Reliable Routing Method for Hybrid Mobile Ad Hoc Networks Using Deep Reinforcement Learning", *Applied Bionics and Biomechanics*, vol. 2020, Article ID 8888904, 13 pages, 2020. https://doi.org/10.1155/2020/8888904

18. Alabbas, AR, Hassnawi, LA, **Ilyas, M**, Pervaiz, H, Abbasi, QH, Bayat, O. Performance enhancement of safety message communication via designing dynamic power control mechanisms in vehicular ad hoc networks. *Computational Intelligence*. 2020; 1–23. https://doi.org/10.1111/coin.12367

19. **Ilyas, M**, Ucan, ON, Bayat, O, et al. Evaluation of ultra-wideband in vivo radio channel and its effects on system performance. *Trans Emerging Tel Tech*. 2019; 30: e3530. https://doi.org/10.1002/ett.3530

20. **M. Ilyas**, O. N. Ucan, O. Bayat, X. Yang and Q. H. Abbasi, "Mathematical Modeling of Ultra-Wideband in Vivo Radio Channel," in *IEEE Access*, vol. 6, pp. 20848-20854, 2018, doi: 10.1109/ACCESS.2018.2823741.

Conferences

1. Zeki, A.S., **Ilyas, M.** (2023). Enhancing Vehicle Networks Performance by Using Deep Learning Techniques for Artificial Intelligence. In: García Márquez, F.P., Jamil, A., Eken, S., Hameed, A.A. (eds) Computational Intelligence, Data Analytics and Applications. ICCIDA 2022. Lecture Notes in Networks and Systems, vol 643. Springer, Cham. https://doi.org/10.1007/978-3-031-27099-4_34

2. Hasan, B.A.H., **Ilyas, M.** (2023). Improving Classification Accuracy of Cyber Attacks in the Banking Sector. In: García Márquez, F.P., Jamil, A., Eken, S., Hameed, A.A. (eds) Computational Intelligence, Data Analytics and Applications. ICCIDA 2022. Lecture Notes in Networks and Systems, vol 643. Springer, Cham. https://doi.org/10.1007/978-3-031-27099-4_43

3. M. Sekhi and **M. Ilyas**, "File Security using Image-based Encryption (FSUIE)," *2022 Smart Technologies, Communication and Robotics (STCR)*, Sathyamangalam, India, 2022, pp. 1-5, doi: 10.1109/STCR55312.2022.10009103.

4. F. Al Heeti and **M. Ilyas**, "Performance Comparison of Convolutional Neural Network Models for Plant Leaf Disease Classification," *2022 International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, Ankara, Turkey, 2022, pp. 386-391, doi: 10.1109/ISMSIT56059.2022.9932655.

5. E. A. Alı and **M. Ilyas**, "Analyzing Optical Fibre Communication Networks for Intrusion Detection Using FBG Sensors," *2022 International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, Ankara, Turkey, 2022, pp. 788-793, doi: 10.1109/ISMSIT56059.2022.9932832.

6. M. K. I. Al-juboori and **M. Ilyas**, "Expert System for Classification of Nutrition in Young Children," *2022 International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, Ankara, Turkey, 2022, pp. 396-401, doi: 10.1109/ISMSIT56059.2022.9932657.

7. F. Aldoghje, A. Jinah and **M. Ilyas**, "Creating One Time Virtual Encrypted Identification Number at The ATM," *2022 International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA)*, 2022, pp. 1-7, doi: 10.1109/HORA55278.2022.9799882.

8. A. T. OBAD and **M. ILYAS**, "Efficient WSN Routing Using Bootstapped PSO Clustering," *2022 International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA)*, 2022, pp. 1-5, doi: 10.1109/HORA55278.2022.9800019.

9. M. Saddam and **M. Ilyas**, "Processing Health Insurance Claims Based on Blockchain Technology," *2022 2nd International Conference on Computing and Machine Intelligence (ICMI)*, 2022, pp. 1-5, doi: 10.1109/ICMI55296.2022.9873646.

10. F. Al Heeti and **M. Ilyas**, "Comparative analysis of convolutional neural network architectures for classification of plant leaf diseases," *2022 2nd International Conference on Computing and Machine Intelligence (ICMI)*, 2022, pp. 1-5, doi: 10.1109/ICMI55296.2022.9873752.

11. F. Ali, M. Salih and **M. Ilyas**, "MIMO Patch Antenna with Metamaterial 3.5GHz for 5G Applications," *2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)*, 2022, pp. 1-4, doi: 10.1109/ICAECT54875.2022.9807940.

12. M. Arkwazee, **M. Ilyas** and A. Dawood Jasim, "Automatic Spectrum Sensing Techniques Using Support Vector Machine In Cognitive Radio Network," *2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)*, 2022, pp. 1-6, doi: 10.1109/ICAECT54875.2022.9807922.

13. Zeki, A.S., **Ilyas, M**. (2022). Enhancing Vehicle Networks Performance by Cache-Aided Non-Orthogonal Multiple Access (CA-NOMA). In: Djeddi, C., Siddiqi, I., Jamil, A., Ali Hameed, A., Kucuk, İ. (eds) Pattern Recognition and Artificial Intelligence. MedPRAI 2021. Communications in Computer and Information Science, vol 1543. Springer, Cham. https://doi.org/10.1007/978-3-031-04112-9_21

14. I. M. M. A. Sadek and **M. Ilyas**, "Securing IoT Devices using Blockchain Concept," *2021 International Conference on Engineering and Emerging Technologies (ICEET)*, 2021, pp. 1-6, doi: 10.1109/ICEET53442.2021.9659792.

15. H. M. Marah and **M. Ilyas**, "The Influence of Encryption Techniques and Dynamic Routing Protocols on DMVPN Network Performance," *2021 International Conference on Engineering and Emerging Technologies (ICEET)*, 2021, pp. 1-6, doi: 10.1109/ICEET53442.2021.9659768.

16. A. M. Aldabbagh and **M. Ilyas**, "Smart City GIS Mapping and Analysis of Intrusion Detection," *2021 Fourth International Conference on Electrical, Computer and Communication Technologies (ICECCT)*, 2021, pp. 1-4, doi: 10.1109/ICECCT52121.2021.9616943.

17. S. Alyassri, **M. Ilyas**, A. Marhoon and O. Bayat, "Reduction of Packet Error Rate in V2V Communication Based on Machine Learning," *2021 International Conference on Communication & Information Technology (ICICT)*, 2021, pp. 110-115, doi: 10.1109/ICICT52195.2021.9568487.

18. Z. Ali Abbood, **M. ILYAS**, Ç. Aydin, M. S. Mahmoud and N. Abdulredha, "Automatic Detection of Vehicle Congestion by Using Roadside Unit," *2021 IEEE World AI IoT Congress (AIIoT)*, 2021, pp. 0349-0355, doi: 10.1109/AIIoT52608.2021.9454197.

19. Mohaimen Al Gburi and **Muhammad Ilyas**, "A Novel Design Reconfigurable Antenna Based on the Metamaterial for Wearable Applications" 2021 J. Phys.: Conf. Ser. 1973 012042

20. H. M. Marah, J. R. Khalil, A. Elarabi and **M. Ilyas**, "DMVPN Network Performance Based on Dynamic Routing Protocols and Basic IPsec Encryption," *2021 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, 2021, pp. 1-5, doi: 10.1109/ICECCE52056.2021.9514142.

21. **M. Ilyas** and O. Bayat, "Indoor Localization Technique for small cell Networks," ICMI 2021, 20-23, Istanbul, Turkey.

22. **M. Ilyas**, O. N. Ucan and Y. E. Mohamad, "Smart Home Automation System Design Based on IoT Device Cloud," ICMI 2021, 116-123, Istanbul, Turkey.

23. A. B. Abdulhussein, A. K. Hadi and **M. Ilyas**, "Design a Tracing System for a Seed Supply Chain Based on Blockchain," *2020 3rd International Conference on Engineering Technology and its Applications (IICETA)*, 2020, pp. 209-214, doi: 10.1109/IICETA50496.2020.9318792.

24. H. H. Al-Khshali, **M. Ilyas** and O. N. Ucan, "Effect of PE File Header Features on Accuracy," *2020 IEEE Symposium Series on Computational Intelligence (SSCI)*, 2020, pp. 1115-1120, doi: 10.1109/SSCI47803.2020.9308507.

25. J. Rasheed, A. Jamil, A. Ali Hameed, **M. Ilyas**, A. Özyavaş and N. Ajlouni, "Improving Stock Prediction Accuracy Using CNN and LSTM," *2020 International Conference on Data Analytics for Business and Industry: Way Towards a Sustainable Economy (ICDABI)*, 2020, pp. 1-5, doi: 10.1109/ICDABI51230.2020.9325597.

26. M. I. O. Al-lami and **M. Ilyas**, "Improving scheduling Function for IEEE802.15.4e Time Slotted Channel Hopping for Wireless Sensor Networks," *2020 4th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, 2020, pp. 1-6, doi: 10.1109/ISMSIT50672.2020.9255135.

27. M. J. M. Al-Saadi and **M. Ilyas**, "Identity Management Approach in Internet of Things (IoT)," *2020 4th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, 2020, pp. 1-6, doi: 10.1109/ISMSIT50672.2020.9254470.

28. O. Demirtaş and **M. Ilyas**, "Cloud Assisted Approach for Determining WiFi Problems in Field Deployed Mesh APs - A Case Study for Quality Problems," *2020 28th Signal Processing and Communications Applications Conference (SIU)*, 2020, pp. 1-4, doi: 10.1109/SIU49456.2020.9302146.

29. E. D. Hussein, N. Qasem, M. S. Jameel, **M. Ilyas** and O. Bayat, "Performance Optimization of Microstrip Patch Antenna Using Frequency Selective Surfaces for 60 GHz," *2020 28th Signal Processing and Communications Applications Conference (SIU)*, 2020, pp. 1-4, doi: 10.1109/SIU49456.2020.9302486.

30. Hamza Mahfoud Hamer, Osama Ibraheem Ashour Ashour, and **Muhammad Ilyas**. 2020. A Web Application for Company Reports Management System. In *Proceedings of the 6th International Conference on Engineering & MIS 2020* (*ICEMIS'20*). Association for Computing Machinery, New York, NY, USA, Article 79, 1–5. DOI: https://doi.org/10.1145/3410352.3410815

31. M. Ahmed, A. Alkahrsan and **M. Ilyas**, "Load Balancing In Hybrid WIFI/ LIFI Networks Based on the RSSI of the Load Using Optimized KNN Clustering," *2020 International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA)*, 2020, pp. 1-4, doi: 10.1109/HORA49412.2020.9152887.

32. M. Mezher, **M. Ilyas**, O. Bayat and Q. H. Abbasi, "Bit Error Rate Performance of In-vivo Radio Channel Using Maximum Likelihood Sequence Estimation," *2020 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, 2020, pp. 1-4, doi: 10.1109/ICECCE49384.2020.9179248.

33. G. M. Alshabbani, M. K. Abd, **M. Ilyas** and O. Bayat, "Management of Micro-grid with (SM) to Decrease Electricity Bills by Using (CAEST)," *2020 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, 2020, pp. 1-6, doi: 10.1109/ICECCE49384.2020.9179292.

34. M. A. Sadeq, O. Bayat, **M. Ilyas** and O. I. Ashour, "Spectrum Behavior Prediction and Optimized Throughput /Time performance Using FFNN in Cognitive Radio," *2020 6th International Engineering Conference "Sustainable Technology and Development" (IEC)*, 2020, pp. 42-47, doi: 10.1109/IEC49899.2020.9122797.

35. **M. Ilyas**, O. Bayat, O. N. Ucan, M. A. Imran and Q. H. Abbasi, "Location Dependent Channel Characteristics for Implantable Devices," *2019 International Conference on Advances in the Emerging Computing Technologies (AECT)*, 2020, pp. 1-4, doi: 10.1109/AECT47998.2020.9194165.

36. **M. Ilyas**, O. Bayat, M. A. Imran and Q. H. Abbasi, "Ultra-Wideband In Vivo Channel Modelling with Respect to Ex Vivo Antenna Location," *2019 13th European Conference on Antennas and Propagation (EuCAP)*, 2019, pp. 1-4.

37. **M. Ilyas**, O. Bayat and Q. H. Abbasi, "Experimental analysis of ultra-wideband in vivo radio channel," *2018 26th Signal Processing and Communications Applications Conference (SIU)*, 2018, pp. 1-4, doi: 10.1109/SIU.2018.8404517.

38. **M. Ilyas**, O. Bayat and O. Ileri, "Indoor location estimation by using MLE based algorithm on smallcell networks," *2015 23rd Signal Processing and Communications Applications Conference (SIU)*, 2015, pp. 690-693, doi: 10.1109/SIU.2015.7129919.

Note: Recently accepted and in review papers are not included in the above-mentioned list.

Thesis Advised (Postgraduate)

- Design of a MPPT System based on Modified Grey Wolf Optimization Algorithm in Photovoltaic System under Partially Shaded Conditions.
- Improved Scheduling function for IEEE 802.15.4E Time Slotted Channel Hopping for Wireless Sensor Networks.
- Designing a Tracing System for Seed Supply Chain Based on Blockchain.
- Cloud Assisted Approach for Determining WiFi Problems in Field Deployed Mesh APs – A Case Study for Quality Problems.
- Controllable Wireless Signal Attenuator at Multiple Frequencies.
- Web Interface for Oil Field Report System (Ofrs) Using Php and MySQL.
- Encrypted vehicular communication using wireless controller area network.
- Modified PTS Scheme Technique Based on Number Algorithm For OFDM System.
- Modeling of Multi-vortex Laser/Spatial Domain Multiplexing (SDM) Architecture for High-Speed Data Optical Communication.
- Fractal Minkowski-Shaped Resonator for Noninvasive Biomedical Measurements: Blood Glucose Test.
- Breast Cancer Detection Using Deep Learning Techniques.

- Load Balancing Based on The Received Signal Strength Indication of The Load Using Optimized KNN Clustering In Hybrid WiFi/LiFi Networks.
- Identity Management Approach in the Internet of Things (IoT).
- Low-Cost Dual Axis Solar Tracking System Based on Internet of Things (IoT).
- Transfer Matrix Analysis Method for LiDAR Modeling in Near-infrared Region Applications.

Courses Taught

Course	Undergraduate	Postgraduate
Seminar		☑
Wireless Communication	☑	☑
Linear Algebra and Its Applications	☑	☑
Cyber Security (information systems security)	☑	☑
Cyber Security and Its Applications (ethical hacking essentials)	☑	☑
5G Mobile Communication		☑
Professional/Engineering Ethics	☑	
Signals and Systems	☑	

Languages

English (working proficiency/fluent), Urdu (fluent), Turkish (working proficiency) and Pashto (native)