**Main Page ----- after Research Interests**

**In research interests part add ; Add**

**Recommender Systems in Information Systems line and**

**Quantum in Computing line**

**Google Scholar Profile :** https://scholar.google.com.pk/citations?user=OOfV-CIAAAAJ&hl=en
**LinkedIn Profile :** linkedin.com/in/khalid-saleem-49386338

**PhD Openings against following topics:**

a) **Information Systems Security**

**Learning With Errors (LWE) based Post Quantum Cryptography Security**

b) **Natural Language Processing**

**Large Language Model Generated Information quantization and distillation for Arabic-Scripted Low-Resource Languages**

c) **Recommendation Systems**

**Enhancing Accuracy, Personalization, and User Trust with Privacy Preservation through Large Language Models (LLM) and Graph Neural Networks (GNN) in Recommender Systems**

Make tab for each of the following heading

| S # | Name of Author | Complete Name of Journal and Address with ISSN (Print) No. | Title of Publication | Vol. No. & Page No. | HEC Category W/X/Y/Z | Year Published | Impact Factor + Citation (excluding self-citation) |
|---|---|---|---|---|---|---|---|
| 1. | FS Alamri, A Rehman, B AlGhofaily, A Ahmed, **K Saleem** | IEEE ACCESS https://doi.org/10.1109/ACCESS.2025.3574073 | **Leveraging RAG With Transformer for Context-Based Personalized Recommendations** | 13 & 97472 - 97486 | W | **2025** | **3.6** |
| 2. | FT Zuhra, **K Saleem** | ACM Transactions on Asian and Low-Resource Language Information Processing https://doi.org/10.1145/37483 | **Towards Development of New Language Resource for Urdu: The Large Vocabulary Word Embeddings** | | W | **2025** | **2.0** |
| 3. | A Rehman, A Ahmed, TJ Alahmadi, AR Mirdad, B Al Ghofaily, **K Saleem** | PeerJ Computer Science https://doi.org/10.7717/peerj-cs.2386 | **A framework for generating recommendations based on trust in an informal e-learning environment** | 10 e2386 | W | **2024** | **2.5** |
| 4. | H Ali, **K Saleem** | PLOS ONE https://doi.org/10.1371/journal.pone.0304422 | **Generating large-scale real-world vehicle routing dataset with novel spatial data extraction tool.** | 19 (6) e0304422 | W | **2024** | **2.9** |
| 5. | FT Zuhra, **K Saleem**, S Naz | Journal of King Saud Univ. - Computer and Information Sciences. (Elsevier) https://doi.org/10.1016/j.jksuci.2024.102107 | **An Accurate Transformer-Based Model for Transition-Based Dependency Parsing for Free Word Order Languages** | 36 (6). 102107 | W | **2024** | **6.1** |
| 6. | FT Zuhra, **K Saleem** | Information Processing and Management. https://doi.org/10.1016/j.ipm.2023.103334 | **Hybrid Embeddings for Transition-Based Dependency Parsing of Free Word Order Languages.** | 60/ 3. 103334 | W | **2023** | **6.9** |
| 7. | MS Farooq, S Riaz, R Tehseen, U Farooq, **K Saleem** | Digital Health (Sage) https://doi.org/10.1177/20552076231179056 | Role of Internet of things in diabetes healthcare: Network infrastructure, taxonomy, challenges, and security model. | 9, 20552076231179056 | W | **2023** | **3.3** |
| 8. | MF Khan, **K Saleem**, M Alotaibi, MM Hazzazi, E Rehman, AA Abbasi, MA Gondal. | Computers, Materials & Continua (Tech Science) https://www.techscience.com/cmc/v73n2/48337 | Construction and optimization of TRNG based substitution boxes for block encryption algorithms. | 73(2), 2679-2696 | W | **2022** | **2.0** |
| 9. | MF Khan, **K Saleem**, T Shah, MM Hazzazi, I Bahkali, PK Shukla | Computational Intelligence and Neuroscience (Wiley) https://onlinelibrary.wiley.com/doi/10.1155/2022/8338508 | Block Cipher's Substitution Box Generation Based on Natural Randomness in Underwater Acoustics and Knight's Tour Chain. | 1, 8338508 | W | **2022** | **2.284** |
| 10. | MF Khan, **K Saleem**, MM Hazzazi, M Alotaibi, PK Shukla, M Aqeel, SA Tuncer | Computational Intelligence and Neuroscience (Wiley) https://onlinelibrary.wiley.com/doi/10.1155/2022/2532497 | Human Psychological Disorder towards Cryptography: True Random Number Generator from EEG of Schizophrenics and Its Application in Block Encryption's Substitution Box . | 1, 2532497 | W | **2022** | **2.284** |
| 11. | A Ahmed, **K Saleem**, O Khalid, J Gao, U Rashid | Neurocomputing (Elsevier) https://doi.org/10.1016/j.neucom.2022.09.023 | Trust-aware denoising autoencoder with spatial-temporal activity for cross-domain personalized recommendations | 511 &477-494 | W | **2022** | **6** |
| 12. | U Rashid, A Javid, AR Khan, L Liu, A Ahmed, O Khalid, **K Saleem,** S Meraj, U Iqbal, R Nawaz | PeerJ Computer Science https://peerj.com/articles/cs-888/ | **A hybrid mask RCNN-based tool to localize dental cavities from real-time mixed photographic images** | 8, e888 | W | **2022** | **1.392** |
| 13. | MF Khan, **K Saleem**, MA Alshara, S Bashir | Scientific Reports (Springer Nature) https://doi.org/10.1038/s41598-021-93344-z | Multilevel Information Fusion for Cryptographic Substitution Box Construction based on Inevitable Random Noise in Medical Imaging | 11 (1), 14282 | W | **2021** | **4.380** |
| 14. | S Naseer, QA Minhas, K Saleem, GF Siddiqui, N Bhatti, H Mahmood, G Farooq | PeerJ Computer Science https://peerj.com/articles/cs-617/ | A Game Theoretic Power Control and Spectrum Sharing Approach Using Cost Dominance in Cognitive Radio Networks | 7, e617 | W | **2021** | **1.392** |
| 15. | AR Khan, U Rashid, **K Saleem**, A Ahmed | PeerJ Computer Science https://peerj.com/articles/cs-449/ | An architecture for non-linear discovery of aggregated multimedia document web search results | 7, e449 | W | **2021** | **1.392** |
| 16. | A Ahmed, **K Saleem**, O Khalid, U Rashid | Expert Systems with Applications (Elsevier) https://doi.org/10.1016/j.eswa.2021.114757 | On Deep Neural Network for Trust Aware Cross Domain Recommendations in E-commerce | 174, 114757 | W | **2021** | **6.954** |

| S. No. | Name of Author | Journal (Publisher) | Paper Title | Vol/Issue, Pages | | Year | IF |
|---|---|---|---|---|---|---|---|
| 17. | U Rashid, **K Saleem**, A Ahmed | Multimedia Tools and Applications (Springer Nature) https://doi.org/10.1007/s11042-021-10603-x | MIRRE approach: nonlinear and multimodal exploration of MIR aggregated search results | 80 (13), 20217-20253 | W | **2021** | **2.757** |
| 18. | GF Siddiqui, MZ Iqbal, **K Saleem**, Z Saeed, A Ahmed, IA Hameed; A Ahmed, MF Khan | IEEE Access https://doi.org/10.1109/ACCESS.2020.3028315 | A Dynamic Three-Bit Image Steganography Algorithm for Medical and e-Healthcare Systems | 8, 181893 | 52 W 2020 | **2020** | **3.367** |
| 19. | A Ahmed, **K Saleem**, U Rashid, A Baz | IEEE Access https://doi.org/10.1109/ACCESS.2020.3014051 | Modeling Trust Aware Recommendations with Temporal Dynamics in Social Networks | 8, 149676 | W | **2020** | **3.367** |
| 20. | MI Malik, MA Sindhu, AS Khattak, RA Abbasi, **K Saleem** | Expert Systems (Wiley)**.** https://doi.org/10.1111/exsy.12608 | Automating test oracles from restricted natural language agile requirements | 38 (1), e12608 | W | **2020** | **2.587** |
| 21. | A Ahmed, MF Khan, **K Saleem**, T Shah | IEEE Access https://doi.org/10.1109/ACCESS.2019.2925081 | A Novel Design of Cryptographic SP-Network Based on Gold Sequences and Chaotic Logistic Tent System | 7, 84980 - 84991 | W | **2019** | **3.754** |
| 22. | MF Khan, A Ahmed, **K Saleem** | IEEE Access https://doi.org/10.1109/ACCESS.2019.2893176 | A Novel Cryptographic Substitution Box Design using Gaussian Distribution | 7, 15999-16007 | W | **2019** | **3.754** |
| 23. | T Qasim, M Zia, QA Minhas, N Bhatti, **K Saleem**, H Mahmood | IEEE Communications Letters HTTPS://DOI.ORG/10.1109/LCOMM.2018.2819643 | An Ant Colony Optimization Based Approach for Minimum Cost Coverage on 3-D Grid in Wireless Sensor Networks | 22 (6), 1140 – 1143 | W | **2018** | **3.457** |
| 24. | Z Batool, M Usman, **K Saleem**, M Abdullah-Al-Wadud, Fazal-e-Amin, A Al-Eliwi | Journal Of Medical Imaging And Health Informatics (American Scientific Pub.) https://doi.org/10.1166/jmihi.2 | Disease–Disease Association Using Network Modeling: Challenges and Opportunities | 8 (4), 627–638 | W | **2018** | **0.499** |
| 25. | S Qadri, DM Khan, SF Qadri, A Razzaq, N Ahmad, M Jamil, AN Shah, SS Muhammad, **K Saleem**, SA Awan | Journal of Sensors (Wiley) https://doi.org/10.1155/2017/3515418 | Multisource Data Fusion Framework for Land Use/Land Cover Classification Using Machine Vision | 1, 3515418 | W | **2017** | **2.057** |
| 26. | F Baig, MF Khan, S Beg, T Shah, **K Saleem** | Nonlinear Dynamics (Springer Nature) https://link.springer.com/article/10.1007/s11071-015-2580-5 | Onion steganography: a novel layering approach | 84 (3), 1431-1446 | W | **2016** | **3.464** |
| 27. | **K Saleem**, R. Jahangir, W. Masood, M. Siddiq | Physics of Plasmas (AIP) https://doi.org/10.1063/1.4930270 | Interaction of fast magnetoacoustic solitons in dense plasmas | 22 (9), 092312 | W | **2015** | **2.07** |
| 28. | MM Abbas, Z Muhammad, **K Saleem**, NA Saqib, H Mahmood | Journal of Circuits, Systems, and Computers (World Scientific) https://doi.org/10.1142/S0218126615500413 | Energy Harvesting and Management in Wireless Networks for Perpetual Operations | 24 (03), 1550041 | W | **2015** | **0.308** |
| 29. | MM Abbas, MA Tawhid, **K Saleem**, Z Muhammad, NA Saqib, H Malik, H Mahmood | International Journal of Distributed Sensor Networks (Sage) https://doi.org/10.1155/2014/436107 | Solar Energy Harvesting and Management in Wireless Sensor Networks | 10 (7), 436107 | W | **2014** | **0.665** |
| 30. | **K Saleem**, Z Bellahsene, E Hunt | Information Systems (Elsevier) https://doi.org/10.1016/j.is.2008.01.010 | PORSCHE: Performance ORiented SCHEma mediation | 33 (7-8), 637-657 | W | **2008** | **1.660** |

| S. No. | Title of the Book | Year, Publisher |
|---|---|---|
| 1. | Schema Matching and Integration When schemas are in thousands, Khalid Saleem, ISBN-13 : 978-3-8484-3566-1 | LAP LAMBERT Academic Publishing, **April 2012** |

| S. No. | Name of Author | Proceedings Detail | Paper Title |
|---|---|---|---|
| 1. | Wahid, Junaid Abdul; Shi, Lei; Tao, Yongcai; Lin, Wei; Saleem, Khalid | 5th International Conference on Communication and Information Processing, November 2019, Pages 201–209. **October 15–17, 2019**, Chongqing, China | Incorporation of social media indicator in e-Government index. |
| 2. | Zafar Iqbal, Saqib Iqbal, Mubashar Mushtaq, Ghazanfar Farooq, Khalid Saleem | CAINE 2018, October 8–10, **2018**, New Orleans, LA, USA | GLCM based Skin Diseases Classification using Texture Features. |
| 3. | Naveed Tariq, Khalid Saleem, Mubashar Mushtaq, Muhammad Ali Nawaz. | ICISDM '18, April 9–11, **2018**, Lakeland, FL, USA | Snow Leopard Recognition Using Deep Convolution Neural Network. |
| 4. | Kanwal Kiani, Khalid Saleem | . ICISDM **2017**, April 01-03, **2017**. Charleston, South Carolina, USA | K-Nearest Temperature Trends: A Method for Weather Temperature Data Imputation. |
| 5. | Muhammad Fahad Khan, Khalid Saleem and Mubashar Mushtaq. | ITNG-2017, April 10-12, **2017**. Las Vegas, Nevada | Optimally Compressed Digital Optimally Compressed Digital Content Delivery Using Short Message Service. |
| 6. | Tehreem Qasim, Qurrat ul Ain Minhas, Alam Mujahid, Naeem Ali Bhatti, Mubashar, Mushtaq, Khalid Saleem, Hasan Mahmood, M.Shujah and Islam Sameem. | ITNG-2017, April 10-12, **2017**. Las Vegas, Nevada, USA | ACO-Discreet: An efficient node deployment approach in wireless sensor networks. |
| 7. | Adeel Ahmed, Khalid Saleem and Mubashar Mushtaq... | SEDE-2016, September 26-28, **2016,** Denver, Colorado, USA | Pakistan Genetic Disease Database |
| 8. | Adeel Ahmed, Khalid Saleem and Mubashar Mushtaq. | SEDE-2016, September 26-28, **2016**. Denver, Colorado, USA | Analyzing Patterns of Scientific Collaboration using Centrality Measures and Modularity. |
| 9. | Muhammad Fahad Khan, Mubashar Mushtaq, Khalid Saleem and Saira Beg. | CATA-2016, April 4-6, **2016**. Las Vegas, Nevada, USA | Audio2SMS+: Enhancing Audio Compression for Communication Systems in Low Signal Strength Areas |
| 10. | Khalid Saleem. | Keynote, 1st International Conference on Information and Communication Technology | m-Government: Anywhere Anytime Government Services |

| | | Trends, Pages 170-173, September **2013**, Karachi, Pakistan | |
|---|---|---|---|
| 11. | Adeel Ahmed and Khalid Saleem | Emerging Trends and Applications in Information Communication Technologies, Series Title: Communications in Computer and Information Science, Publisher: Springer Berlin Heidelberg, ISBN: 978-3-642-28962-0 (Online), ISSN: 1865-0929, March **2012**, Volume 281, pp 31-42, DOI 10.1007/978-3-642-28962-0_4 | Haplotype Segment Algorithm for Predicting Disease Gene Locus based on Distance/Similarity Measures |
| 12. | Danish Altaf Satti, Khalid Saleem. | In proceeding of: Conference on Language & Technology October **2012**, Lahore | Complexities and Implementation Challenges in Offline Urdu Nastaliq OCR. |
| 13. | Khalid Saleem and Zohra Bellahsene | Springer Berlin / Heidelberg , Book Series: Lecture Notes in Computer Science, ISSN: 0302-9743 (Print) 1611-3349 (Online), Volume : 5870/2009, Book: On the Move to Meaningful Internet Systems, ISBN: 978-3-642-05147-0, Pages: 406-413, November **2009**. Vilamoura , Portugal . DOI : 10.1007/978-3-642-05148-7_30. | Complex Schema Match Discovery and Validation through Collaboration |
| 14. | Khalid Saleem, Zohra Bellahsene | Springer Berlin / Heidelberg , Book Series : Lecture Notes in Computer Science, ISSN: 0302-9743 (Print) 1611-3349 (Online), Volume : 5231/2008, Book: Conceptual Modeling, ISBN: 978-3-540-87876-6, Pages: 341-354, October **2008**. Barcelona , Spain . DOI : 10.1007/978-3-540- 87877-3_25. | Automatic Extraction of Structurally Coherent Mini-Taxonomies |
| 15. | Khalid Saleem, Zohra Bellahsene and Ella Hunt,. Publisher:. | Springer Berlin / Heidelberg , Book Series: Lecture Notes in Computer Science, ISSN: 0302-9743(Print) 1611-3349 (Online), Volume : 4653/2007, Book: Database and Expert Systems Applications, ISBN: 978-3-540-74467-2, Pages: 844-853, August **2007**. Regensburg , Germany . DOI : 10.1007/978-3-540-74469-6_82. | Performance Oriented Schema Matching |

| Project Title | Principal/Co-Principal Investigator | Amount | Sponsoring Agency | Duration |
|---|---|---|---|---|
| Farmers Field-School Data (NARC) Capturing and Analysis for optimal usage of Pesticides | Principal Investigator | 60,000/- | University Research Fund<br><br>Quaid-i-Azam University | 2011-2012<br><br>(12 months) |
| *ORPAI - Optimal Route Planning using Artificial Intelligence :* **For last mile Delivery Services: A case of Intelligent Transport System** | Principal Investigator | 9.3 million | National Centre for Big Data and Cloud Computing (NCBC), HEC<br><br>Industrial Partner : Tranzum Courier Service Pvt. Ltd. (TCS) | Jan. 2021 – Dec. 2022<br><br>(24 months) |

| Patent Name/ Authors | Patent No/ Certificate No/ Application No. | Year of Patent Obtained | Patent Agency | |
|---|---|---|---|---|
| 1. System and Method for Generating Substitution Box Based on N-Level Quantum Sensors Stream. Muhammad Fahad Khan; **Khalid Saleem** And Zain ul Islam | 292/2024 | Filed | Intellectual Property Organization of Pakistan | |
| 2. A patent has been filed in the Intellectual Property Organization of Pakistan for "System and Method for Generating Substitution and Permutation Box Using Quantum Random Bits". Muhammad Fahad Khan; **Khalid Saleem** And Zain ul Islam | 291/2024 | Filed | Intellectual Property Organization of Pakistan | |
| 3. "System and Method for Generating Substitution Box Using Thermal Image Partitions". Muhammad Fahad Khan; **Khalid Saleem** | | | Intellectual Property Organization of Pakistan | |
| 4. "System and Method of Substitution Box Construction for Quantum Computers using Quantum Depolarizing Noise". Muhammad Fahad Khan; **Khalid Saleem** | 290/2024 | Filed | | |
| | | | Intellectual Property Organization of Pakistan | |
| | 196-2/2025 | Filed | | |

| Conference Title | Organizer | Location | Date | Sponsoring Agency |
|---|---|---|---|---|
| 14th IEEE International Conference on Emerging Technologies 2018 | Organizing Chair | Ramada Hotel, Islamabad, Pakistan | 21-22 Nov, 2018 | ORIC QAU, HEC |

i:    **Conferences Participated**

| Conference Title | Organizer | Location | Date | Sponsoring Agency |
|---|---|---|---|---|
| CAINE 2018: 31st International Conference on Computer Applications in Industry and Engineering. | International Society for Computers and Their Applications (ISCA) | New Orleans, Louisiana, USA | October 8-10, 2018 | HEC, Pakistan |
| ICISDM 2017: 1st International Conference on Information System and Data Mining | College of Charleston | Charleston, SC, USA | April 01 - 03, 2017 | HEC, Pakistan |

| ICICTT 2013: 1st International Conference on Information and Communication Technology Trends (Keynote Speaker) | Federal Urdu University Arts, Science and Technology | Karachi | 2-5 September 2013 | HEC, NBP, ABL, Pakistan Standards |
|---|---|---|---|---|
| ER 2008: 27th International Conference on Conceptual Modeling | Universitat Politecnica de Catalunya | Barcelona , Spain | October 2008 | University of Montpellier |
| DEXA 2007: 18th International Conference on Database and Expert Systems Applications (DEXA) | DEXA Society: Biesenfeldweg 12, A-4040 Linz Austria | Regensburg , Germany | August 2007 | University of Montpellier |
| DéCOR - Workshop co-located with 7éme journées francophones de Extraction et Gestion des Connaissances (EGC) | University of Namur | Namur, Belgium | January 2007 | University of Montpellier |

**j:    Awards**

| S. No. | Title of the Award | Organization |
|---|---|---|
| 1. | Postdoctoral Fellowship (2012) - France | Higher Education Commission, Pakistan |
| 2. | MS/PhD Scholarship (2004-2008) | Higher Education Commission, Pakistan |
| 3. | President Talent Scholarship at Bachelors Level (1989-1990) | University Grants Commission, Pakistan |
| 4. | Bachelors of Science – Nathia Gali Summer School (1990) | University Grants Commission, Pakistan |

**Member Editorial Board - Journals**
- Member Editorial Advisory Board - *Pakistan Journal* of Computer and Information Systems (PJCIS)
- Member Editorial Board, Foundation University Journal of Engineering and Applied Sciences

**Reviewer for Journals**
- ACM Transactions on Recommender Systems
- IEEE Access
- IEEE Transactions on Service Computing
- IEEE Transactions on Neural Networks and Learning Systems
- Springer Nature Neural Computing and Applications
- Springer Nature  Multimedia Tools and Applications
- Elsevier Information Fusion
- Elsevier Knowledge Based Systems
- Elsevier Expert Systems and Applications
- Elsevier Engineering Applications of AI
- Elsevier Journal of Computational Science
- MDPI Symmetry
- MDPI International Journal of Medical Research
- MDPI Applied Science
- KSII  Transactions on Internet and Information Systems
- TechScience Computers, Materials and Continua
- Co-Reviewer (2012) – The Very Large Databases (VLDB) Journal, Springer-Verlag
- Co-Reviewer (2012) – IEEE Transactions on Knowledge and Data Engineering

**Reviewer for Conferences/Book Chapters**
- International Conference on Information Systems and Data Mining (ICISDM - ACM)
- International Conference on  Frontiers of Information Technologies (FIT)
- 22nd International Conference on Advanced Information Systems Engineering (CAiSE'10)
- Book Chapter for book 'Schema Matching and Mapping', Bellahsene, Z.; Bonifati, A.; Rahm, E. (eds.), Springer-Verlag, Data-Centric Systems and Applications, 2011

**External Examiner (MS and PhD Thesis)**
- COMSATS University/COMSATS Institute of Information Technology (CIIT), Islamabad.
- COMSATS University/COMSATS Institute of Information Technology (CIIT), Sahiwal.
- Bahria University, Islamabad.
- International Islamic University (IIU), Islamabad.
- Capital University of Science and Technology, Islamabad

**Professional Affiliations:**
- ACM (American Computing Machinery)
- ACL (Association of Computational Linguistics)
- IEEE (Institute of Electrical and Electronics Engineers) 2018-2019

- On Board of Directors (2010 – 2022) - Pak-France Alumni Network (Registered Non-profit Society)