

Nasir SALEEM

Ph.D Electrical Engineering
Audio/Speech and Deep Learning
[Google Scholar](#), [ORCID](#), [Web Sciences](#), [Scopus ID](#)

Assistant Professor
Electrical Engineering Department
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Education

Postdoctoral Fellow (December 2022 -- December 2023)
Islamic International University Malaysia (IIUM), Kuala Lumpur, Malaysia
Research: *Lightweight deep Learning E2E Speech Enhancement*.

Ph.D. Electrical Engineering (October 2017 -- May 2021)
University of Engineering and Technology (UET), Peshawar-25000, Pakistan
Research: *Speech Enhancement in Complex Noisy Environments*.

M.Sc. Electrical Engineering (October 2009 -- August 2012)
CECOS University of IT and Emerging Sciences, Peshawar-25000, Pakistan
Research: *Speech Compression for Recognition*.

B.Sc. Telecommunication Engineering (October 2004 -- August 2008)
University of Engineering and Technology (UET), Peshawar-25000, Pakistan
Research: *Signal Processing for VoMIP*.

Employment

Assistant Professor (April 2014 -- Till Date)
Electrical Engineering Department, FET, Gomal University, D.I.Khan-29050, Pakistan
Teaching Core Engineering Courses (Undergraduate and Postgraduate)
Digital Signal Processing, Digital Speech Processing and Coding, Audio and Speech processing for enhancement, and Deep Learning for audio and speech processing.

Senior Lecturer (December 2012 -- April 2014)
Electrical Engineering Department, IET, Gomal University, D.I.Khan-29050, Pakistan
Teaching Core Engineering Courses (Undergraduate)
Digital Signal Processing, Signals and Systems, Digital Communication, and Wireless Communication.

Lecturer (November 2008 -- December 2012)
Institute of Computing and Information Technology, Gomal University, D.I.Khan, Pakistan
Teaching Core Engineering Courses (Undergraduate)
Digital Signal Processing, Signals and Systems, Digital Communication, and Wireless Communication.

Graduate Research Associate (October 2018 -- October 2020)
Center for Intelligent Systems and Networks Research (CISNR), University of Engineering and Technology, Peshawar-25000, KPK, Pakistan
Coding and development of intelligent algorithms for speech processing, technical writing of research articles and reports, and formal analysis of the data and results.

Research Interests

Digital Signal Processing, Adaptive Filters, Speech Processing, Audio-Visual Speech Processing, Biomedical Signal Processing, Speech Emotion Recognition, Low-Resource ASR, and Deep Learning/Machine Learning.

Research Projects (Funded)

- 1) Enhanced Speech Cochlear Implant Enables Even Profoundly Deaf People to Hear Better: An Artificial Intelligence Approach (Submitted).
 PI/Co PI: *Dr. Nasir Saleem, Prof Muhammad Irfan* *Sep 2022*
 - Develop and design AI-Enabled Cochlear Implants for Hearing Loss People
 - Preparing prototype and commercializing the product in the hearing industry
- 2) Audio-Visual Wearable Assistive Devices for Listening Impaired People in Pakistan (Submitted).
 PI-Co PI: *Dr. Nasir Saleem, Prof Muhammad Irfan* *Sep 2021*
 - Develop and design AI-Enabled Cochlear Implants and Assistive Devices for Hearing Loss People
 - Preparing prototype and commercializing the product in the hearing industry
- 3) Deep Neural Network-based COVID-19 Mask and Temperature Detection (Funded by National ICT RD, Ministry of IT, Government of Pakistan).
 Project Advisor: *Dr. Nasir Saleem* *Sep 2020*
 - Developed and designed an AI-Enabled prototype for detecting Covid-19 Mask.
 - Prepared the prototype to commercialize in industry.
- 4) Artificial intelligence-based Drowsy Driver Detection (Funded by National ICT RD, Ministry of IT, Government of Pakistan).
 Project Advisor: *Dr. Nasir Saleem* *Sep 2021*
 - Developed and designed an AI-Enabled prototype for detecting drowsiness during driving.
 - Prepared the prototype to commercialize in industry.
- 5) GSM-based Electronic Voting Machine (Funded by National ICT RD, Ministry of IT, Government of Pakistan).
 Project Advisor: *Dr. Nasir Saleem* *May 2015*
 - Developed and designed a GSM-Enabled prototype for Electronic Voting Machine.
 - Prepared the prototype to commercialize in industry.
- 6) Energy Efficient Ceiling Fan using BLDC Motor-A Comparative Analysis (Funded by ORIC Gomal University, Dera Ismail Khan-29050, Pakistan).
 Project Advisor: *Dr. Nasir Saleem* *May 2017*
 - Developed and designed an energy efficient ceiling fan prototype.
 - Prepared the prototype to commercialize in industry.

Research Projects (Non-Funded)

- 1) **Robust Neural Speech Enhancement Models**
 Supervisor: *Professor Muhammad Irfan Khattak* (Jan 2018 - Dec 2020)
 - Built robust and intelligent speech enhancement models in complex noisy environments.
 Novel techniques to enhance noisy speech were designed based on the Feed-Forward DNNs, Deep Belief Networks, and Recurrent Neural Models. Journal articles were produced and the results were published in various well-known venues.
 - **Applied Acoustics, Applied Soft Computing, IEEE ACCESS, JIFS, IJIMAI, JCTE, IJST**
- 2) **High Performance Neural Models for End-2-End Speech Processing**
 Supervisor: *Professor Teddy Surya Gunawan* (Jan 2021 - Dec 2023)
 - Built robust and intelligent E2E speech processing models.
 Novel techniques to enhance noisy speech were designed based on Convolutional Recurrent Models, Transformers Bottlenecks, and Recurrent Capsule Models. Journal articles were produced and the results were published in various well-known venues.
 - **ESWA, IEEE ACCESS, CAAI Transactions, IVC, KBS, IEEE ACCESS, PLOS ONE**

Ph.D Thesis Supervision (2021 Onwards)

1) **Single Channel Speech Enhancement with Deep Recurrent Convolutional Neural Networks for Reduced Computational Cost. (Ongoing)**

This research thesis deals with novel speech enhancement techniques to enhance the noisy speech and anticipated to design intelligent systems with LSTM, GRU, and SRU combined with CNNs.

- One Journal paper from research has been accepted in International Journal of Interactive Multimedia and Artificial Intelligence Journal (Impact factor 4.931 JCR 2022).
- Second research paper is under review in Speech Communication Journal.

2) **Audio-Visual Speech Processing with Compact Deep Neural Networks. (Ongoing)**

This research thesis deals with novel audio-video speech enhancement and ASR systems, anticipated to design intelligent systems based on CNNs modifications, GRUs, and LSTM.

- One research paper has been submitted in International Journal of Interactive Multimedia and Artificial Intelligence Journal (Impact factor 4.931 JCR 2022). The second paper is published in PLOS One (Impact factor 3.752 JCR 2022).

3) **End-2-End Compact Audio-Only Neural Speech Enhancement for Communication Systems. (Ongoing)**

This research thesis deals with novel Audio-only speech enhancement techniques and is anticipated to design intelligent systems using Capsule networks (CNN extensions), Bi-GRU, Bi-LSTM, and Bi-SRU.

- One research paper is under review in Applied Acoustics (IF 4.2 JCR 2023).

4) **Visually Driven E2E Multimodal Neural Speech Enhancement for Mobile Communication. (Ongoing)**

This research thesis deals with novel Audio-Video speech emotion recognition systems and is anticipated to design intelligent systems based on CNNs, CapsNet, Bi-GRU, Bi-LSTM, and Bi-SRU.

- Proposal Accepted.

Master Thesis Supervision (Titles with Status)

- 1) Deep Neural Networks-Based Supervised Signal Denoising (Sep 2018)
 - Developed Deep Neural Networks in supervised fashion to reduce additive background noise and improved the listening abilities in adverse background noises.
 - **IEEE Conference** is published from the research.
- 2) Dual Microphone Supervised Source Separation (Sep 2018)
 - Developed algorithm for dual channel source separation in supervised fashion and reduced signal interference, improved source quality, and its recognition in noisy backgrounds.
 - **IEEE Conference** is published from the research.
- 3) Low Rank and Sparse Decomposition Unsupervised Speech Enhancement (Sep 2016)
 - Unsupervised speech enhancement algorithms with various divergence models are designed and developed to increase speech quality and recognition in highly nonstationary noises.
 - Two Journal publications are published from the research. **IJST**
- 4) Computational Auditory Scene Analysis-based Monaural Source Separation (Sep 2019)
 - Source separation model in CASA domain is developed and implemented in noisy backgrounds.
 - **IEEE Conference/Journal Paper** is published from the research. **IJSER**
- 5) Adaptive Algorithms for Millimeter Wave Cellular Systems: Estimation and Precoding (Sep 2018)
- 6) Compact Multi-band Antenna for portable devices using Machine Learning (May 2023)
 - **IEEE Conference paper** submitted from the research.
- 7) Secured Smart Grids against Stuxnet using intelligent encryption authentication (May 2023)
- 8) Impact of Grid-Connected Photovoltaic on Intelligent Distributed Systems (May 2023)
- 9) Continuous Speech Emotion Recognition with Deep Convolutional Neural Networks (Ongoing)
- 10) UAV-Embedded Sound Source Localization Using Convolutional Neural Networks (Ongoing)
- 11) Cross Phase Modulation for Long Haul Communication in WDM Transmission System (2023)
- 12) Identification of Fault Location and Types in Transmission Lines using Artificial Intelligence(Ongoing)

Bachelor Thesis Supervision (Selected Titles with Status)

- 1) Deep Neural Network-based COVID-19 Mask and Temperature Detection (Funded Project: Complete)
- 2) Artificial intelligence-based Drowsy Driver Detection (Funded Project: Complete)
- 3) GSM-based Electronic Voting Machine (Funded Project: Complete)
- 4) Image Processing-based Early Fire Detection using Machine Learning (Funded Project: Complete)
 - Journal Paper is published from the research. **JMCMS**
- 5) Intelligent Video Surveillance System Using Deep Neural Networks (Fund Applied)
- 6) Supervised Speech Enhancement for Mobile Communication (Complete)
- 7) Energy Efficient Ceiling Fan using BLDC Motor-A Comparative Analysis (Funded Project: Complete)

Professional Research Activities

Journal Reviewer: A Reviewer for well-reputed journals, IEEE Transactions on Audio, Speech, and Language Processing, IEEE Transactions on Human-Machine Systems, IEEE Transactions on Artificial Intelligence, IEEE Access, IET Signal Processing, Neural Networks, Expert Systems with Applications, Artificial Intelligence and Applications Applied Intelligence, Neural Processing Letters, Applied Acoustics, Biomedical Engineering, Modern Physics Letters B, International Journal of Interactive Multimedia and Artificial Intelligence, International Journal of Engineering, Advances in Science Technology Engineering Systems Journal, Scientia Iranica, Electrical Science and Engineering, Journal of Ambient Intelligence and Humanized Computing, Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, Wireless Communications and Mobile Computing.

Guest Editor: A Guest Editor for well-reputed journals, Image and Vision Computing, ACM Transactions on Asian and Low-resource Language Information Processing, Journal of Ambient Intelligence and Smart Environments, Disability and Rehabilitation: Assistive Technology, Journal of Internet Technology, Expert Systems, Journal of Autism and Developmental Disorders, Big Data, Acta Geophysica, Photogrammetric Record, and Frontiers in Signal Processing.

Administrative Activities

- 1) Serving as the Deputy Director, Directorate of Quality Assurance, Gomal University, Pakistan.
 - Compiling and report statistical data for compliance with HEC & other concerned bodies.
 - Liaison with faculty members for compilation of self-assessment reports (SARs).
 - Assisting/Guiding faculty members (PhD/MS supervisors) in thesis evaluations.
 - Faculty/PhD students research verifications and endorsement.
- 2) Serving as the Director, Institute of Computing and Technology, Gomal University, Pakistan.
- 3) Served as the Head of Electrical Engineering Department, FET, Gomal University, Pakistan.
- 4) Served as Assistant to Dean, Faculty of Engineering and Technology, Gomal University, Pakistan.
- 5) Serving as the Outcome-Based Education Coordinator, EED, FET, Gomal University, Pakistan.
 - Working with faculty and staff of the Engineering department in developing, promoting, and implementing student learning outcomes at the course and program level.
 - Assisting department head to integrate assessment of student learning outcomes activities and data into the program planning and review process.
 - Provide educational and training activities pertaining to the assessment of student learning outcomes for departmental or program faculty and staff.
 - Dealing Engineering council visits.
- 6) Serving as a Member Board of Faculty, FET, Gomal University, Pakistan
- 7) Serving as a Member Board of Studies, EED, FET, Gomal University, Pakistan
- 8) Serving as a Member Industrial Advisory Board (IAB), EED, FET, Gomal University, Pakistan.
 - Review the Department's objectives and goals in order to stimulate academic and professional excellence and to enhance education and research activity.
 - Identify opportunities for industry collaboration and commercialization of academic activities.

Research Publications (Cumulative Impact Factor: 91.60, H-Index: 13, i10-Index: 24)

Book Chapters

1. **Nasir Saleem**, Effect of Compression on Speech Recognition, LAP LAMBERT Academic Publishing, ISBN: 978-3330081017 2.
2. **Nasir Saleem**, and Muhammad Irfan Khattak, Unsupervised Speech Enhancement based on Phase Aware Time-Frequency Mask Estimation, Applied Speech Processing, 1st Edition, ISBN: 9780128238981, Elsevier Publisher

Editorials

1. Verdu, Elena, Yuri Vanessa Nieto, and **Nasir Saleem**. Big data and artificial intelligence in earth science: recent progress and future advancements. *Acta Geophysica* 71, no. 3 (2023): 1373-1375.
2. Verdu, Elena, Yuri Vanessa Nieto, and **Nasir Saleem**. Web 3.0 and blended learning for increasing student retention and engagement in e-learning environment. *Computer Applications in Engineering Education*, 2023.

Journals (WOS/Scopus Indexed)

1. Almadhor, Ahmad, Rizwana Irfan, Jiechao Gao, **Nasir Saleem**, Hafiz Tayyab Rauf, and Seifedine Kadry, E2E-DASR: End-to-end deep learning-based dysarthric automatic speech recognition. *Expert Systems with Applications* 222 (2023): 119797.
2. **Nasir Saleem**, Teddy Surya Gunawan, Mira Kartiwi, Bambang Setia Nugroho, and Inung Wijayanto. NSE-CATNet: Deep Neural Speech Enhancement using Convolutional Attention Transformer Network. *IEEE Access* (2023).
3. **Nasir Saleem**, Jiechao Gao, Rizwana Irfan, Ahmad Almadhor, Hafiz Tayyab Rauf, Yudong Zhang, and Seifedine Kadry. DeepCNN: Spectro-temporal feature representation for speech emotion recognition. *CAAI Transactions on Intelligence Technology* (2023).
4. Peracha, Fahad Khalil, Muhammad Irfan, Nema Salem, and **Nasir Saleem**. Causal speech enhancement using dynamical-weighted loss and attention encoder-decoder recurrent neural network. *Plos one* 18, no. 5 (2023): e0285629.
5. **Nasir Saleem**, Muhammad Irfan, Salman A. AlQahtani, Atif Jan, Irshad Hussain, Muhammad Naeem Khan, and Mostafa Dahshan. "U-Shaped Low-Complexity Type-2 Fuzzy LSTM Neural Network for Speech Enhancement." *IEEE Access* 11 (2023): 20814-20826.
6. Fazal Wahab, Ye, Zhongfu, **Nasir Saleem**, Hamza Ali, Imad Ali. Efficient Gated Convolutional Recurrent Neural Networks for Real-Time Speech Enhancement. *International Journal of Interactive Multimedia and Artificial Intelligence* (2023).
7. Muhammad Irfan, **Nasir Saleem**, Jiechao Gao, Elena Verdu, and Javier Parra Fuente. Regularized sparse features for noisy speech enhancement using deep neural networks. *Computers and Electrical Engineering* 100 (2022): 107887.
8. **Nasir Saleem**, Jiechao Gao, Muhammad Irfan, Elena Verdu, and Javier Parra Fuente. E2E-V2SResNet: Deep residual convolutional neural networks for end-to-end video-driven speech synthesis. *Image and Vision Computing* 119 (2022): 104389.
9. **Nasir Saleem**, Jiechao Gao, Muhammad Irfan, Hafiz Tayyab Rauf, Seifedine Kadry, and Muhammad Shafi. Deepresgru: residual gated recurrent neural network-augmented Kalman filtering for speech enhancement and recognition. *Knowledge-Based Systems* 238 (2022): 107914.
10. Muhammad Irfan, **Nasir Saleem**, Aamir Nawaz, Aftab Ahmed Almani, Farhana Umer, and Elena Verdu. ERBM-SE: Extended Restricted Boltzmann Machine for Multi-Objective Single-Channel Speech Enhancement. *International Journal of Interactive Multimedia and Artificial Intelligence* 7, no. 4 (2022): 185-195.

11. **Nasir Saleem**, Muhammad Irfan Khattak, Mu'ath Al-Hasan, and Atif Jan. Multi-objective long-short term memory recurrent neural networks for speech enhancement. *Journal of Ambient Intelligence and Humanized Computing* 12, no. 10 (2021): 9037-9052.
12. **Nasir Saleem**, Muhammad Irfan Khattak, Aamir Nawaz, Farhana Umer, and Manesh Kumar Ochani. Perceptually weighted β -order spectral amplitude Bayesian estimator for phase compensated speech enhancement. *Applied Acoustics* 178 (2021): 108007.
13. **Nasir Saleem**, Muhammad Irfan Khattak, Mu'ath Al-Hasan, and Atif Jan. Learning time-frequency mask for noisy speech enhancement using Gaussian-Bernoulli pre-trained deep neural networks. *Journal of Intelligent and Fuzzy Systems* 40, no. 1 (2021): 849-864.
14. Muhammad Irfan, Mu'ath Al-Hasan, Atif Jan, **Nasir Saleem**, Elena Verdu, and Numan Khurshid. Automated detection of COVID-19 using chest X-Ray images and CT scans through multilayer-spatial convolutional neural networks. *International Journal of Interactive Multimedia and Artificial Intelligence* (2021).
15. **Nasir Saleem**, and Muhammad Irfan. Multi-scale decomposition-based supervised single channel deep speech enhancement. *Applied Soft Computing* 95 (2020): 106666.
16. **Nasir Saleem**, and Muhammad Irfan. Deep neural networks based binary classification for single channel speaker independent multi-talker speech separation. *Applied Acoustics* 167 (2020): 107385.
17. **Nasir Saleem**, Muhammad Irfan, Muath Al-Hasan, and Abdul Baseer Qazi. On learning spectral masking for single channel speech enhancement using feedforward and recurrent neural networks. *IEEE Access* 8 (2020): 160581-160595.
18. **Nasir Saleem**, and Muhammad Irfan. Deep neural networks for speech enhancement in complex-noisy environments. *International Journal of Interactive Multimedia and Artificial Intelligence* (2020).
19. **Nasir Saleem**, Muhammad Irfan Khattak, and E. V. Perez. Spectral phase estimation based on deep neural networks for single-channel speech enhancement. *Journal of Communications Technology and Electronics* 64 (2019): 1372-1382.
20. **Nasir Saleem**, and Muhammad Irfan. A review of supervised learning algorithms for single-channel speech enhancement. *International Journal of Speech Technology* 22, no. 4 (2019).
21. **Nasir Saleem**, Muhammad Irfan, Gunawan Witjaksono, and Gulzar Ahmad. Variance-based time-frequency mask estimation for unsupervised speech enhancement. *Multimedia Tools and Applications* 78 (2019): 31867-31891.
22. Sana, Muhammad Shahzaib, Muhammad Yousaf Ali Khan, **Nasir Saleem**, Imran Ullah Khan, and Arbab Waheed Ahmed. Improved cooperation in underwater wireless sensor networks. *Mehran University Research Journal of Engineering and Technology* 38, no. 4 (2019): 1009-1020.
23. Muhammad Yousaf Ali, Ehtasham Mustafa, Aamir Nawaz, **Nasir Saleem**, and Usman Illahi. Sensor fusion-based navigation for mobile robot in outdoor environment. *Mehran University Research Journal of Engineering and Technology* 38, no. 1 (2019): 113-128.
24. **Nasir Saleem**, Muhammad Irfan Khattak, and Abdul Baser Qazi. Supervised speech enhancement based on deep neural network. *Journal of Intelligent and Fuzzy Systems* 37, no. 4 (2019): 5187-5201.
25. **Nasir Saleem**, Muhammad Irfan Khattak, Muhammad Yousaf Ali, and Muhammad Shafi. Deep neural network for supervised single-channel speech enhancement. *Archives of Acoustics* 44 (2019).
26. **Nasir Saleem**, Muhammad Irfan, and Muhammad Shafi. Unsupervised speech enhancement in low SNR environments via sparseness and temporal gradient regularization. *Applied Acoustics* 141 (2018): 333-347.
27. **Nasir Saleem**, and Muhammad Irfan. Regularized sparse decomposition model for speech enhancement via convex distortion measure. *Modern Physics Letters B* 32, no. 22 (2018).
28. **Nasir Saleem**, and Gohar Ijaz. Low-rank sparse decomposition model-based speech enhancement using gammatone filterbank and Kullback–Leibler divergence. *International Journal of Speech Technology* 21 (2018): 217-231.

29. **Nasir Saleem**, and Muhammad Irfan. Noise reduction based on soft masks by incorporating SNR uncertainty in frequency domain. *Circuits, Systems, and Signal Processing* 37 (2018).
30. **Nasir Saleem**, Fazal Rehman and Muhammad Irfan. Supervised Monaural Speech Separation using Computational Auditory Scene Analysis. *International Journal of Scientific and Engineering Research* 9 (12), (2018), 61-65.
31. **Nasir Saleem**, and Tayyaba Gul Tareen. Spectral Restoration based speech enhancement for robust speaker identification. *International Journal of Interactive Multimedia and Artificial Intelligence* 5, no. 1 (2018): 34-39.
32. Nawaz, Aamir, Ehtasham Mustafa, **Nasir Saleem**, Muhammad Irfan, Muhammad Shafi, and Abdul Malik. Solving convex and non-convex static and dynamic economic dispatch problems using hybrid particle multi-swarm optimization. *Tehnički vjesnik* 24, no. 4 (2017): 1095-1102.
33. Muhammad Yousaf Ali, **Nasir Saleem**. Partial Discharge defects recognition using different Neural Network Model in XLPE cable under the DC stress. *Technical Journal* 22, (2017).
34. Nawaz, Aamir, **Nasir Saleem**, Ehtasham Mustafa, and Umair Ali Khan. An efficient global technique for solving the network constrained static and dynamic economic dispatch problem. *Turkish Journal of Electrical Engineering and Computer Sciences* 25, no. 1 (2017): 73-82.
35. **Nasir Saleem**. Single channel noise reduction system in low SNR. *International Journal of Speech Technology* 20, no. 1 (2017): 89-98.
36. **Nasir Saleem**, M. Shafi, E. Mustafa, and A. Nawaz. A novel binary mask estimation based on spectral subtraction gain-induced distortions for improved speech intelligibility and quality. *University of Engineering and Technology Taxila. Technical Journal* 20, no. 4 (2015).
37. **Nasir Saleem**, Ehtasham Mustafa, Aamir Nawaz, and Adnan Khan. Ideal binary masking for reducing convolutive noise. *International Journal of Speech Technology* 18 (2015).
38. Nawaz, Aamir, Tahir Nadeem Malik, **Nasir Saleem**, and Ehtasham Mustafa. Globalized Nelder Mead trained artificial neural networks for short-term load forecasting. *Journal of Basic Applied Science Research* 5 (2015): 1-13.
39. **Nasir Saleem**, Sher Ali, Ehtasham Mustafa, and Usman Khan. Speech Intelligibility Prediction Intended for State-of-the-Art Noise Estimation Algorithms. *Research Journal of Applied Sciences, Engineering and Technology* 7, no. 2 (2014): 296-302.
40. **Nasir Saleem**, A. Sher, K. Usman, and U. Farman. Speech enhancement with geometric advent of spectral subtraction using connected time-frequency regions noise estimation. *Research Journal of Applied Sciences, Engineering and Technology* 6, no. 6 (2013).
41. Muhammad Usman, Hafiz Adnan Habib, and **Nasir Saleem**. A hybrid approach for gender classification of web images. *International Journal of Computer Applications* 54, no. 7 (2012).
42. **Nasir Saleem**, Usman Khan, and Imad Ali. Implementation of Low Complexity CELP Coder and Performance Evaluation in terms of Speech Quality. *International Journal of Computer Applications* 54, no. 9 (2012).
43. **Nasir Saleem**, Sunniya Nasir, and Sher Ali. Comparative Analysis of Speech Compression Algorithms with Perceptual and LP-based Quality Evaluations. *International Journal of Computer Applications* 51 (2012): 37-41.
44. **Nasir Saleem**, and Tayyaba Tareen. Measuring the performance of handover mechanisms in UMTS for diverse traffic services classes to improve QoS. *International Journal of Computer Applications* 55, no. 11 (2012).

Referred Conferences

1. **Nasir Saleem**, Muhammad Irfan, Xuhui Chen, Muhammad Ali, Deep Neural Network based Supervised Speech Enhancement in Speech-Babble Noise, 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS).

2. Xuhui Chen, **Nasir Saleem**, Muhammad Irfan, Khalid Rabbani, Coherence based Dual Microphone Source Separation in Low SNR Noisy Environments, 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS).
3. Fahad Khalil Paracha, Sheeraz Ahmed, **Nasir Saleem**, Nisar Ahmed Qureshi, M Shahzaib Sana, Zahoor Ali Khan, Estimation and Equalization of Sparse Underwater Communication Channels, 2017 International Symposium on Wireless Systems and Networks (ISWSN).
4. Taimur Ahmed Khan, Muhammad Irfan Khattak, Abdul Baseer Qazi, **Nasir Saleem**, Xuhui Chen, Stacked Microstrip Array Antenna with Fractal Patches for Satellite Applications, 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS).
5. Muhammad Kamran Shereen, Muhammad Irfan Khattak, Muhammad Shafi, **Nasir Saleem**, Slotted Y-shaped millimeter waves reconfigurable antenna for 5G applications, 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS).
6. Ehtasham Mustafa, **Nasir Saleem**, Amir Nawaz, Abdul Malik and Muhammad Yousaf Ali Khan, Power Loss and Efficiency Analysis of Clamp Double Sub Module using Analytical and Numerical Method, 2019 International Conference on Electrical, Communication, and Computer Engineering (ICECCE), Swat, Pakistan, [2019]
7. Sohail, H. Khan, U. Khan, M. I. Khattak, **Nasir Saleem** and J. A. Nasir, Design and Analysis of a Novel Patch Antenna Array for 5G and Millimeter Wave Applications, 2019 2nd International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), Sukkur, Pakistan, 2019, pp. 1-6.
8. E. Mustafa, M. Y. Ali Khan, **Nasir Saleem**, A. Nawaz and A. Zafar, Modular Multilevel Converter Based HVDC System Efficiency Evaluation Using Analytical Method, 2018 International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET), Islamabad, Pakistan, 2018.
9. **Nasir Saleem**, Muhammad Irfan, Sheeraz Ahmad, M.Y. Ali, M.I. Mohmand, Machine Learning approach for improving the intelligibility of noisy speech, in 2020 17th International Bhurban Conference on Applied Sciences and Technology (IBCAST). IEEE, 2020.

Under Review Research Publications (Journals/Conferences)

1. Jawad Ali, **Nasir Saleem**, Single Channel Speech Enhancement System using Recurrent Capsule Networks, Applied Acoustics.
2. **Nasir Saleem** et al AIA-GRU: Attention-In-Attention GRU Encoder-Decoder for Dynamically-Weighted Loss-based Speech Enhancement, Expert Systems With Applications.
3. **Nasir Saleem** et al Towards Efficient End-to-End Complex Spectral Mapping-based Speech Enhancement with Deep Convolutional Recurrent Networks, Speech Communication Journal.
4. **Nasir Saleem** et al Towards Efficient Recurrent Architectures: A Deep LSTM Neural Networks in Applications to Speech Enhancement and Recognition, ACM Transactions on Asian and Low-Resource Language Information Processing.
5. **Nasir Saleem** et al E2E-DeepASR: End-to-End Automatic Speech Recognition using Deep Neural Network for Low Resource Languages, CAAI Transactions.
6. **Nasir Saleem** et al End-to-End 3D Convolutional Attention Recurrent Network for Speech Emotion Recognition. Applied Soft Computing.
7. **Nasir Saleem** et al Multi-Attention Bottleneck for Gated Convolutional Encoder-Decoder-based Speech Enhancement, IEEE ACCESS.
8. Jawad Ali, Junaid Mushtaq, **Nasir Saleem** et al End-to-End Waveform-based Lightweight Neural Models for Speech Enhancement, 2023 International Conference on IT and Industrial Technologies (ICIT2023).
9. Junaid Mushtaq, Jawad Ali, **Nasir Saleem** et al A Deep Neural Framework to Estimate Spectral Phase and Magnitude In Application to Single-Channel Speech Enhancement, 2023 International Conference on IT and Industrial Technologies (ICIT2023).

Personal Information

Full Name: **Dr. Nasir Saleem**
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Institute: **Gomal University, Pakistan**
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Date of Birth (DOB): **07-04-1985**
International Languages: **English (Reading, Writing, and Speaking)**
Email Address: **nasirsaleem@gu.edu.pk**
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Personal Webpage: **ASPDL Research Group**
Academic/Research Experience: **14.5 Years**
Computer/Research Skills: **Languages: MATLAB, Python, Verilog, and LaTeX.
Research: EndNote, KLEE, and CSeq**
Membership: **Association for Computing Machinery (ACM)
IEEE Student Member**

Referees

Professor Dr. Muhammad Irfan Khattak

Professor/ Ph.D Thesis Supervisor

Department of Electrical Engineering, Faculty of Computer and Electrical Engineering,
University of Engineering & Technology, Peshawar-25000, Pakistan

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Professor Dr. Teddy Surya Gunawan

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Islamic International University Malaysia, Kuala Lumpur, Malaysia

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