# Tehseen Zia

Email: tehseen.zia@comsats.edu.pk
Cell No.: +92-321-6056095
D.O.B.: 25 March, 1981

## Education
- **PhD, Computer Science**
  Vienna University of Technology, Vienna, Austria                    [2010]
- **MSc, Computer Science**
  University of Engineering and Technology Taxila, Pakistan           [2003]
- **Bachelor of Science (Major in Mathematics and Physics)**
  Government College Sargodha, Pakistan                               [2000]

## Research Interest
- Deep Learning
- Explainable Artificial Intelligence
- Trustworthy and Explainable Medical Image Diagnostics
- Language Models
- Neuro-symbolic reasoning

## Professional Experience
- **Associate Professor (Tenured)**
  COMSATS University Islamabad.                        [July, 2023 – present]
- **Co-principle Investigator**
  Medical Image Diagnostics Lab, National Center of Artificial Intelligence,
  Pakistan                                            [Feb, 2018 – Oct, 23]
- **Assistant Professor**
  COMSATS University Islamabad.                        [Dec, 2015 – Mar, 2023]
- **Artificial Intelligence Consultant**
  Middlesex University, London, UK                     [Feb, 2019 – Mar, 2020]
- **Assistant Professor**
  University of Sargodha                               [Nov, 2010 – Dec, 2015]
- **Research Scientist**
  Vienna University of Technology                      [Oct, 2007 – Nov, 2010]
- **Lecturer**
  University of Sargodha                               [Mar, 2005 – Oct, 2007]

## Award
- Overseas Scholarship for PhD
  Higher Education Commission of Pakistan              [2007]
- Pride of Performance Award                           [2020]
  National Center for Artificial Intelligence

## Research Grants
- Establishment of Medical Image Diagnostic Lab at COMSATS University
  Islamabad under National Center of Artificial Intelligence, Funding source:
  Higher Education Commission of Pakistan and Planning Commission of Pakistan.
  Funding worth: 97.57 million PKR rupees/ 0.45 million US dollars)       [2018]
- Won a funding of worth 16839.93 US dollar from COMSTECH for conducting AI-
  bootcamp.                                           [2023]
- Development of neuro-symbolic reasoning approach for DEARMS4CARS –
  European Union Funded Project. Funded source: Middlesex University, London,

UK. Funding worth:  3 million pkr rupees/ 15k British pounds).
[2019, 2022]

**Teaching Experience**
- Advanced Topics in Artificial Intelligence, Graduate course, Department of Computer Science, Comsats University Islamabad.                    [2018 – 2023]
- Advanced Topics in Neural Networks, Graduate course, Department of Computer Science, Comsats University Islamabad.                    [2018 – 2023]
- Artificial Neural Networks, Undergrad, Comsats University Islamabad.     [2023]
- Natural Language Processing, Comsats University Islamabad.        [2019 –2021]
- Deep Learning, Graduate-course, Department of Computer Science, Comsats University Islamabad                    [2017 – 2020]
- Artificial Intelligence, Undergrad course, Department of Computer Science, Comsats University Islamabad.                    [2015 – 2022]
- Machine Learning, Graduate-course, Department of Computer Science, University of Sargodha.                    [2011 – 2015]
- Artificial Intelligence, Undergrad course, Department of Computer Science, University of Sargodha.                    [2011 – 2021]
- Data Mining, Undergrad course, Department of Computer Science, University of Sargodha.                    [2011 – 2014]
- Advanced Algorithms, Graduate course, Department of Computer Science, University of Sargodha.                    [2012 – 2013]
- Data Structure and Algorithms, Undergrad course, Department of Computer Science, University of Sargodha.                    [2005 – 2007]
- Discrete Structures, Undergrad course, Department of Computer Science, University of Sargodha.                    [2005 – 2007]

**Journal Publications**
- Ammar Adeel, David Windridge, **Tehseen Zia**, Santosh Tirunagari, Latent Diffusion for Generative Visual Attribution in Medical Image Diagnostics, Submitted to Scientific Reports (2023).
- **Tehseen Zia,** David Windridge, Gohar Ali, Contrastive Concept-Phrase Pre-training for Generating Clinically Accurate and Interpretable Chest X-Ray Reports, Accepted at Neural Computing and Applications (2023).
- Ali Tariq, **Tehseen Zia**, Leveraging Counterfactual Concepts for Debugging and Improving CNN Model Performance, Submitted to Knowledge Based Systems (2023).
- Muhammad Nawaz, Basma Nasir, Tehseen Zia2,3, David Windridge, and Santosh Tirunagari, MDVA-GAN v2: A Generative Model for Data Tagging in Medical Images, Submitted to Scientific Reports (2023).
- **Tehseen Zia**, Abdul Wahab, David Windridge, Nauman Bashir, "Visual Attribution of Medical Images with Adversarial Latent Transformations", Computers in Biology and Medicine (2023). Available at: https://www.sciencedirect.com/science/article/abs/pii/S0010482523009861
- **Tehseen Zia**, Zeeshan Nisar, and Shakeeb Murtaza. "Counterfactual Explanation and Instance-Generation using Cycle-Consistent Generative Adversarial Networks." Available on: https://arxiv.org/abs/2301.08939 (2023).
- Waleed Abbas, **Tehseen Zia**, David Windridge, Santosh Tirunagari, "Pre-training Transformers on British and Irish Legal Information (BAILII)", Submitted in Artificial Intelligence and Law (2023).

- **Tehseen Zia**, Syed Ali Tariq, and Nauman Bashir, "TBformer: Transformers for Tuberculosis Detection and Classification", Under review at IEEE Transaction on Medical Imaging (2022).
- Syed Ali Tariq, **Tehseen Zia**, Mubeen Ghafoor, Towards Counterfactual and Contrastive Explainability and Transparency of DCNN Image Classifiers, Knowledge-Based Systems (2022). Available on: https://www.sciencedirect.com/science/article/abs/pii/S0950705122009947.
- **Tehseen Zia**, Nauman Bashir, Ahsan Ullah, Shakeeb Murtaza, SoFTNet: A Concept-Controlled Deep Learning Architecture for Interpretable Image Classification, Knowledge-Based Systems (2022). Available on: https://www.sciencedirect.com/science/article/pii/S095070512101145X
- **Tehseen Zia**, Shakeeb Murtaza, Nauman Bashir, David Windridge, Zeeshan Nisar, VANT-GAN: A Direct Visual Attribution Approach for Medical Imaging via Adversarial Learning, Pattern Recognition Letter (2022). Available on: https://www.sciencedirect.com/science/article/abs/pii/S0167865522000393
- Mohammad Usman, **Tehseen Zia**, and Ali Tariq. "Analyzing Transfer Learning of Vision Transformers for Interpreting Chest Radiography." Journal of Digital Imaging (2022): 1-18. Available on: https://link.springer.com/article/10.1007/s10278-022-00666-z
- Aitazaz, T., Tubaishat, A., Al-Obeidat, F., Shah, B., **Zia, T**., & Tariq, A. (2022). Transfer learning for histopathology images: an empirical study. Neural Computing and Applications, 1-12. Available on: https://link.springer.com/article/10.1007/s00521-022-07516-7
- **Tehseen Zia,** Rahana Faiz, Discriminator-based Adversarial Networks for Knowledge Graph Completion, Neural Computing and Applications (2022). Available on: https://link.springer.com/article/10.1007/s00521-022-07680-w.
- Muhammad Nawaz, Feras Al-Obeidat, Abdallah Tubaishat, **Tehseen Zia**, Fahad Maqbool, and Alvaro Rocha. "MDVA-GAN: Multi-Domain Visual Attribution Generative Adversarial Networks". Neural Computing and Applications (2022). Available on: https://link.springer.com/article/10.1007/s00521-022-06969-0
- **Tehseen Zia**, Ali Tariq, TBformer: A Swin-Transformer based model to Classify and Detect TB, Under Review, IEEE Transaction on Medical Imaging (2022).
- **Tehseen Zia**, Zeeshan Nisar, Shakeeb Murtaza, "Counterfactual Explanation and Instance-Generation using Cycle-Consistent Generative Adversarial Networks", Under review, Neurocomputing (2022).
- **Tehseen Zia**, David Windridge, "A Generative Adversarial Network for Single and Multi-Hop Distributional Knowledge Base Completion", Neurocomputing (2021). Available on: https://www.sciencedirect.com/science/article/abs/pii/S0925231221009577
- Naeem Abid, **Tehseen Zia**, David Windridge, "A Shape-Aware Multi-View Convolutional Recurrent Neural Network for Lung Cancer Nodule Detection", Neurocomputing (2021). Available on: https://www.sciencedirect.com/science/article/pii/S092523122100103X?casa_token=eZaCKd_fW24AAAAA:Pebz2_DTvuJRXBhKaJswx_GpBRLr-an53YurVE6ZfSfGkf5WspM2_xO_GWzoLn1sYiSLMIlz
- Ali, Gohar, Feras Al-Obeidat, Abdallah Tubaishat, **Tehseen Zia**, Muhammad Ilyas, and Alvaro Rocha. "Counterfactual explanation of Bayesian model uncertainty." Neural Computing and Applications (2021): 1-8. Available on: https://link.springer.com/article/10.1007/s00521-021-06528-z
- Muhammad Pervez Akhter, Zheng Jiangbin, Irfan Raza Naqvi, Mohammed Abdel Majeed, **Tehseen Zia**. "Abusive language detection from social media comments using conventional machine learning and deep learning approaches". Multimedia

Systems (2021). Available on: https://link.springer.com/article/10.1007/s00530-021-00784-8

- Mubeen Ghafoor, Syed Ali Tariq, Imtiaz A Taj, Noman Jafri, **Tehseen Zia**, "Robust palmprint identification using efficient enhancement and two-stage matching technique". IET Image Processing (2020). Available on: https://digital-library.theiet.org/content/journals/10.1049/iet-ipr.2018.5736

- **Tehseen Zia**, Assad Abbas, Usman Habib, Muhammad Sajid Khan. "Learning Deep Hierarchical and Temporal Recurrent Neural Networks with Residual Learning", International Journal of Machine Learning and Cybernetics 1-10 (2020). Available on: https://link.springer.com/content/pdf/10.1007/s13042-020-01063-0.pdf.

- **Tehseen Zia**, Saad Razzaq. "Residual Recurrent Highway Networks for Learning Deep Sequence Prediction Models." Journal of Grid Computing (2020): 1-8 Available on: https://link.springer.com/article/10.1007/s10723-018-9444-4

- **Tehseen Zia,** Shahan Arif, Shukeeb Murtaza, Ahsan Ullah, Text-to-Image Generation with Attention based Recurrent Neural Networks, arXiv:2001.06658, Available on: https://arxiv.org/abs/2001.06658

- Muhammad Junaid , Mubeen Ghafoor, Ali Hassan, Shehzad Khalid, Syed Ali Tariq, Ghufran Ahmad , **Tehseen Zia**, Multi-feature View-based Shallow Convolutional Neural Network for Road Segmentation, IEEE Access 8, 36612-36623  (2020), Available on: https://ieeexplore.ieee.org/abstract/document/8988193/

- Zain Ul Abideen, Mubeen Gahfoor, **Tehseen Zia**, Uncertainty Assisted Robust Tuberculosis Identification with Bayesian Convolutional Neural Networks, IEEE Access 8, 22812-22825 (2020), Available on: https://ieeexplore.ieee.org/abstract/document/8972440/

- Mubeen Ghafoor, Syed Ali Tariq, **Tehseen Zia**, Imtiaz A. Taj, Asad Abbas, Albert Zomaya. "Fingerprint Identification with Shallow Multifeature View Classifier". IEEE Transaction on Cybernetics (2019). Available on: https://ieeexplore.ieee.org/document/8941056

- **Tehseen Zia.** "Hierarchical Recurrent Highway Networks." Pattern Recognition Letters 119, 71-76. (2019). Available on: https://www.sciencedirect.com/science/article/pii/S0167865518302708

- **Tehseen Zia,** Mubeen Ghafoor, Syed Ali Tariq, Imtiaz A. Taj. "Robust Fingerprint Classification with Bayesian Convolutional Networks". IET Image Processing (2019). Available on: https://ieeexplore.ieee.org/document/8741332.

- Umara Zafar, Mubeen Ghafoor, **Tehseen Zia**, Ghufran Ahmed, Ahsan Latif, Kaleem Razzaq Malik, Abdullahi Mohamud Sharif. "Face recognition with Bayesian convolutional networks for robust surveillance systems". EURASIP Journal on Image and Video Processing 1 (2019). Available on: https://link.springer.com/article/10.1186/s13640-019-0406-y.

- **Tehseen Zia**, Usman Zahid, "Long short-term memory recurrent neural network architectures for Urdu acoustic modeling", International Journal of Speech Technology 22 (1), 21-30 (2019). Available on: https://link.springer.com/article/10.1007/s10772-018-09573-7.

- Ali Hassan et al. "High Efficiency Video Coding (HEVC)–Based Surgical Telementoring System Using Shallow Convolutional Neural Network". Journal of Digital Imaging (2019). Available on: https://link.springer.com/article/10.1007/s10278-019-00206-2

- Syed Ali Tariq, Mubeen Ghafoor, Imtiaz A. Taj, Noman M. Jafri, Saad Razzaq, **Tehseen Zia**, "Massively Parallel Palmprint Identification system using GPU." Cluster Computing (2019): 1-16. Available on: https://link.springer.com/article/10.1007/s10586-017-1121-z

- Mubeen Ghafoor, Syed Ali Tariq, Bakr Syed Ali, Jibran M Abu, Waqas Ahmad, **Tehseen Zia,** Perceptually Lossless Surgical Telementoring System Based on Non-Parametric Segmentation, Journal of Medical Imaging and Health Informatics (2019), Volume 9, Number 3. Available on: https://www.ingentaconnect.com/content/asp/jmihi/2019/00000009/00000003/art00009
- Qaiser Abbas, Qasim Hussain, **Tehseen Zia**, Atif Mansoor, "Reduced Solution Set Shortest Path Problem: Capton Algoritm With Special Reference To Dijkstra's Algorithm", Malaysian Journal of Computer Science 31 (3), 175-187 (2018 Available on: https://ejournal.um.edu.my/index.php/MJCS/article/view/12730
- M Ikram Ullah Lali, Raza Ul Mustafa, Kashif Saleem, M Saqib Nawaz, **Tehseen Zia**, Basit Shahzad, Finding healthcare issues with search engine queries and social network data, International Journal on Semantic Web and Information Systems (IJSWIS), Vol. 13(1), 2017. Available on: https://www.igi-global.com/article/finding-healthcare-issues-with-search-engine-queries-and-social-network-data/172422
- **Tehseen Zia**, Zulqarnain Arif, "Probabilistic data fusion model for heart beat detection from multimodal physiological data", Turkish Journal of Electrical Engineering & Computer Sciences 25 (1), 449-460 (2017). Available on: https://journals.tubitak.gov.tr/elektrik/abstract.htm?id=19886.
- Mustafa, Raza Ul, M. Saqib Nawaz, M. Ikram Ullah Lali, **Tehseen Zia**, and Waqar Mehmood. "Predicting the cricket match outcome using crowd opinions on social networks: A comparative study of machine learning methods." Malaysian Journal of Computer Science 30(1), 63-76 (2017). Available on: https://ejournal.um.edu.my/index.php/MJCS/article/view/7029
- Mahmood, Rashid, Khalid Mahmood Aamir, Marija Milojević Jevrić, Stojan Radenović, and **Tehseen Zia**. "On designing invertible pseudo covariance matrix for undersampled cases in classification." Journal of Advances in Mathematics and Computer Science, 1-9 (2016). Available on: https://www.journaljamcs.com/index.php/JAMCS/article/view/23654
- **Tehseen Zia**, Muhammad Pervez Akhter, and Qaiser Abbas. "Comparative study of feature selection approaches for Urdu text categorization." Malaysian Journal of Computer Science 28, no. 2 (2015): 93-109. Available on: http://ajba.um.edu.my/index.php/MJCS/article/view/6857
- **Tehseen Zia**, Qaiser Abbas, and Muhammad Pervez Akhtar. "Evaluation of Feature Selection Approaches for Urdu Text Categorization." International Journal of Intelligent Systems & Applications 7, no. 6 (2015). Available on: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1022.4477&rep=rep1&type=pdf

**Conference Publications**

- Sangeen Khan, **Tehseen Zia**, Automated Reasoning and Proof Generation in Natural Language via Knowledge Distillation, Submitted to EMNLP, 2023.
- Ali Tariq, Bismillah Khan, **Tehseen Zia**, Faithful Visual Counterfactual Explanation, Submitted to WACV, 2023.
- **Tehseen Zia**, Usman Zahid, David Windrige, Modeling Relation Paths with Generative Adversarial Networks for Representation Learning of knowledge Bases, Accepted at NeurIPS Worksop, 2019. Available on: https://kr2ml.github.io/2019/papers/KR2ML_2019_paper_31.pdf
- Adnan, Awais, Sajid Anwar, **Tehseen Zia**, Saad Razzaq, Fahad Maqbool, and Zia Ur Rehman. "Beyond Beall's Blacklist: Automatic Detection of Open Access Predatory

Research Journals." In 2018 IEEE 20th International Conference on High Performance Computing and Communications; IEEE 16th International Conference on Smart City; IEEE 4th International Conference on Data Science and Systems (HPCC/SmartCity/DSS), pp. 1692-1697. IEEE, 2018.

- **Tehseen Zia**,. S. Akram, M. S. Nawaz, B. Shahzad, A. M. Abdullatif, R. U. Mustafa, and M. I. Lali. "Identification of hatred speeches on Twitter." In Proceedings of 52nd The IRES International Conference, pp. 27-32. 2016.
- **Tehseen Zia**, Dietmar Bruckner, Adeel Zaidi, A hidden Markov model based procedure for identifying household electric loads, IECON 2011-37th Annual Conference of the IEEE Industrial Electronics Society, 2011.
- Adeel Abbas Zaidi, Friederich Kupzog, **Tehseen Zia**, Peter Palensky, Load recognition for automated demand response in microgrids, IECON 2010-36th Annual Conference on IEEE Industrial Electronics Society, 2010.
- Adeel Abbas Zaidi, **Tehseen Zia**, Friederich Kupzog, Automated demand side management in microgrids using load recognition, 2010 8th IEEE International Conference on Industrial Informatics, 2010.
- Friederich Kupzog, **Tehseen Zia**, Adeel Abbas Zaidi, Automatic electric load identification in self-configuring microgrids, AFRICON 2009.
- **Tehseen Zia**, Roland Lang, Harold Boley, Dietmar Bruckner, and Gerhard Zucker. An autonomous adaptive multiagent model for building automation, In Fieldbuses and Networks in Industrial and Embedded Systems, vol. 8, no. 1, pp. 250-254. 2009.
- Tobias Deutsch, **Tehseen Zia**, Roland Lang, and Heimo Zeilinger, A simulation platform for cognitive agents." In 2008 6th IEEE International Conference on Industrial Informatics, pp. 1086-1091. IEEE, 2008.
- Fahad Khan, Shahbaz, Fahad Maqbool, Saad Razzaq, Kashif Irfan, and **Tehseen Zia**, The role of medical expert systems in Pakistan, In Proceedings of world academy of science, engineering and technology, vol. 27. 2008.
- Farid, Ahmed, **Tehseen Zia**, Fahad Maqbool, Saad Razzaq, Fahad Shahbaz, and Kashif Irfan, Control Law for UNI-Axial Vehicle Using Lyapunov Analysis." In Proceedings of the World Congress on Engineering, vol. 2. 2008.

## Research Supervisions

### Ph.D. Students
- Ali Tariq, Counterfactual Interpretability of Deep Learning Models, Department of Computer Science, COMSATS University Islamabad. (Status: Writing Thesis)
- Mirza Ahsan Ullah, Controllable and Conceptually Explainable Deep Neural Networks, Department of Computer Science, COMSATS University Islamabad. (Status: Writing Thesis)
- Muhammad Kamran Qureshi, Towards Fast Light Field Image Compression, Department of Computer Science, COMSATS University of Islamabad. (Status: Writing Thesis)

### MS Students
- Asma Khalid Butt, Contrastive Concept-Phrase Pretraining for X-ray based Report Generation, 2023. (Status: Completed)
- Iftikhar Ahmad, Building a Language Model on Pakistan Law Data, 2023. (Status Completed)
- Waleed Ahmad, The Application of Pre-trained Transformer Models to UK Court of Appeal Legal Judgments, 2023 (Status Completed).
- Bismillah, Visual explanation of predictive counterfactuals (VECF), 2022. (Status: Completed)

- Sangeen Khan, Towards Generalized Deductive Reasoning over Natural Language using Logic Prompting, 2022. (Status: Completed)
- Syed Muzafar Ali, Improving Knowledge Graph Embedding Methods by Generative Negative Samples as Counterfactuals of Positive Samples, 2022. (Status: Completed)
- Zahid ur Rahman, Unifying Visual Concepts Extraction and Phrase Grounding using Contrastive Learning for Generating Grounded Medical, 2022. (Status: Completed)
- Abdul Wahab, Adversarial Learning for Visual Attribution of Medical Imaging, 2022. (Status: Completed)
- Ridda Sultana, Generating Multi-domain Counterfactuals By Latent Transformations, 2022. (Status: Completed)
- Ahsan Javid, Improving Deep Learning Based SCR Screening using SCR-to DICOM generation, 2022. (Status: Completed)
- Muhammad Adnan, A Novel Self-Supervised Learning Techniques Based on Patch Replacement Detection, 2022. (Status: Completed)
- Qaiser Pasha, Unsupervised Grounding Medical Reports into Scans, 2022. (Status: Completed).
- Jamal Abdul Ahad, Masked Autoregressive Language Modeling, 2022. (Status: Completed)
- Muhammad Majid, A Difference-Based Adversarial Approach for Visual Attribution of Multiple Diseases in Medical Images, 2022. (Status: Completed)
- Muhammad Mohsin, Learning to Preprocess Medical Images using Soft-Prompting, 2022. (Status: Completed)
- Tayyab Aitazaz, Transfer Learning For Histopathology Images: An Empirical Study, Department of Computer Science, COMSATS University Islamabad, 2022. (Status: Completed)
- Muhammad Nauman, CNET: A Concept-Controlled Deep Learning Architecture for Interpretable Image Classification, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Muhammad Gohar, Counterfactual Visual Explanation of Models' Uncertainty, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Shan Ali, Improving Self-Supervised Contrastive Learning by Adversarially Generating Hard Negative Samples, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Muhammad Nawaz, MDVA-GAN: Multi-Domain Visual Attribution Generative Adversarial Networks, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Muhammad Usman, Evaluation of Transfer Learning of Transformers for Medical Image Recognition, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Rahana Faiz, KG-ELECTRA: ELECTRA for Knowledge Graph Completion, Department of Computer Science, COMSATS University Islamabad, 2021. (Status: Completed)
- Ali Aon, Residual Coding For LF Reconstruction Schemes Using Deep Learning Methods, Department of Computer Science, COMSATS University Islamabad, 2020. (Status: Completed)
- Amna Abbas, An Efficient Telementoring System Approach Using Deep Learning Based Rate Control, Department of Computer Science, COMSATS University Islamabad, 2020. (Status: Completed)

- Asad Zaheer, Robust Seizure Detection From EEG Signal Using Deep Learning, Department of Computer Science, COMSATS University Islamabad, 2020. (Status: Completed)
- Muhammad Ismail, Semi-Supervised Learning with Adversarial Nets for Lung Pathology Classification in Chest X-Ray, Department of Computer Science, COMSATS University Islamabad, 2020. (Status: Completed)
- Shakeeb Murtaza, Counterfactual Explanation and Instance Generation using Generative Adversarial Networks, Department of Computer Science, COMSATS University Islamabad, 2019. (Status: Completed)
- Muhammad Saboor, Multi-hop Reasoning and Logical Entailment using Generative Adversarial Networks, Department of Computer Science, COMSATS University Islamabad , 2019. (Status: Completed)
- Saqib Nazir, Denoising Low-dose CT Scans using Super-resolution Generative Adversarial Networks, Department of Computer Science, COMSATS University Islamabad, 2019. (Status: Completed)
- Muhammad Usman Atif, Siamese Long Term Convolution Network for Video Placed Person Re-Identification, Department of Computer Science, COMSATS University Islamabad, 2019. (Status: Completed)
- Usman Zahid, Generative Adversarial Relational Networks for Knowledge Base Reasoning, Department of Computer Science, COMSATS University Islamabad , 2019. (Status: Completed)
- Mian Naeem Abid, Lung Cancer Nodule Detection using Multi-view Recurrent Neural Networks, Department of Computer Science, COMSATS University Islamabad , 2018. (Status: Completed)
- Zeeshan Nisar, Weakly Supervised Pixel-level Tuberculosis Detection from Chest X-ray with Deep Learning, Department of Computer Science, COMSATS University Islamabad , 2018. (Status: Completed)
- Shahan Arif, Align Pixel Recurrent Network for Caption Based Image Modeling, Department of Computer Science, COMSATS University Islamabad, 2018. (Status: Completed)
- Rashid Mahmood, Design of Invertible Pseudo Covariance Matrix for Overfitting Cases in Data Classification, Department of Computer Science, University of Sargodha, 2015. (Status: Completed)
- Zulquarnian Haider, Modeling coupling between ECG and arterial blood pressure waveforms for QRS detection, Department of Computer Science, University of Sargodha, 2015. (Status: Completed)
- Muqadas Gull, Source Code Authorship Attribution using Stylist Features and Code Smells, Department of Computer Science, University of Sargodha, 2015.
- Zia Ur Rehman, Beyond Beall's Blacklist: Detection of Open Access Predatory Research Journals using Machine Learning Techniques, Department of Computer Science, University of Sargodha, 2015.
- Sadaf Rani, Lingoes Resolution for Social Networks, Department of Computer Science, University of Sargodha, 2015.
- Shahbaz Akram, Identifying Hatred Speeches in Social Networks, Department of Computer Science, University of Sargodha, 2014.
- Muhammad Pervez, A Comparative Analysis of Feature Selection and Feature Extraction Methods in Urdu Text Document Categorization, Department of Computer Science, University of Sargodha, 2014.
- Talib Mustafa, Evaluation of Topic Models as Feature Selection Methods in Text Categorization, Department of Computer Science, University of Sargodha,2014.
- Muhammad Fayyaz Awan, Exploiting Cross-lingual Resources for Name Entity Recognition in Urdu Documents, Department of Computer Science, University of Sargodha, 2013.

## Trainings Workshops
- Conducted five day training on "Predictive Analytics", COMSATS University Islamabad. [3rd Mar, 2022 – 7th Mar, 2022]
- Conducted five day training workshop on "Experience AI: Machine Learning and Deep Learning", COMSATS University Islamabad.[23rd Aug, 2021 – 27th Aug, 2021]
- Conducted five-day training workshop on "Mastering Artificial Intelligence in 5 Days! Hands-on Training for Building Real-world AI Applications", COMSATS University Islamabad. [27rd Feb, 2023 – 3th Aug, 2023]

## Invited Talks
- Explainable AI for Medical Images, Artificial Intelligence Technology Center (AITeC), National Center for Physics [25th July, 2023]
- Artificial Intelligence: Conceptual Understanding, Potential and Applications, Talk is organized by National Institute of Management, Islamabad. Participants are from various civil services and occupational groups such as Pakistan Administrative Service, Police Service of Pakistan, Pakistan Audit & Accounts Service, Foreign Service of Pakistan, Commerce & Trade Group, Inland Revenue Service. [22nd November, 2022]

## University/Community Services
- Member, Department Advisory Committee (DAC, Graduate), Department of Computer Science, CUI, Islamabad. [Aug, 2022 – present]
- Member, Final Year Project Committee (FYP, Undergrad), Department of Computer Science, CUI, Islamabad. [Sept, 2021 – Mar, 22 ]
- Program Manager, Bachelor of Science in Computer Science (BSCS), COMSATS University Islamabad. [Jul, 2016 – Jul, 2018]
- Member, Department Advisory Committee (DAC, Graduate), Department of Computer Science, CUI, Islamabad. [2019 – 2020]
- Member, Innovation and Commercialization Committee, Department of Computer Science, CUI, Islamabad. [Aug, 2018 – Feb, 2019]
- Member, Final Year Project Committee (FYP, Undergrad), Department of Computer Science, CUI, Islamabad. [Aug, 2016 – Aug 2017]

## Conference Program Committee Membership
- 18th International Conference on Frontiers of Information Technology (FIT), Islamabad. [13th Dec – 14th Dec, 2021]
- 17th International Conference on Frontiers of Information Technology (FIT), Islamabad. [13th Dec – 14th Dec, 2019]