# M. AHSAN LATIF Ph.D. (Computer Science)

Associate Prof. (Tenured),
Department of Computer Science, University of Agriculture, Faisalabad, Pakistan.
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**Permanent Address:**
Main Street, Amjad Green Park, Pansera Road, Gojra City, District T-T-Singh, Punjab, Pakistan.

**Education:**

| Degree | Subject | Year Passed | University / Board |
|---|---|---|---|
| **PhD** | Computer Science | 2011 | Alpen-Adria University Klagenfurt, Austria |
| **MSc.** | Computer Science | 2001 | University of Agriculture, Faisalabad. |
| **BSc.** | Double Math, Physics | 1998 | Punjab University, Lahore |
| **FSc.** | Pre-Engineering | 1994 | BISE-Faisalabad |
| **Matric** | Science | 1992 | BISE-Faisalabad |

**PhD Thesis Title:**
Adaptive Machine Vision involving Nonlinear Oscillatory Theory for Advanced Driver Assistance Systems.
**PhD Supervisor:**
Univ.-Prof. Dr.-Ing. Kyandoghere Kyamakya
**PhD Research Group:**
Transportation Informatics Group, Institute for Smart System Technology, Aplen-Adria University Klagenfurt, Austria.
URL = https://www.aau.at/en/smart-systems-technologies/transportation-informatics/

**Service Timeline:**

| Designation | Employer / Funding Agency | Duration |
|---|---|---|
| **Associate Prof. (TTS)** | University of Agriculture, Faisalabad | Oct 2021 to Date |
| **Assistant Prof. (TTS)** | University of Agriculture, Faisalabad | July 2012 to Oct 2021 |
| **Assistant Prof. (IPFP)** | University of Agriculture, Faisalabad | June 2011 - June 2012 |
| **HEC Scholar** | HEC - Pakistan | Feb 2008 – June 2011 |
| **Programmer (BS-17)** | Institute of Optronics, Ministry of Defense Production, Rawalpindi, Pakistan | June 2003 – Jan 2008 |
| **Programmer** | Chenab Ltd. Faisalabad | Jan 2003 – May 2003 |
| **Lecturer** | Govt. Post Graduate Degree College Gojra (Girls) | May 2001 - Sep 2002 |
| **Lecturer** | Govt. Post Graduate Degree College Gojra (Boys) | Dec 2000 – Apr 2001 |

**Areas of Interest:**
Computer Vision, Digital Image Processing, Remote Sensing, Artificial Intelligence, Algorithm Analysis.

**Countries Visited:**
China, Austria, Germany, Italy, Spain, Switzerland.

**Publications:**

1) Raza, N., Habib, M. A., Ahmad, M., Abbas, Q., Aldajani, M. B., & **Latif, M. A. (2024)**. Efficient and Cost-Effective Vehicle Detection in Foggy Weather for Edge/Fog-Enabled Traffic Surveillance and Collision Avoidance Systems. *Computers, Materials & Continua*, *81*(1). DOI: 10.32604/cmc.2024.055049. **IF 2.1.**
2) Riaz, S., Ali, S., Wang, G., **Latif, M. A.**, & Iqbal, M. Z. **(2023)**. Membership Inference Attack on Differentially Private Block Coordinate Descent. PeerJ Computer Science, 9, e1616. DOI: https://doi.org/10.7717/peerj-cs.1616. **IF 3.06.**
3) Ali, A., Zia, M. A., Latif, M. A., Zulfqar, S., & Asim, M. **(2023)**. A Comparative Study of Deep Learning Techniques for Boll Rot Disease Detection in Cotton Crops. Agricultural Sciences Journal, 5(1), 58-71. DOI: https://doi.org/10.56520/asj.v5i1.253.
4) **Latif, M. A**. **(2022)**. Improving stability of aerial videos acquired through vision sensors onboard UAVs for applications in precision agriculture. *Signal, Image and Video Processing*. DOI: https://doi.org/10.1007/s11760-021-02077-z. **IF 2.157**.
5) Z. Xu, **M. A. Latif,** S. S. Madni, A. Rafiq, I. Alam and M. A. Habib. **(2021)**. "Detecting White Cotton Bolls Using High-Resolution Aerial Imagery Acquired Through Unmanned Aerial System," in IEEE Access, vol. 9, pp. 169068-169081, 2021, DOI: 10.1109/ACCESS.2021.3138847. **IF 3.745.**
6) Saeed, S., **Latif, M. A.**, & Rajput, M. A. **(2021)**. Fuzzy-Based Multi-Crop Classification Using High Resolution UAV Imagery. Quaid-E-Awam University Research Journal of Engineering, Science & Technology, Nawabshah, 19(1), 1-8. DOI: https://doi.org/10.52584/QRJ.1901.01
7) P. W. Khan, Y. -c. Byun and **M. A. Latif**. **(2020)**, Clifford Geometric Algebra-Based Approach for 3D Modeling of Agricultural Images Acquired by UAVs, in IEEE Access, DOI: 10.1109/ACCESS.2020.3045443. **IF 3.745.**
8) Ashraf, R., Habib, M. A., Akram, M., **Latif, M. A.**, Malik, M. S. A., Awais, M., & Abbas, Z. (2020). Deep Convolution Neural Network for Big Data Medical Image Classification. IEEE Access, 8, 105659-105670. DOI: 10.1109/ACCESS.2020.2998808. **IF 3.745**.
9) Li, J., Mushtaq, M., Mariam, A., Khalid, S., **Latif, M. A.**, Iqbal, M. M., & Iqbal, M. J. (2020). Hazy Glimpse Crook Virtual Assistant for Blind and Visual Impaired Community Healthcare. *Journal of Medical Imaging and Health Informatics*, *10*(10), 2501-2511. **DOI:** https://doi.org/10.1166/jmihi.2020.3182. **IF 0.46.**
10) Habib, M. A., Faisal, M. N., Sarwar, S., **Latif, M. A.**, Aadil, F., Ahmad, M., Ashraf, R., Maqsood, M. (2019), Privacy based Medical Data Protection against Internal Security Threats in Heterogeneous Internet of Medical Things, International Journal of Distributed Sensor Networks. Vol. 15(9), DOI: 10.1177/1550147719875653. **IF. 1.151.**
11) F. Ullah, Naeem, H., Jabbar, S., Khalid, S., **Latif, M. A.,** Turjman, F. A., Mostarda, L. (2019). Cyber Security Threats Detection in Internet of Things Using Deep Learning Approach, IEEE Access, vol. 7, pp. 124379-124389, 2019. DOI: 10.1109/ACCESS.2019.2937347. **IF 3.745.**
12) Hussain, S., Cheema, M. J. M., Arshad, M., Ahmad, A., **Latif, M. A.**, Ashraf, S., & Ahmad, S. (2019). Spray Uniformity Testing of Unmanned Aerial Spraying System for Precise Agro-Chemical Applications. *Pakistan Journal of Agriculture Science*. DOI: 10.21162/PAKJAS/19.8594. **IF 0.677**.
13) P. W. Khan, G. Xu**, M. A. Latif**, K. Abbas and A. Yasin. (2019). UAV's Agricultural Image Segmentation Predicated by Clifford Geometric Algebra, *in IEEE Access*, vol. 7, pp. 38442-38450, DOI: 10.1109/ACCESS.2019.2906033. **IF 3.745**.
14) Ahmad, A., Ahmad, M., Habib, M.A., Sarwar, S., Chaudhry, J., **Latif, M. A.**, Dar, S. H., Shahid, M. (2019). Parallel query execution over encrypted data in database-as-a-service (DaaS). *The Journal of Supercomputing*. DOI: https://doi.org/10.1007/s11227-019-02831-8. Online ISSN: 1573-0484. **IF 2.469**.
15) Zafar, U., Ghafoor, M., Zia, T., Ahmed, G., **Latif, A.**, Malik, K. R., & Sharif, A. M. (2019). Face recognition with Bayesian convolutional networks for robust surveillance systems. *EURASIP Journal on Image and Video Processing*, 2019(1), 10. DOI: https://doi.org/10.1186/s13640-019-0406-y. **IF 1.818**.
16) **M. A. Latif** (2018). An Agricultural Perspective on Flying Sensors: State of the Art, Challenges, and Future Directions, in *IEEE Geoscience and Remote Sensing Magazine*, vol. 6, no. 4, pp. 10-22, Dec. 2018. DOI: 10.1109/MGRS.2018.2865815. (ISSN: 2168-6831). **IF 13**.

17) Iqbal, M. M., Ali, M., Alfawair, M., **Latif, M. A.**, Minhas, A. A., Al Mazyad, A., & Naseer, K. (2018). Augmenting High-Performance Mobile Cloud Computations for Big Data in AMBER. *Wireless Communications and Mobile Computing*. DOI: https://doi.org/10.1155/2018/4796535. (Online ISSN: 1530-8677). **IF 1.819**.
18) **Latif, M. A**., Cheema, M. J. M., Saleem, M. F., & Maqsood, M. (2018). Mapping wheat response to variations in N, P, Zn, and irrigation using an unmanned aerial vehicle. *International Journal of Remote Sensing*, 1-17. (Online ISSN: 1366-5901). DOI: https://doi.org/10.1080/01431161.2018.1515509**. IF 2.976.**
19) **Latif, M. A.**, Chedjou, J. C., & Kyamakya, K. (2011). Robust contrast enhancement by a coupled oscillatory paradigm: An application for visual sensors in transportation. *COMPEL-The international journal for computation and mathematics in electrical and electronic engineering*, 30(4), 1416-1432. DOI: https://doi.org/10.1108/03321641111133299. (ISSN: 0332-1649). **IF 0.528**.
20) **Latif, M. A.** (2019). Multi-Crop Recognition using UAV based High Resolution NDVI Time-Series. *Drone Systems and Applications (Formerly Journal of Unmanned Vehicle Systems)*. 7(3), pp. 207-218. (DOI: https://doi.org/10.1139/juvs-2018-0036. ISSN 2564-4939. **IF 0.446**.
21) Khalid, A., **Latif, M. A.**, & Adnan, M. **(2017)**. An Approach to Estimate the Duration of Software Project Through Machine Learning Techniques. Gomal University Journal of Research [GUJR], 33(1). ISSN: 1019-8180.
22) Sahar, O., **Latif, M. A.**, & Imran, M. **(2017)**. Machine Learning Techniques for Evaluation of Efficiency of the Software Reliability Growth Models. Gomal University Journal of Research [GUJR], 33(1). ISSN: 1019-8180.
23) Aun, M. A., Ghani, A., Azeem, M., Adnan, M., & **Latif, M. A.** (2017). Recognizing Rainfall Pattern for Pakistan using Computational Intelligence. *International Journal of Advanced Computer Science and Applications*, 8(11), 487-491. DOI: http://dx.doi.org/10.14569/IJACSA.2017.081159. (Online ISSN: 2156-5570).
24) Adnan, M., **Latif, M. A.**, & Nazir, M. (2017). Estimating Evapotranspiration using Machine Learning Techniques. *International Journal of Advanced Computer Science and Applications*, 8(9), 108-113. DOI: http://dx.doi.org/10.14569/IJACSA.2017.080915. (Online ISSN: 2156-5570).
25) Adnan, M., Abaid-ur-Rehman, **Latif, M. A.**, Ahmad, N., Nazir, M., and Naheed A. (2018). Mapping Wheat Crop Phenology and the Yield using Machine Learning (ML). *International Journal of Advanced Computer Science and Applications (IJACSA)*, 9(8), 301-306. DOI: http://dx.doi.org/10.14569/IJACSA.2018.090838. (Online ISSN: 2156-5570).
26) Adnan, M., Akhter, N., Abid, M., **Latif, M. A.**, Abaid-ur-Rehman, & Kashif, M. (2018). Studying the Impact of Water Supply on Wheat Yield by using Principle Lasso Radial Machine Learning Model. *International Journal of Advanced Computer Science and Applications*, 9(2), 229-235. DOI: http://dx.doi.org/10.14569/IJACSA.2018.090232. (Online ISSN: 2156-5570).
27) **M. Latif**, M. Adnan, Analysis of Wireless Traffic Data through Machine Learning, *Advances in Science, Technology and Engineering Systems Journal*, vol. 2, no. 3, pp. 865-871 (2017). DOI: 10.25046/aj0203107. (ISSN: 2415-6698).
28) Cheema, M. J. M., Ameer, S., Farooque, A., **Latif, M. A.** (2018), Prescription maps for precision application of fertilizer in wheat cropping system. In CSBE/SCGAB 2018 Annual Conference, School of Engineering, University of Guelph, Guelph, Ontario, July 22-25 2018. Canadian Society for Bioengineering.
29) **Latif, M. A.**, & Adnan, M. (2016, December). ANN-based data mining for better resource management in the next generation wireless networks. In *2016 International Conference on Frontiers of Information Technology (FIT)* (pp. 35-39). IEEE.
30) Kyamakya, K., Chedjou, J. C., **Latif, M. A.**, & Khan, U. A. (2010, February). A novel image processing approach combining a'coupled nonlinear oscillators'-based paradigm with cellular neural networks for dynamic robust contrast enhancement. In Cellular Nanoscale Networks and Their Applications (CNNA), 2010 12th International Workshop on (pp. 1-7). IEEE.
31) Chedjou, J. C., Kyamakya, K., **Latif, M. A.**, Khan, U. A., & Moussa, I. (2009, July). Solving stiff ordinary differential equations and partial differential equations using analog computing based on cellular neural networks. In Nonlinear Dynamics and Synchronization, 2009. INDS'09. 2nd International Workshop on (pp. 213-220). IEEE.
32) **Latif, M. A.**, Chedjou, J. C., & Kyamakya, K. (2009, June). The paradigm of Non-linear oscillators in image processing. In Theoretical Engineering (ISTET), 2009 XV International Symposium on (pp. 1-5). VDE.

33) **Latif, M. A.**, Application of Modeling and Information Communication Technology (ICT) in Agriculture. AgMIP-Pakistan Kickoff Workshop & International Seminar on Climate Change June 4 - 6, 2013, UAF.

**Book / Chapter(s):**

1) **M. Ahsan Latif (2017)**. Introduction. Digital Image Processing, pp. 1-24. University of Agriculture, Faisalabad. (ISBN 978-969-7705-02-3). Available at http://onlinebooks.uaf.edu.pk/.
2) **M. Ahsan Latif (2017)**. Image Formation. Digital Image Processing, pp. 25-38. University of Agriculture, Faisalabad. (ISBN 978-969-7705-02-3). Available at http://onlinebooks.uaf.edu.pk/.
3) **M. Ahsan Latif (2017).** Basic Operations. Digital Image Processing, pp. 39-55. University of Agriculture, Faisalabad. (ISBN 978-969-7705-02-3). Available at http://onlinebooks.uaf.edu.pk/.
4) **M. Ahsan Latif & Steven L. (2017).** Digital Image Processing in Frequency Domain. Digital Image Processing, pp. 56-77. University of Agriculture, Faisalabad. (ISBN 978-969-7705-02-3). Available at http://onlinebooks.uaf.edu.pk/.
5) **M. Ahsan Latif (2017).** Feature Extraction. Digital Image Processing, pp. 94-113. University of Agriculture, Faisalabad. (ISBN 978-969-7705-02-3). Available at http://onlinebooks.uaf.edu.pk/.
6) **M. Ahsan Latif** & M. J. M. Cheema, "Unmanned Aerial Systems (UAS) in Precision Agriculture", 101-Innovations Catalogue. 2016: Technologies for Commercialization, ISBN: 978-969-7705-16-0. **2016**.
7) M. J. M. Cheema, H. S. Mahmood, **M. Ahsan Latif**, A. K. Nasir, Precision Agriculture and ICT: Future Farming, Sustainable Agriculture in Pakistan, CRC Press. ISSBN 978-0-8153-6653-9. **2018**.

| Research Projects | | | | | | |
|---|---|---|---|---|---|---|
| **Sr. No.** | **Role** | **Project Title** | **Funding Agency** | **Starting Year** | **Year Completed** | **Total Cost** (Million PKR) |
| **1** | CO-PI | National Foreign Experts Program Cooperative Development for the Overseas Applications of Intelligent Crop Monitoring with Remote Sensing (NFE-ICM) | Nanjing Agriculture University, Nanjing, China. | Jan, 2023 | Dec, 2024 | 10 M |
| **2** | (CO-PI) | Sustainable Agricultural Production System In Urban Areas By Using CNC Kitchen Gardening Robot | NCRA, NUST, Rawalpindi | 2021 | 2022 | 13.02 M |
| **3** | (CO-PI) | Designing and Implementing Irrigation Management Information System using Cellular Communication Network in the selected areas of Punjab | PARB | 2018 | 2020 | 1.7 M |
| **4** | (CO-PI) | Formulating Sustainable Irrigation Management Information System using Real Time Irrigation Water Demand and Supply for Rural Areas Development. | IGNITE | 2017 | 2020 | 18.7 M |
| **5** | (PI) | Developing a Flying Sensor to Manage the Crops & Resources for Better Yield by Observing the Crop-Phenology Through RGB Sensors (A Low-Cost Solution for Precision Agriculture) | NRPU (HEC) | 2018 | 2020 | 1.6 M |
| **6** | (PI) | Sensor Based Unmanned Aerial Agro-Chemical Spraying (UAAS) System. | HEC (TDF) | 2017 | 2019 | 12.8 M |
| **7** | (PI) | Site-Specific Wheat-Crop Management for High Yield Using UAVs & Spectral-Sensors | EFS-UAF | 2016 | 2018 | 2 M |
| **8** | (Team Member) | Agricultural Information Systems - Building Provincial Capacity in Pakistan for Crop Estimation, Forecasting and Reporting based on the integral use of Remotely Sensed Data | FAO-UN, SUPARCO, UMD-USA, UAF. | 2013 | 2014 | -- |

**Courses Served For BS / MSc / MS / PhD**

Soft Computing & Optimization, Digital Image Processing, Computer Vision, Modeling and Simulation, Artificial Intelligence, Advanced Operating Systems, Advanced Algorithm Analysis, Computer Programming & Applications in Engineering, Management Information System, Design of Intelligent Systems, Introduction to Programming, Advanced Neural Networks, Advanced Theory of Computation, Decision Support Systems, Expert Systems and Artificial Intelligence, Computer Science And Information Technology.

**Keynote Speaker / Trainings Provided as Resource Person:**

- Advancement in Artificial Intelligence: Transforming Precision Agriculture & Remote Sensing. Nanjing Agri. University, China, June 03, 2024.
- Regular Resource Person for Agri. Officers on UAV and Satellite Image Processing in Agriculture [Since 2013].
- High Throughput Phenotyping and Genotyping Tools for Young-Generation Wheat Scientists. Wheat Research Institute, Faisalabad (AARI), July 17-18, 2023.
- Digital Image Processing in Agriculture. AARI, Faisalabad, January 2019.
- Enhancing productivity in 10 low producing tehsils through deployment of fresh Agri. Scientists at farm level. 7-11-2019 To 20-11-2019, UAF.
- Invention to Innovation Summit 2017. University of Punjab, Lahore.
- Potential Use and Benefits of UAVs in Agriculture. Presentation to the working group (State Bank of Pakistan) March 30, 2016.
- Role of Unmanned Aerial systems (UAS) in Agriculture - Where Do We Stand? National Workshop held on Oct 25-26, 2016. UAF.
- Hands-on training on Frequency Domain Image Processing and its Applications in Agriculture, Oct 25-26, 2016, DLC-2 University of Agriculture, Faisalabad.
- Unmanned Air Vehicles in Agriculture (Role of ICT in Enhancing Agriculture Value Chains in Pakistan, July 8, 2015-UAF)
- UAVs in Agriculture. DICE (Distinguished Innovation Collaboration Entrepreneurship), University of Agriculture Faisalabad. Nov 23-24, 2015.
- UAVs in Agriculture and Potential role of the Govt. Nov 27, 2015, UAF.
- Hands-on training on Digital Image Processing, DLC-2, University of Agriculture, Faisalabad, Aug 26-27, 2015.
- Indigenous on-campus training under modern university governance program at University of Agriculture Faisalabad, November 17-21, 2014.
- Indigenous on-campus training under modern university governance program at University of Agriculture Faisalabad, December 15-19, 2014.
- Application of Modeling and Information Communication Technology (ICT) in Agriculture. (AgMIP-Pakistan Kickoff Workshop & International Seminar on Climate Change (June 4 - 6, 2013)-UAF).

## Certifications:

1) Overview of SeaDAS 8.4.1 for the Processing, Analysis and Visualization of Optical Remote Sensing Data for Water Quality Monitoring. NASA's Applied Remote Sensing Training (ARSET) Program. February 13, 2024.
2) Connecting Citizen Science with Remote Sensing. NASA's Applied Remote Sensing Training (ARSET) Program. January 24, 26 & 31, 2023.
3) Crop Mapping using Synthetic Aperture Radar (SAR) and Optical Remote Sensing. NASA's Applied Remote Sensing Training (ARSET) Program. April 4, 6 and 11, 2023.
4) Fundamental of Machine Learning for Earth Science. April 20, 27 and 4, 2023.
5) Crop Information Portal Administration / Crop Information Portal use / Geospatial Data Management: Geo-network. SUPARCO, Islamabad. 2014.
6) Mapping Crops & their Biophysical Characteristics with Polarimetric Synthetic Aperture Radar and Optical Remote Sensing. NASA's Applied Remote Sensing Training (ARSET) Program. April 12, 19, 26 & May 3, 2022.

7) Using the UN Biodiversity Lab to Monitor the Pulse of the Planet. NASA's Applied Remote Sensing Training (ARSET) Program. April 14, 21, 27, 28 & May 4, 2022.
8) Accessing and Analyzing Air Quality Data from Geostationary Satellites. NASA's Applied Remote Sensing Training (ARSET) Program. October 11, 18 & 25, 2022. August 2, 4, 9 & 11, 2022.
9) Satellite Remote Sensing for Measuring Urban Heat Islands and Constructing Heat Vulnerability Indices. NASA's Applied Remote Sensing Training (ARSET) Program.
10) Disaster Assessment using Synthetic Aperture Radar. NASA's Applied Remote Sensing Training (ARSET) Program. October 19, 20 & 27, 2022.
11) Operative Training on eBee System at SenseFly, Lausanne-Switzerland. April 20, 2017.
12) Operative Training on DJI Phantom-IV quadcopter system at SATUMA, Islamabad, Pakistan. August 06, 2016.
13) New Approaches in Statistical Apps, May 10, 2016. UAF.
14) Grant Writing Workshop, Competitive Grants Program, 2015 (UAF-Pakistan).
15) Artificial Intelligence and Robotics in Precision Agriculture and Forestry (Air-AGFO). 29th October, 2015. LUMS, Lahore, Pakistan.
16) GLAM, MAGIS and NDVI, Relationship with Crop Yield. UAF. 2014.

**Honors:**

- Earned HEC Overseas PhD Scholarship in 2007.
- HEC approved PhD supervisor (Since 2012).
- Won research funding from the Endowment Fund Secretariat (UAF) under Technology Transfer category, 2014.
- Received certificate of appreciation for winning research project under NRPU from HEC-Pak, 2017
- Authored a complete book on Digital Image Processing. http://onlinebooks.uaf.edu.pk/
- Research project reviewer for Ignite – National Tech. Fund, Islamabad (Formerly ICT – R & D), Pakistan.
- Reviewer for the following International Journals:
  a. Earth Science Informatics.
  b. Scientific Reports Journal.
  c. Remote Sensing in Earth Systems.
  d. Journal of Real-Time Image Processing.
  e. Artificial Intelligence Review.
  f. International Journal of Image and Graphics.
  g. International Journal of Micro Air Vehicles.
  h. Advances in Science, Technology and Engineering Systems Journal.
  i. Transactions on Intelligent Systems and Technology.
  j. IEEE Wireless Communications Magazine.
  k. IEEE Transactions on Industrial Informatics
  l. Pakistan Journal of Agriculture Sciences.
- PC member (FIT-2013 11th International Conference on Frontiers of Information Technology).
- PC member (MCCT'14 – 1st International Conference on Modern Communication & Computing Technologies, 2014)
- Reviewer for PhD research proposals under Punjab Govt. scholarship program.
- Member NCRC (National Curriculum Revision Committee), HEC.
- External evaluator to G. C. Uni Fsd, NTU Fsd and Ripha University Fsd.
- Member BoS for G. C. Uni Fsd, NTU Fsd and Ripha University Fsd.
- Served in USPCAS-AFS (U.S.-Pakistan Center for Advanced Studies in Agriculture and Food Security) under precision agriculture chair at UAF.
- Project evaluator for DICE (Distinguished Innovation Collaboration Entrepreneurship), UAF.

**Recent Workshops / Seminars Arranged:**

- Quantum Technology, October 20, 2023, UAF.
- Transcriptome Data Analysis: Unraveling the Secrets of Gene Expression, October 13, 2023, UAF.
- IT Skill-Set Required for Software Houses: Awareness and Interaction Session. January 06, 2023, UAF.

**Administrative Experience:**

- Chairman, Dept. of Computer Science, Faculty of Sciences, University of Agriculture, Faisalabad. [Since July 07, 2022 to Date]
- In-Charge, Dept. of Computer Science, Faculty of Sciences, University of Agriculture, Faisalabad. [December 2018 to October 2019]
- UAF Focal Person for Copernicus Academy (European Space Agency)
- UAF Focal Person to NCEAC (HEC) for Accreditation since 2018.
- Member, Board of Faculty of Science, University of Agriculture, Faisalabad.
- Member, Academic Council, University of Agriculture, Faisalabad.

**PhD Supervision**

| Sr. No. | Name | Title | Role / Status |
|---|---|---|---|
| 1 | Anosh Fatima<br>2021-ag-2361 | Characterizing Polarimetric, Interferometric and Spectral Features of High-Resolution Imagery for Robust Crop Classification | Supervisor /<br>In Progress |
| 2 | Shazia Riaz<br>2018-ag-4549 | Limiting Privacy Breaches in Deep Learning Models Using Differential Privacy | Member /<br>Completed |
| 3 | Usman Rafi<br>2009-ag-1204 | Multiple Ocular Diseases Detection and Identification from Retina Images using Artificial Intelligence | Member /<br>In Progress |
| 4 | Haris Pervaiz<br>2016-ag-7803 | Yield Estimation Framework for Major Crops in Pakistan using Remote Sensing and Machine Learning | Member /<br>In Progress |
| 5 | Fatima Zahra<br>2024-ag-1401 | TBD | Supervisor / In Progress |

**MS Supervision (Completed)**

| Sr. No. | Names | Thesis Titles |
|---|---|---|
| 1 | Waseem Baig<br>2010-ag-1714 | Enhancement Of Software Quality Through Aspect Oriented Software Engineering Model |
| 2 | Nadia Aslam<br>2010-ag-573 | Developing a Cost-Effective Requirement Engineering Model For Market Driven Software Development |
| 3 | Aasma Khalid<br>2006-ag-89 | Reusability Of Software Design by Using Artificial Intelligence |
| 4 | M. Imran Zulfiqar<br>2010-ag-558 | Efficient Variant of Transmission Protocol with MPLS on the Basis Of Certain Important Resources |
| 5 | Shabbir Abbasi<br>2011-ag-774 | An Empirical Evaluation of Usability of Digital Libraries in Pakistan |
| 6 | Sunil Shehzad<br>2011-ag-832 | Simulation Based Performance Analysis Of AODV, DSDV And DSR Protocol in Mobile Ad-Hoc Networks |
| 7 | Imran Butt<br>2012-ag-1528 | Self-Organization in Next Generation Wireless Networks for Robust Performance Using ANN |
| 8 | Faisal Saleem<br>2012-ag-624 | Prediction And Analysis of Network Traffic Using Grey System Theory and Artificial Neural Network |
| 9 | Mehmood Hassan<br>2012-ag-800 | An Intelligent Software Estimation Model Based on ANN |
| 10 | Tahira Kamal<br>2007-ag-589 | An Artificial Intelligence Based Approach to Predict Software Reliability in Maintenance Phase |
| 11 | Ifza Muzaffar<br>2010-ag-1283 | Classification Of Myosin-Protein and Actin-Protein Using Machine Learning Techniques |
| 12 | Muhammad Adnan<br>2013-ag-245 | Modeling Evapotranspiration Using Machine Learning Techniques for Irrigation Scheduling |

| | | |
|---|---|---|
| 13 | Abaid-ur-Rehman<br>2013-ag-1296 | Modeling The Relationship Between the Key Attribute and the Wheat Yield Traits Using Machine Learning |
| 14 | Naseer Ahmad<br>2013-ag-1295 | Pattern Recognition in The Meteorological Data of Faisalabad |
| 15 | Muhammad Abid<br>2013-ag-1050 | Analyzing The Impact of Relative Water Content on Different Wheat Traits and Yield Using ML |
| 16 | Amna Tajamal<br>2010-ag-850 | Classification, Sequence Alignment and Analysis of 3D Structure of Myosin in Human Being and Bovines Using Machine Learning |
| 17 | Aneeqa Iftikhar<br>2010-ag-849 | Classification, Sequence Alignment and Analysis of 3D Structure of Collagen and Fibronectin in Human-Being Using Machine Learning |
| 18 | Ali Aun<br>2013-ag-6421 | Modeling Rainfall Data for Agriculture in Pakistan Using Unsupervised Techniques |
| 19 | Muhammad Azeem<br>2013-ag-6422 | Recognizing Rainfall Patterns in Pakistan Using Computational Intelligence |
| 20 | Saqib Altaf<br>2013-ag-6555 | Forex Market Trading Recommendation Expert System |
| 21 | Maria Nazir<br>2013-ag-1505 | Analysis Of Precipitation in Faisalabad Using Machine Learning Techniques |
| 22 | Faisal Shahzad<br>2011-ag-965 | An Empirical Study of Software Product Line Scoping and Requirement Engineering Process in Small and Medium Size Organizations |
| 23 | Muhammad Atif<br>2010-ag-1545 | Farm Manager: An Android Based Solution for The Management of Agriculture in Pakistan |
| 24 | Maryum Ashfaq<br>2011-ag-1001 | Observation Of Evolutionary Focused Security Conditions on Computational Distributed Atmosphere with The Support of Artificial Neural Network |
| 25 | Ghulam Fatima<br>2014-ag-8111 | Adaptability Confrontation in ERP Accomplishment at Faisalabad Industry |
| 26 | Sarwat Jamil<br>2011-ag-523 | An Effective Plan of Distributed Query Processing Generation in Distributed Database Systems |
| 27 | Samia Akbar<br>2007-ag-4033 | Improving The Quality of Education by Using Data Mining Techniques in Teaching Methods |
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