Dr. Khizar Hayat

Associate Professor

Mathematical and Physical Sciences - Computer Sciences Section

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Office Location: 11G - 30

Time at UoN: Since 2013

Marital Status: ....

Khizar Hayat is currently Associate Prof. in Computer Science at the Department of Mathematical and Physical Sciences (DMPS), College of Arts and Sciences (CAS), University of Nizwa (UoN), Sultanate of Oman. DMPS is currently offering 12 different undergraduate and graduate programs in Mathematics, Statistics, Physics and Computer Science. In addition to this responsibility, he is the head of quality enhancement/accreditation of CAS and oversees about 50 undergraduate and graduate programs. He joined UoN in September 2013, as Associate Professor. Previously he served as the Head of Computer Science Department - also as Associate Professor - at the Abbottabad campus of COMSATS Institute of Information Technology (CIIT), Pakistan. Before joining CIIT in December 2009, he was working as a lecturer at the Higher Education Department Khyber-Pukhtunkhwa, Pakistan, from May 1995. He received his PhD (Computer Science) degree in June 2009 from the University of Montpellier 2 (UM2), France, while working at the Laboratory of Informatics, Robotics and Microelectronics Montpellier (LIRMM). His areas of interest are image processing, information hiding (watermarking, steganography etc), cryptography, data science/analytics and theoretical computer science.

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Academic Qualifications

PhD in Computer Science, University of Montpellier, France, 2009, Scalable 3D Visualization via Synchronous Data Hiding

Masters, University of Montpellier, France, 2006, Wavelet based data hiding of DEM in the context of real-time 3D visualization

MS (Major in Computer Science), Muhammad Ali Jinnah University, Karachi, Pakistan (now Capital University Islamabad), 2004, Investigation of the inherent robustness of PNG images for LSB steganography and role of binary Golay code in enhancing the robustness

Teaching Activities

MSc/PhD Teaching (with frequency):, 1) Cryptography and Network Security (5 times), 2) Data Science Essentials (>4), 3) Advanced Algorithm Design and Analysis (>6) 4) Advanced Digital Image Processing (>6), 5) Emerging Trends in Data Science (>6), 6) Research Methods (>2), 7) Multimedia Security (>2)

Undergraduate Teaching (with frequency), 1) Design and Analysis of Algorithm (>4), 2) Introduction to Algorithms and Programming (>8) 3) Introduction to Cryptography (>2), 4) Object Oriented Programming (>3), 5) Introduction to Databases (>2), 6) Finite automata and Computation theory (>5), 7) Discrete Structures/Mathematics (>3), 8) Digital Logic and Design (>3), 9) Computer Skills (>10), 10) Numerical Methods in Computing (>3), 11) Digital Image Processing (>2)

Research Activities

- Research Interests

Image Processing

Information Hiding, Watermarking and Steganography

Data Science/Analytics

Theoretical Computer Science

Machine Learning Engineering

- Conference Presentations

Straightforward adaptation of particle filter to fish eye images for top view pedestrian tracking, IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2024, Seoul, Korea, 14/04/2024

My ORCID page has all the information on publications as well as links to Scopus, Google Scholar, Clarivate etc., https://orcid.org/my-orcid?orcid=0000-0001-5216-6019, 08/09/2013

- Conference Attendance

My ORCID page has all the information on publications as well as links to Scopus, Google Scholar, Clarivate etc., https://orcid.org/my-orcid?orcid=0000-0001-5216-6019, 08/09/2013

- Publications

Article:

1. 2024 [Faked Speech Detection with Zero Prior Knowledge](#), S. Al Ajmi, K. Hayat, A. Al Obaidi, N. Kumar, M. Salim and B. Magnier, Discover Applied Sciences, vol. 6 (288)

2. 2023 [Revisiting Mehrotra and Nichani`s Corner Detection Method for Improvement with Truncated Anisotropic Gaussian Filtering](#), B. Magnier and K. Hayat, Sensors vol. 23(20):8653

3. 2022 [Seamless Copy–Move Replication in Digital Images](#), T. Qazi, M. Ali, K. Hayat and B. Magnier, J. Imaging, vol. 8(3):69

4. 2022 [Human Tracking in Top-view Fisheye Images: Analysis of Familiar Similarity Measures via HOG and against various Color Spaces](#), H. Talaoubrid, M. Vert, K. Hayat and B. Magnier, J. Imaging, vol. 8(4):115

5. 2018 [Multimedia super-resolution via deep learning: A survey](#), K. Hayat, Digital Signal Processing, vol. 18, pp 198-217

6. 2017 [Forgery Detection in Digital Images via Discrete Wavelet and Discrete Cosine Transforms](#), K. Hayat, and T. Qazi, Computers and Electrical Engineering, vol. 62, no. C, pp 448 – 458

7. 2014 [The Optical Character Recognition of Urdu-like Cursive Scripts](#), S. Naz, K. Hayat, I. Razzak, M. W. Anwar, S.A. Madani and S.U. Khan, Pattern Recognition, vol. 47, no. 3, pp 1229-1248

8. 2014 [Curvelet Based Offline Analysis of SEM Images](#), 11. S. H. Shirazi, N. Haq, K. Hayat, S. Naz and I. Haq, PLoS ONE vol 9, no. 8: e103942

9. 2008 [Scalable 3D Terrain Visualization through Reversible JPEG2000-Based Blind Data Hiding](#), K. Hayat, W. Puech and G. Gesquière, IEEE Trans. Multimedia, volume 10, no. 7, pp. 1261-1276

10. 2008 [Above are selected publications: For the rest of the publications visit my ORCID page](#), (also has links to my Scopus, Google Scholar, Clarivate etc.)

Faculty Administrative Experience

2018 - 2022: Head Department of Mathematical and Physical Sciences (DMPS-CAS) - University of Nizwa
> *Headed a department with 14 undergraduate and graduate programs in Computer Science, Mathematics, Physics and Statistics; Developing and Starting MSc Mathematics and Computer Science Program*

2017 - 2021: College Quality Management Officer - University of Nizwa
> *Spearheading OAAA accreditation documentation of about 50 programs*

2014 - 2023: Head of Computer Science (DMPS-CAS) - University of Nizwa
> *Approval and Start of MSc Computer Science program, Review of all CS syllabi*

2012 - 2013: HoD Computer Science - COMSATS University Abbottabad

Community Services

19/03/2025: • Area Editor Signal Processing: Image Communication (SPIC), Elsevier.

18/03/2025: Associate Editor IEEE Transactions on Dependable & Secure Computing (TDSC).

01/01/2022: Guest Editor Sensors (MDPI) Special issue on Digital Image Processing

01/01/2020: Academic Editor Security and Communication Networks, Wiley

Consultancy Activities

Reviewer, TRC, The Research Council of Oman

PhD Examiner/Reporter at various International Universities , 1) University of Montpellier, France. 2)Anna University, Chennai, India.

REFEREE for funded projects review for ICT/R&D and HEC, Pakistan

Peer Reviewer of journals of international repute, including: 1. IEEE Trans. Neural Networks & Learning Systems (TNNLS) 2. Pattern Recognition 3. Journal of Signal Processing: Image Communication- Elsevier 4. EURASIP Journal on Advances in Signal Processing 5. Multimedia Tools and Applications 6. Computer Systems and Engineering 7. Journal of Supercomputing 8. IEEE Trans. Multimedia (ToMM) 9. IEEE Trans. Image Processing (TIP) 10. Journal of Parallel and Distributed Computing - Elsevier 11. Journal of Electronic Imaging - IS&T and SPIE

Reviewer IEEE ICASSP 2024, ICET 2022, ICET2019, EUSIPCO etc.

Membership in Professional Bodies

     2014-Present: IEEE and IEEE Communication Society Member (92945791)

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