

CURRICULUM VITAE



Position/Designation: HoD & CQMO/Associate Professor

Department: Mathematical and Physical Sciences

College: Arts and Sciences

University of Nizwa, Sultanate of Oman

Personal Information

Name: Khizar Hayat
 Marital Status: Married
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Academic Qualifications

PhD in Computer Science

Teaching Activities, Current / Previous Experience

Course Name	BA-MA-PhD	College/University	Number of times taught
Cryptography and Network Security	MSc	UoN/CU	5
Data Science Essentials	MSc	UoN	2
Advanced Algorithm Design and Analysis	MSc	UoN/CU	6
Digital Image Processing	MSc	UoN/CU	6
Research Methods	PhD/MSc	CU	1
Multimedia Security	PhD/MSc	CU	1
Design and Analysis of Algorithm	BSc	CU	3
Introduction to Programming C++	BSc	UoN	8
Object Oriented Programming	BSc	UoN	3
Introduction to Databases	BSc	UoN	2
Finite automata and Computation theory	BSc	UoN	5
Discrete Mathematics	BSc	UoN	3
Computer Skills	BSc	UoN	8
Numerical Methods in Computing	BSc	UoN	3

Research Activities

1. S. Al Ajmi, **K. Hayat**, A. Al Obaidi, M. Salim, "Voice Mimicry based Audio forensics," Submitted.
2. H. Talaoubrid, M. Vert, **K. Hayat** and B. Magnier, "Human Tracking in Top-view Fisheye Images: Analysis of Familiar Similarity Measures via HOG and against various Color Spaces", MDPI J. Imaging (Accepted).
3. T. Qazi, M. Ali, **K. Hayat** and B. Magnier, "Seamless Copy–Move Replication in Digital Images", MDPI J. Imaging, Mar. 2022, vol. 8(3):69, <https://doi.org/10.3390/jimaging8030069>
4. A. Aslam, K. Hayat, A. I. Umar, B. Zohuri, P. Zarkesh-Ha, D. Modisette, S. Z. Khan, B. Hussian, "Wavelet-based Convolutional Neural Networks for Gender Classification," in [Journal of Electronic Imaging](#), vol. 28(1), 013012 (2019).
5. K. Hayat, "Multimedia super-resolution via deep learning: A survey" in [Digital Signal Processing](#), vol. 18, pp 198-217, Oct. 2018.
6. K. Hayat, and T. Qazi, "Forgery Detection in Digital Images via Discrete Wavelet and Discrete Cosine Transforms", [Computers and Electrical Engineering](#), vol. 62, no. C, pp 448 – 458, Aug. 2017.
7. K. Hayat, N. A. Al-Shukaili and K. Sultan, "Alice in Oman: A Study on Object-First Approaches in Computer Science Education", [Education and Information Technologies](#), vol. 22, no. 4, Jul. 2017.
8. U. Habib, K. Hayat and G. Zucker, "Complex building's energy system operation patterns analysis using bag of words representation with hierarchical clustering", [Complex Adaptive Systems Modeling](#), vol. 4, no. 8, 2016.
9. K. Bilal, S. U. Khan, M. Manzano, E. Calle, S. A. Madani, K. Hayat, D. Chen, L. Wang, and R. Ranjan, "Modeling and Simulation of Data Center Networks," in Handbook on Data Centers, S. U. Khan and A. Y. Zomaya, Eds., Springer-Verlag, New York, USA, 2015, ISBN 978-1-4939-2091-4, Chapter 31.
10. O. Khalid, S. U. Khan, S. A. Madani, K. Hayat, L. Wang, D. Chan, and R. Ranjan, "Opportunistic Databank: A Context-aware on-the-fly Data Center for Mobile Networks," in Handbook on Data Centers, S. U. Khan and A. Y. Zomaya, Eds., Springer-Verlag, New York, USA, 2015, ISBN
11. S. Swati, **K. Hayat** and Z. Shahid, "A Watermarking Scheme for High Efficiency Video Coding (HEVC)", [PLoS ONE](#) vol 9, no. 8: e105613, Aug. 2014.
12. S. H. Shirazi, N. Haq, **K. Hayat**, S. Naz and I. Haq, "Curvelet Based Offline Analysis of SEM Images", [PLoS ONE](#) vol 9, no. 8: e103942, Aug. 2014.
13. H. Akbar, N. Haq, **K. Hayat** and U. I. Bajwa, "Bilateral Symmetry Detection on the Basis of Scale Invariant Feature Transform", [PLoS ONE](#) vol 9, no. 8: e103561, Aug. 2014.
14. S. Naz, **K. Hayat**, I. Razzak, M. W. Anwar, S.A. Madani and S.U. Khan, "The Optical Character Recognition of Urdu-like Cursive Scripts", [Pattern Recognition](#), vol. 47, no. 3, pp 1229-1248, Mar. 2014.
15. S. Naz, M.I. Razzak, K. Hayat, M.W. Anwar and S.Z. Khan. Intelligent Systems for Science and Information Studies in Computational Intelligence, vol. 542, pp. 181-196, Chapter: Challenges in Baseline Detection of Arabic Script Based Languages, Springer International Publishing, **2014** (ISBN 978-3-319-04701-0).
16. R. Irfan, G. Bickler, S. U. Khan, J. Kolodziej, H. Li, D. Chen, L. Wang, **K. Hayat**, S. A. Madani, B. Nazir, I. A. Khan, and R. Ranjan, "Survey on Social Networking Services," [IET Networks](#), vol. 2, no. 4, pp 224–234, Dec. 2013.
17. M. Ajmal, S.A. Madani, K. Bilal, T. Maqsood, B. Nazir and **K. Hayat**, "Coordinated Opportunistic Routing Protocol for Wireless Mesh Networks", [Computers and Electrical Engineering](#), vol.39, no. 8, pp 2442-2453, Nov. 2013.
18. T. Qazi, **K. Hayat**, S.A. Madani and I. A. Khan et al., "A Survey on Blind Image Forgery Detection", [IET image Processing](#), vol. 7, no. 7, pp 660–670, Oct. 2013.

19. K. Bilal, S.U. Khan, S. A. Madani, **K. Hayat**, M. Iqbal, N. Min-Allah, J. Kolodziej, L. Wang, S. Zeadally and D. Chen, "A Survey on Green Communications using Adaptive Link Rate" [Cluster Computing](#), Springer, vol. 16, no. 3, pp 575-589, Sep. 2013.
20. K. Bilal, S.U. Khan, L. M. Zhang, H. Li, **K. Hayat**, S.A. Madani, N. Min-Allah *et al.* "Quantitative Comparisons of the State of the Art Data Center Architectures" (2013) [Concurrency and Computation: Practice and Experience](#), Wiley, vol. 25, no. 12, pp. 1771–1783, Aug. 2013.
21. O. Khalid, S.U. Khan, S.A. Madani, **K. Hayat**, M. I. Khan, N. Min-Allah, J. Kolodziej, L. Wang, S. Zeadally and D. Chen, "Comparative Study of Trust and Reputation Systems for Wireless Sensor Networks", [Security and Communication Networks](#), Wiley, vol. 6, no. 6, pp 669–688, Jun. 2013.
22. N. Noreen, **K. Hayat**, S.A. Madani, M. Hussain, I. Ahmad and A. A. Alelaiwi "Curvelet based Brain Tumor Detection from Magnetic Resonance Images", [INFORMATION - An International Interdisciplinary Journal](#) vol. 16, no. 5, pp.3259-3266, May 2013. 2011 **IF**: 0.250
23. S. Naz, **K. Hayat**, M. W. Anwar, H. Akbar and I. Razzak: "*Challenges in Baseline Detection of Cursive Script Languages*", in Proc. Science and Information Conference, [SAI 2013](#), Oct. 07 - 09, 2013, London, UK, IEEE Society Press, pp. 551-556.
24. S. Naz, **K. Hayat**, I. Razzak, M. W. Anwar and H. Akbar: "*Arabic Script Based Language Character Recognition: Nasta'liq vs Naskh Analysis*", in Proc. World Congress on Computer and Information Technology [WCCIT 2013](#), Jun. 22 - 24, 2013, Sousse, Tunis, IEEE Society Press, pp. 1-7.
25. S. Naz, **K. Hayat**, I. Razzak, M. W. Anwar and H. Akbar: "*Arabic Script Based Character Segmentation: A Review*", in Proc. World Congress on Computer and Information Technology [WCCIT 2013](#), Jun. 22 - 24, 2013, Sousse, Tunis, IEEE Society Press, pp. 1-6.
26. J. Shuja, S. A. Madani, K. Bilal, **K. Hayat**, S. U. Khan and S. Sarwar "Energy-Efficient Data Centers" [Computing](#), Springer, vol. 94, no. 12, pp 973-994, Dec. 2012.
27. M. Jadoon, S.A. Madani, **K. Hayat** and S. Mahlkecht, "Location and Non-Location Based Ad-hoc Routing Protocols under various Mobility Models: A Comparative Study", [The International Arab Journal of Information Technology \(IAJIT\)](#), vol. 9, no. 5, pp. 418-427, Sep. 2012.
28. S. Mustafa, S.A. Madani, K. Bilal, **K. Hayat** and S. U. Khan, "Stable Path Multi-Channel Routing With Extended Level Channel Assignment", [International Journal of Communication Systems](#), vol. 25, no. 9, pp. 887–902, Jul. 2012.
29. A.R. Khan, S.A. Madani, **K. Hayat** and S. U. Khan, "Clustering-Based Power Controlled Routing for Mobile Wireless Sensor Networks", [International Journal of Communication Systems](#), vol. 25, no. 4, pp. 529-542, Apr. 2012.
30. N. Haq, **K. Hayat**, S.A. Madani and Y. Iqbal, "Offline Estimation of 2D Crystal Lattice Parameters by Processing the Electron Diffraction Image", [Optics Communications](#), vol. 285, no. 5, pp. 609-616, Mar. 2012.
31. S. Khan, K. Hayat, S. A .Madani, S. U. Khan and J. Kolodziej: "*The Median Resource Failure Checkpointing*", in Proc. 26th EUROPEAN Conference on Modelling and Simulation, [ECMS 2012](#), May 29 - Jun. 01, 2012, Koblenz, Germany, IEEE Society Press, pp. 483-489.
32. O. Khalid, S. U. Khan, J. Kolodziej, L. Zhang, J. Li, K. Hayat, S. A .Madani, L. Wang, D. Chen: "*A Checkpoint Based Message Forwarding Approach For Opportunistic Communication*", in Proc. 26th EUROPEAN Conference on Modelling and Simulation, [ECMS 2012](#), May 29 - Jun. 01, 2012, Koblenz, Germany, IEEE Society Press, pp. 512-518.
33. K. Bilal, S. U. Khan, J. Kolodziej, L. Zhang, K. Hayat, S. A .Madani, N. Min-Allah, L. Wang, D. Chen: "*A Comparative Study of Data Center Network Architectures*", in Proc. 26th EUROPEAN Conference on Modelling and Simulation, [ECMS 2012](#), May 29 - Jun. 01, 2012, Koblenz, Germany, IEEE Society Press, pp. 526-532.
34. N. Islam, W. Puech, K. Hayat and R. Brouzet, "Application of Homomorphism to Secure Image Sharing", [Optics](#)

[Communications](#), vol. 284, no. 19, pp. 4412-4429, Aug. 2011.

35. I. A. Khan, S. A. Madani, W. Anwar and K. Hayat, "Location Based Dynamic Probabilistic Broadcasting for MANETs", [World Applied Sciences Journal \(WASJ\)](#). vol. 13, no. 11, Aug. 2011.
36. N. Noreen, K. Hayat and S. A. Madani, "MRI Segmentation Through Wavelets and Fuzzy C-Means", [World Applied Sciences Journal \(WASJ\)](#). vol. 13, Special issue on App. Math 2011.
37. F. Rehman, S. A. Madani, K. Bilal and K. Hayat, "Discovery of Multiple Mobile Gateways in Wireless Mesh Networks", [World Applied Sciences Journal \(WASJ\)](#). vol.15, no.4 pp. 590-597, pp. 34-39, 2011.
38. S. Ghayasuddin, A. Rehman, K. Hayat and I. A. Khan, "Simulation Study of AODV Protocol on the Basis of Two Mobility Models", [Journal of Basic and Applied Scientific Research](#), vol. 1, no. 12, pp. 3127-3133, 2011.
39. U. Habib, I. Jørstad, D. van Thanh, K. Hayat and I. A. Khan, "A Framework for Secure Linux Based Authentication in Enterprises via Mobile Phone", [Journal of Basic and Applied Scientific Research](#), vol. 1, no. 12, pp. 3058-3066, 2011.
40. N. Haq, K. Hayat, S. H. Sherazi and W. Puech, "Segmentation Through DWT and Adaptive Morphological Closing" in Proc. 19th European Signal Processing Conference, [EUSIPCO'11](#), Aug. 29 – Sep. 02, 2011, Barcelona, Spain.
41. N. Haq, K. Hayat, N. Noreen and William Puech "Image Sharpening by DWT-Based Hysteresis" (2011) Proc. Advanced Concepts for Intelligent Vision Systems, [ACIVS 2011](#), Aug. 22-25 2011, Ghent, Belgium.
42. K. Hayat, W. Puech and G. Gesquière, "Adaptively synchronous scalable spread spectrum (A4S) data-hiding strategy for three-dimensional visualization", [Journal of Electronic Imaging](#), volume 19, no. 2 , May 2010.
43. K. Hayat, W. Puech, N. Islam and G. Gesquière, "Seamless Heterogeneous 3D Tessellation via DWT Domain Smoothing and Mosaicking", [EURASIP Journal on Advances in Signal Processing](#), vol. 2010, Article ID 913681, 2010.
44. N. Islam, W. Puech, K. Hayat and R. Brouzet, "Analysis of Homomorphic Properties of RSA-Based Cryptosystem for Image Sharing", Proc. 10th International Conference on Signal Processing, ICSP'10, Oct. 24-28, 2010, Beijing, China.
45. K. Hayat, W. Puech and G. Gesquière, "Seamless Heterogeneous Tessellation via Smoothing and Mosaicking in the DWT Domain", Proc. SPIE, Electronic Imaging, [Visual Information Processing and Communication](#), vol. 7543, no. 33. San Jose, CA, USA: SPIE, IS&T, Jan. 17 – 21, 2010.
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47. K. Hayat, W. Puech, G. Gesquière and G. Subsol, "3D Facial Visualization through Adaptive Spread Spectrum Synchronous Scalable (A4S) Data Hiding", in Proc. IEEE International Conference on Image Processing, [ICIP'09](#), Nov. 7-11, 2009, Cairo.
48. K. Hayat, W. Puech and G. Gesquière, "Seamless Joining of Tiles of Varying Resolutions for Online 3D Terrain Visualization by DWT Domain Smoothing" in Proc. 17th European Signal Processing Conference, [EUSIPCO'09](#), Aug. 24-28, 2009, Glasgow, Scotland.
49. K. Hayat, W. Puech, and G. Gesquière, "An Adaptive Spread Spectrum (SS) Synchronous Data Hiding Strategy for Scalable 3D Terrain Visualization", in Proc. SPIE, Electronic Imaging, Visualization and Data Analysis , [VDA'09](#), vol. 7243, no. 7. San Jose, CA, USA: SPIE/IS&T, Jan. 18-22, 2009.
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53. K. Hayat, W. Puech and G. Gesquière, "A Lossy JPEG2000-based Data Hiding Method for Scalable 3D Terrain Visualization" in Proc. 16th European Signal Processing Conference, [EUSIPCO'08](#), Lausanne, Switzerland, Aug. 25-29, 2008.
54. K. Hayat, W. Puech and G. Gesquière, "Scalable Data Hiding for Online Textured 3D Terrain Visualization", in Proc. IEEE International Conference on Multimedia & Expo, [ICME'08](#), Hannover, Germany, Jun. 23-26, 2008.
55. K. Hayat, W. Puech and G. Gesquière, "An Efficient Data-hiding Method Based on Lossless JPEG2000 for a Scalable and Synchronized Visualization of 3D Terrains" in Proc. 15th European Signal Processing Conference, [EUSIPCO'07](#), Poznan, Poland, Sep. 3-7, 2007, pp. 2519-2523.
56. K. Hayat, W. Puech, G. Gesquière, and M. Chaumont, "Wavelet Based Data-Hiding of DEM in the Context of Real Time 3D Visualization", in Proc. SPIE, Electronic Imaging, Visualization and Data Analysis, [VDA'07](#); San Jose, CA, USA: SPIE, IS&T, Jan. 28 – Feb. 1, 2007, vol. 6495, no. 20, pp. 64.
57. K. Hayat, G. Gesquière and W. Puech, "Une méthode efficace d'insertion de données cachées basée sur JPEG2000 sans perte pour une visualisation scalable et synchronisée de terrain 3D », [XXI^e Colloque GRESSIN](#), Traitement du Signal et des Images, Troyes, France, Sep. 11-14, 2007, pp. 1225-1228.
58. K. Hayat, W. Puech, G. Gesquière and M. Chaumont. « Visualisation 3D temps-réel à distance de MNT par insertion de données cachées basée ondelettes », Compression et Représentation des Signaux Audiovisuels, [CORESA'06](#), Caen, France, Nov. 9-10, 2006.

Faculty Administrative Experience

Jan 2018-to-date	University of Nizwa	Oman
Head of Department of Mathematical and Physical Sciences (with 12 different programs of Mathematics, Statistics, Physics and Computer Science), College of Arts and Sciences.		
Jan 2017-to-Sep 2021	University of Nizwa	Oman
College Quality Management Officer of the largest college of the University, dealing with about 40 different programs with emphasis on accreditation.		
Sep 2014-to-date	University of Nizwa	Oman
Head of Computer Science (HoS-CS).		
May 2012-Sep. 2013	COMSATS Institute of IT, Abbottabad	Pakistan
Head of Computer Science (CS) Dept. from May 2012 till Sep. 2013. The department had more than 1200 BS, MS and PhD students with the faculty strength of around 60 including 18 PhDs.		

Community Services

University of Nizwa:

- As Head Section Curriculum Committee on Masters, have successfully got the approval of MSc Computer Science program at UoN.
- Member of Vice Chancellor's Special Working Group on Academic Affairs.
- Had been at the fore-front of revising the syllabi of all the Undergraduate Computer Science programs; a revision long overdue.

CIIT:

- Member Board of Studies (BoS), Campus Management committee.

Consultancy Activities
Membership in Professional Bodies
<ol style="list-style-type: none">1. IEEE and IEEE Communication Society Member (92945791)2. Member EURASIP3. HEC Approved Supervisor
Awards and recognitions
<ul style="list-style-type: none">• Research Productivity award for years 2011, 2012,2013 and 2014 from CIIT• Second Position in MSc in the Department - 1993.• Silver Medal in MS (Computer Science Major) - 2004.• Selected for indigenous scholarship for MS studies as a result of GRE type Competitive exam held by NUST for MoST/HEC in Dec. 2000.• Selected for four years overseas HEC scholarship for PhD studies in France.