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RESEARCH INTERESTS	Computer vision and image processing, including image retrieval, shape matching, salient object detection, and machine learning. My doctoral thesis title is Towards Creating Digital Twins Authoring Tool based on 3D Reconstruction and 3D Object Retrieval . Previously, I have worked on information retrieval, wireless networking, and cloud computing and security.	
EDUCATION	Norwegian University of Science and Technology, Norway PhD in Computer Science (Scholar) Advisor: Ibrahim A. Hameed University of Jinan, China Master in Computer Science (Completed) CGPA: 4.19/5.00 Percentage: 87 % Advisor: Prof. Xiuyang Zhao University of the Punjab, Pakistan Bachelors of Science in Computer Science (Completed) CGPA: 3.32/4.00	Nov 2020 - Present Sep 2017 – Jun 2020 Oct 2013 – Jul 2017
PUBLICATIONS	<p>[1] Hassan, M. U., Alaliyat, S., & Hameed, I. A. “Image Generation from Scene Graphs and Layouts: A Comparative Analysis,” Applied Intelligence. (IF: 5.08) (Under Review)</p> <p>[2] Hassan, M. U., Sarwar, R., & Hassan, S. U. “SODRet: Instance Retrieval Using Salient Object Detection for Self-service Shopping,” Annals of Operations Research. (IF: 4.85) (Under Review)</p> <p>[3] Zhang, M., Hassan, M. U., Niu, D., Zhao, X., Hameed, I. A. & Hassan, S. U. “A Methodology for Shape Matching of Non-rigid Structures Based on Integrated Graphical Information,” Displays. (IF: 2.16) (Under Review)</p> <p>[4] Yaqoob, I., Hassan M. U., Niu, D., Zhao, X., Hameed, I. A., & Hassan, S. U. “A Novel Person Re-identification Network to Address Low-Resolution Problem in Smart City Context,” ICT Express. (IF: 4.31) (Under Review)</p> <p>[5] Hassan, M. U., Steinnes, O. M., & Hameed, I. A. “A Novel Deep Learning-based Framework for the Predictive Maintenance of Norwegian Roads,” 8th International Conference on Advanced Intelligent Systems and Informatics. (Accepted)</p> <p>[6] Hassan, M. U., Niu, D., Zhang, M., & Zhao, X. “Asymmetric Hashing Based on Generative Adversarial Network,” Multimedia Tools Applications (2022). https://doi.org/10.1007/s11042-022-13141-2. (IF: 2.75)</p> <p>[7] Hassan, M. U., Stavroula, A, Hameed, I. A., & Torres, R. d. S. “Digital Twins for Lighting Analysis: Literature Review, Challenges, and Research Opportunities,” 36th ECMS Conference on Modelling and Simulation, Ålesund, Norway, 2022, pp. 226-235.</p> <p>[8] Hassan, M. U., Yaqoob, I., Zulfiaqr, S., & Hameed, I. A. “A Comprehensive Study of HBase Storage Architecture—A Systematic Literature Review,” Symmetry 2021, 13, 109. https://doi.org/10.3390/sym13010109. (IF: 2.71)</p> <p>[9] Gribbestad, M., Hassan, M. U., Hameed, I. A., & Sundli, K. “Health Monitoring of Air Compressors Using Reconstruction-Based Deep Learning for Anomaly Detection with Increased Transparency,” Entropy 2021, 23, 83. https://doi.org/10.3390/e23010083. (IF: 2.52)</p> <p>[10] Gribbestad, M., Hassan, M. U., & Hameed, I. A. “Transfer Learning for Prognostics and Health Management (PHM) of Marine Air Compressors,” Journal of Marine Science and Engineering. 2021, 9, 47. doi: https://doi.org/10.3390/jmse9010047. (IF: 2.45)</p> <p>[11] Yan, A., Chen, Z., Zhang, H., Peng, L., Yan, Q., Hassan, M. U., Zhao, C., & Yang, B. “Effective Detection of Mobile Malware Behavior based on Explainable Deep Neural Network,” Neurocomputing. doi: 10.1016/j.neucom.2020.09.082. (IF: 5.71).</p> <p>[12] Hassan, M. U., Zafar, N., Ali, H., Yaqoob, I., Alaliyat, S. A. A., & Hameed, I. A. “Collaborative filtering based hybrid music recommendation system,” Proceedings of International Conference</p>	

- on Information Technology and Applications. Lecture Notes in Networks and Systems, vol 350. Springer, Singapore. https://doi.org/10.1007/978-981-16-7618-5_21.
- [13] Li, M., Zhang, M., Niu, D., **Hassan, M. U.**, Zhao, X., & Li, N. "Point Set Registration Based on Feature Point Constraints," *The Visual Computer*, pp.1-14. <https://doi.org/10.1007/s00371-019-01771-x>. (IF:2.60).
 - [14] **Hassan, M. U.**, Niu, D., Zhao, X., Shohag, M. S. A., Ma, Y., & Zhang, M. "Salient Object Detection based on CNN Fusion of Two Types of Saliency Models," 2019 34th International Conference on Image and Vision Computing New Zealand (IVCNZ). doi:10.1109/ivcnz48456.2019.8960994.
 - [15] **Hassan, M. U.**, Shohag, M. S. A., Niu, D., Shaukat, K., Zhang, M., Zhao, W., & Zhao, X. "A framework for the revision of large-scale image retrieval benchmarks," *Proc. SPIE 11179, Eleventh International Conference on Digital Image Processing (ICDIP 2019)*, 111794D (14 August 2019); <https://doi.org/10.1117/12.2539640>.
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 - [17] Yaqoob, I., **Hassan M. U.**, Niu, D., & Zhao, X. "Efficient Deep Learning Approach to Address Low-Resolution Person Re-Identification," In *Proceedings of the 2020 4th International Conference on Vision, Image and Signal Processing (ICVISIP 2020)*. Article 22, pp.1–5. doi: <https://doi.org/10.1145/3448823.3448848>.
 - [18] Cui, L., Zhao, W., **Hassan, M. U.**, & Yaqoob, I. "Shape Matching Based on the Enhancement of Riemannian Structure Information," In *Proceedings of the 2020 4th International Conference on Vision, Image and Signal Processing (ICVISIP 2020)*. Article 9, pp.1–5. doi: <https://doi.org/10.1145/3448823.3448846>.
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 - [22] **Hassan, M. U.**, Shaukat, K., Niu, D., Mahreen, S., Ma, Y., Haider, F., & Zhao, X. "An Overview of Schema Extraction and Matching Techniques," 2018 2nd IEEE Advanced Information Management, Communicates, Electronic and Automation Control Conference (IMCEC 2018), Xi'an, China, 2018, pp. 1290-1294. doi: 10.1109/IMCEC.2018.8469502.
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**WORK
EXPERIENCE**

**Shandong Provincial Key Laboratory of Network-Based
Intelligent Computing, University of Jinan, China**

Sep 2018 – Jun 2020

Research Assistant, Computer Vision and Deep Learning

- Image and Object Retrieval
- Machine Learning and Medical Imaging

Department of Information Technology, University of the
Punjab, Pakistan

Mar 2015 – Aug 2016

Teacher Assistant, Database Systems & Object-Oriented
Programming

PROJECTS

Android: Book Corner App (Final Year Project at Undergraduate Level)
ASP.Net: Student Web Portal System (Semester Project at Undergraduate Level)
ASP.Net: Online Shopping & Cart System (Semester Project at Undergraduate Level)

ONLINE COURSES

- **IBM Cognitive Class** – Python for Data Science
- **IBM Cognitive Class** – Machine Learning with Python
- **IBM Cognitive Class** – Deep Learning Fundamentals
- **IBM Cognitive Class** – **Deep Learning with TensorFlow**

**ACHIEVEMENTS
& AWARDS**

- Fully Funded Chinese Government Scholarship for Master Studies (2017-2020)
- Fully Funded Scholarship by VISTEC to participate in Machine Learning Research School (MLRS 2019), Bangkok, Thailand
- Student Best Paper Award at IEEE IMCEC 2018, Xian, China
- 3rd Position in SISE Graduate Academic Research Competition, Jinan, China

**CONFERENCE
PRESENTATIONS**

- Delivered Oral Presentation at 36th ECMS Conference on Modelling and Simulation, Norway
- Delivered Oral Presentation at 34th Image and Vision Computing, New Zealand
- Poster Presentation at Machine Learning Research School, Bangkok, Thailand
- Delivered Oral Presentation at 22nd INMIC 2019, Islamabad, Pakistan
- Delivered Oral Presentation at 11th ICDIP 2019, Guangzhou, China
- Delivered Oral Presentation at IEEE IMCEC 2018, Xian, China
- Delivered Oral Presentation at EAI FUTURE5V 2017, Islamabad, Pakistan

SKILLS

Programming: Python, C/C++, C#, MATLAB, Java
Public Library: PyTorch, Tensorflow, Keras, Caffe, OpenCV
Environments & IDE: Linux, Windows, Visual Studio 2015, NetBeans
Languages: English (fluent), Bokmål (basic), Mandarin (basic), Urdu (native)