# JAMIL **AHMAD**

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**https://scholar.google.com.pk/citations?user=7dw-9YgAAAAJ&hl=en ·**

"Striving for community well-being and enhancing the quality of life through applied computer vision and deep learning."

## PERSONAL DATA

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|---|---|
| **Name**: | Jamil Ahmad |
| **Date of Birth**: | 15-Nov-1985 |
| **Place of Birth**: | Peshawar, Pakistan |
| **Nationality**: | Pakistan |
| **Contact Address**: | Metaverse Lab, 1A Building, Department of Computer Vision, Mohamed Bin Zayed University of Artificial Intelligence, Masdar City, Abu Dhabi, UAE |
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## PROFILE

- **Field of Specialization**: Computer Vision and Deep Learning
- Published **39** research articles in reputed journals with a cumulative impact factor of 120+
- More than **5000+** citations with an h-index = **30+**
- Included in the list of **top 2%** scientists in 2022, 2023
- **15+** years of teaching experience at the university level
- **10+** years of research and development experience
- Significant experience in **proposal** writing, **fund acquisition**, and project **administration**
- Worked on **four registered patents** (South Korea)
- Full stack development for AI applications (Django/Flask, Python, TensorFlow, PyTorch, Cloud, Mobile)
- Experience in **supervision** of Ph.D. and Master students
- Research **collaborations** in the USA, UK, South Korea, Saudi Arabia, & the UAE.
- Serving as reviewer/associate editor for many reputed journals
- IEEE Senior Member since 2023

## EXPERIENCE

**AUG 2023 – TILL DATE**
**POSTDOC RESEARCHER,** MBZUAI

- Engaged in R&D activities related to developing efficient algorithms for intelligent UAVs
- Deployment on Nvidia edge computing devices
- Efficient vision algorithms for precision agriculture using UAVs
- Research proposals for fund acquisition

**JUL 2023 – JUL 2023**
**ASSISTANT PROFESSOR,** ISLAMIA COLLEGE PESHAWAR

- Teaching to BS, Masters, and Ph.D. students

- Research supervision
- Acquiring funds for R&D activities
- Administrative duties within the department

**OCT 2008 – JUL 2023**
**LECTURER,** ISLAMIA COLLEGE PESHAWAR

- Engaged in teaching to BS, Masters, and Ph.D. students
- R&D activities,
- Student counseling, and
- Research supervision

**FEB 2008 – APR 2009**
**SOFTWARE DEVELOPER,** PAKISTAN AIR FORCE

- e-Engineering Management System (e-EMS),
- Vehicle Management System for the Mechanical Transport Squadron, and
- Personnel Management System for Pakistan Air Force Base Peshawar.

## EDUCATION

**FEB 2018**
**PHD (COMPUTER SCIENCE),** SEJONG UNIVERSITY, SEOUL, SOUTH KOREA [QS: **396**, THE: **250**]
Best Researcher Award
**CGPA:** 4.40/4.5
**Thesis Title:** Salient Convolutional Features to Binary Hash Codes for Efficient Image Retrieval

**MAY 2014**
**MS (COMPUTER SCIENCE),** ISLAMIA COLLEGE PESHAWAR
**CGPA:** 3.75/4.0 (85% - Top Position holder)
**Thesis Title:** "Object Representation and Recognition using the Fusion of Structural and Statistical Shape Features"

**DEC 2007**
**BCS (HONORS),** UNIVERSITY OF PESHAWAR
**CGPA:** 3.9/4.0 (91.2% - Top Position holder)
**Thesis Title:** "Content-based Image Retrieval"

**AUG 2003**
**HSSC (COMPUTER SCIENCE GROUP),** ISLAMIA COLLEGE PESHAWAR
**MARKS OBTAINED:** 817/1100 (74.3 % - Grade: A)

**MAY 2001**
**SSC (SCIENCE GROUP),** F.G BOYS PUBLIC HIGH SCHOOL PESHAWAR CANTT.
**MARKS OBTAINED:** 698/850 (82.2 % - GRADE: A1)

## TECHNICAL SKILLS & TOOLS

- Hands-on experience with Large Language Models and Vision-Language Models
- Image Processing/Computer Vision using OpenCV in C++ & Python
- Machine Learning & Deep Learning with TensorFlow, PyTorch
- Serving TensorFlow and PyTorch Models with ONNXRuntime in Python and C++
- Model deployment and serving on the cloud (DigitalOcean, Colab, GCP, AWS, Azure)
- Model deployment on Nvidia edge computing devices (TensorRT)

- Serve ML Apps on the Web with Django, PHP, AJAX, Flask, Streamlit, gradio
- Hands-on experience with NLP Transformers and Vision Transformers
- Simulations & Experimentations in Python & MATLAB
- Graphics Programming in OpenGL/C++
- Desktop Applications in C/C++, Python, Java
- Database Development (SQL, MongoDB)

## COURSES TAUGHT

**MS/PhD Courses**

- **COMP526:** Advanced Image Processing [MS/Ph.D.] (2x)
- **COMP523:** Data Science [MS/Ph.D.] (1x)
- **COMP512:** Python for Data Science [MS/Ph.D.] (1x)
- **COMP610:** Deep Learning for Computer Vision [MS/Ph.D.] (3x)
- **COMP613:** Convolutional Neural Networks [MS/Ph.D.] (2x)

**BS Courses**

- **COMP315:** Artificial Intelligence [BS] (2x)
- **COMP416:** Digital Image Processing [BS] (6x)
- **COMP306:** Math Tools for Software Engineering [BS] (5x)
- **COMP319:** Computer Graphics [BS] (7x)
- **COMP321:** Internet Programming [BS] (4x)
- **COMP555:** Simulation & Modeling [MS] (1x)
- **COMP106:** Object Oriented Programming [BS] (4x)
- **COMP102:** C/C++ Programming [BS] (3x)
- **COMP212:** Assembly Language [BS] (3x)
- **COMP205:** Database Systems [BS] (2x)
- **COMP330:** Computer Architecture [BS] (3x)
- **COMP204:** Operating System [BS] (4x)
- **COMP202:** Data Structures [BS] (2x)
- **COMP409:** Human-Computer Interaction [BS] (1x)
- **COMP428:** Software Project Management [BS] (1x)

## ADMINISTRATIVE DUTIES PERFORMED

1. **Coordinator M.S., Ph.D. Programs (2020-23)**
    a. Organize research evaluation committee meetings.
    b. Curriculum design and revision
    c. Address grievances of research students
    d. Facilitate accreditation and program evaluation visits.
2. **Member Accreditation Committee NCEAC (2018-20)**
    a. Coordinate with NCEAC on BS program's accreditation
    b. Facilitate accreditation visits.
3. **Departmental Controller of Exams (2014-15)**
    a. Management and coordination for BS exams within the department
    b. Responsible for smooth conduct of mid and final term exams
4. **Member Board of Studies (2013)**
    a. Participated in curriculum design for BS (CS) and BS (SE)
    b. Approval of new programs from concerned statutory bodies

## SERVICE

Serving as a **reviewer** in the following journals

- IEEE Transactions on Cybernetics
- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Image Processing
- IEEE Transactions on Medical Imaging
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Access
- PLOS One
- Multimedia Tools and Applications, Springer
- Neural Computing and Applications, Springer
- Engineering Applications of Artificial Intelligence, Elsevier
- Neurocomputing, Elsevier
- Expert Systems with Applications, Elsevier

Serving as an **editorial board** member

- Frontiers in Artificial Intelligence, Frontiers

**University Service**

- 2021-23,
  Member Board of Advanced Studies and Research
  City University of Science and Technology Peshawar, Pakistan
- 2021-23,
  Member Thesis Evaluation Committee
  City University of Science and Technology Peshawar, Pakistan, and
  Institute of Management Sciences, Peshawar, Pakistan

## CERTIFICATIONS:

- Higher Education Commission (HEC) Approved Ph.D. Supervisor
  https://www.hec.gov.pk/english/scholarshipsgrants/ASA/Pages/APS-EPORTAL.aspx
- Nvidia DLI Certificate of Competency (Fundamentals of Deep Learning for Computer Vision)
  https://courses.nvidia.com/certificates/624f949a48074826b7d741904a027ad0

## FUNDED RESEARCH PROJECTS (PI/CO-PI/TEAM LEAD):

1. Assisting Farmers in Plant Disease Detection and Treatment at Early Stages using Smart Phone Application (Funded by: Sustainable Development Unit, P&D Dept. Govt of KP, **PKR 9.002 M**) [Completed]
   **Role:** Co-Principal Investigator
2. RFID and GSM based Monitoring & Safety System for School Kids (Funded by: Directorate of Science & Technology, Govt. of KP, **PKR 0.27 M**) [Completed]
   **Role:** Co-Principal Investigator
3. Real-Time Container Corner Casting Detection for Dry Port Automation System (Funded by: Seoho Electric Corporation, South Korea, **KRW 20.0 M**) [Completed]
   **Role:** Technical Team Lead
4. Efficient content-based image retrieval system using deep features and hash codes (Funded by: Sejong University & National Research Foundation of Korea) [Completed]
   **Role:** Lead Researcher

## RESEARCH PROJECTS (INTL. COLLABORATIONS):

1. Face image generation and latent space manipulation for facial recognition applications (Funded by theCircle Ltd, UK) [2022-2023]
   **Role**: Researcher (Remote)
2. Usage of Modern technologies to predict emergence of infectious diseases and to detect outbreak of pandemics (Funded by: Imam Mohammed Ibn Saud Islamic University, Saudi Arabia) [2021-22]
   **Role:** Part-time Postdoc Researcher (Remote)
3. NeuroAssist: An Intelligent Secure Decision Support System for Prediction of Brain Aneurysm Rupture, (Funded by: Brain Aneurysm Foundation. Oakland University, MI, USA)
   **Role:** Part-time Researcher (Remote)
4. Development of a solution for situation-awareness based on the analysis of speech and environmental sounds (Funded by: National Research Foundation of Korea) [2015-17]
   **Role:** Team Member

## DEVELOPMENT PROJECTS:

1. **Real-Time Face Detection & Recognition**:
   - Used YoloFace, RetinaFace, and MediaPipe for detection.
   - FaceNet, ArcFace, MagFace, and AdaFace for face embeddings.
   - The systems were deployed as a cloud service with a web-based front end.
2. **Real-Time Gait Recognition for Multi-Biometric Tunnel:**
   - Worked on Gait, Face, Ear, Palmprint, and other biometrics for security applications
3. **Disease Progression Detection from Chest X-Rays:**
   - End-to-End framework for disease progression prediction from successive chest X-Rays (CXR).
   - Prepared the dataset, trained/fine-tuned deep-learning models, and achieved excellent results.
   - Published research results in two Q1 journals.
4. **Plant Disease Detection on Smartphone:**
   - Trained a highly efficient deep learning model for disease detection deployment on a smartphone.
   - The model was optimized for mobile deployment and could accurately detect several diseases in Peach, Plum, Apple, Apricot, and Guava from images captured via the smartphone camera using on-device intelligence.
5. **Medical Image Retrieval System for X-Rays, Endoscopy Videos, and other modalities:**
   - Several deep features based efficient image retrieval systems were developed for medical images and videos.
6. **E-Engineering Management System**:
   - A client-server desktop system for managing heavy data, performing analysis, and creating reports was developed for PAF Base Peshawar from Apr-2008 to Feb 2009. (Funded by: Pakistan Air Force, Peshawar)

## MEMBERSHIP IN LEARNED SOCIETIES

5. **Senior Member IEEE Computer Society** (Since 2016)
6. **Member Nvidia DLI University Ambassador Program** (Since 2021)

## RESEARCH INTERESTS

1. Content-based multimedia analysis
2. Precision Agriculture
3. Medical Image Analysis

## PUBLICATION STATISTICS

| Type of Publication | Number of Publications |
|---|---|
| Internal Refereed Journals | 39 |
| Conference Papers | 15 |
| Books/Book Chapters | 1 |
| Patents | 4 |

| Citation Source | Number of Citations |
|---|---|
| Google Scholar [ 🌐 ] | 5100 |
| Scopus [ 🌐 ] | 3448 |
| Web of Science [ 🌐 ] | 2435 |

## JOURNAL PUBLICATIONS

1. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, "*Distilling Knowledge to Efficient Transformer for Semi-Supervised Citrus Maturity Detection in UAV Images*", IEEE Transactions on Consumer Electronics (**Under Review**) (2024)
2. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, *"Leveraging Model Explainability and Fine-Grained Cutmix Augmentation for Robust Detection of Apricot Diseases in UAV Images"* Expert Systems with Applications (**Under Revision**) (2024)
3. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, *"Yield Estimation and Health Assessment of Temperate Fruits: A Unified Framework"* Engineering Applications of Artificial Intelligence (2024) [**SCIE '23 : 7.5 – Q1**]
4. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, *"A Comprehensive Review of Deep Learning for Fruit-Based Disease Detection: From Image Acquisition to Model Deployment"* Computers in Industry (**Under Review**) (2024)
5. Khalil, Abizar, Haleem Farman, Moustafa M. Nasralla, Bilal Jan, and **Jamil Ahmad**. "*Artificial Intelligence-based intrusion detection system for V2V communication in vehicular adhoc networks*." *Ain Shams Engineering Journal* (2024): 102616. [**SCIE '23 : 6.0 – Q1**]
6. Irfan, Muhammad, Khalid Mahmood Malik, **Jamil Ahmad**, and Ghaus Malik. "*StrokeNet: An automated approach for segmentation and rupture risk prediction of intracranial aneurysm.*" Computerized Medical Imaging and Graphics 108 (2023): 102271. [**SCIE '23 : 5.7 – Q1**]
7. **Jamil Ahmad**, Abdul Khader Jilani Saudagar, Khalid Mahmood Malik, Muhammad Badruddin Khan, Abdullah AlTameem, Mohammed Alkhathami, and Mozaherul Hoque Abul Hasanat. 2023. "*Prognosis Prediction in COVID-19 Patients through Deep Feature Space Reasoning*" Diagnostics 13, no. 8: 1387. [**SCIE '22 : 3.992 – Q1**]
8. Muhammad, Wasim, Imran Ahmed, **Jamil Ahmad**, Muhammad Nawaz, Eatedal Alabdulkreem, and Yazeed Ghadi. "*A video summarization framework based on activity attention modeling using deep features for smart campus surveillance system*." **PeerJ Computer Science** 8 (2022): e911. [**SCIE '21 : 1.39 – Q2**]
9. Haleem Farman, **Jamil Ahmad**, Bilal Jan, Yasir Shahzad, Muhammad Abdullah, and Atta Ullah, '*Efficientnet-Based Robust Recognition of Peach Plant Diseases in Field Images*', Computers, Materials & Continua, 71 (2022), 2073--89. [**SCIE '21 : 3.772 – Q1**]
10. **Jamil Ahmad**, Abdul Khader Jilani Saudagar, Khalid Mahmood Malik, et al. "*Disease Progression Detection via Deep Sequence Learning of Successive Radiographic Scans*." International journal of environmental research and public health 19, no. 1 (2022): 480. [**SCIE '21 : 3.390 – Q1**]
11. Zanobya N. Khan, and **Jamil Ahmad**. "*Attention induced multi-head convolutional neural network for human activity recognition*." **Applied Soft Computing** (2021): 107671. [**SCIE '21 : 6.725 – Q1**]
12. Muhammad Wasim, Imran Ahmed, **Jamil Ahmad**, and Mohammad Mehedi Hassan. "*A Novel Deep Learning Based Automated Academic Activities Recognition in Cyber-Physical Systems*." **IEEE Access** 9 (2021): 63718-63728. [**SCIE '21 : 3.367 – Q2**]

13. **Jamil Ahmad**, Bilal Jan, Haleem Farman, Wakeel Ahmad and Atta Ullah, *Disease Detection in Plum using Convolutional Neural Network under True Field Conditions*. **Sensors** 20(19), 5569. **[SCIE '20 : 3.275 – Q1]**
14. Yasir Shahzad, Huma Javed, Haleem Farman, **Jamil Ahmad**, Bilal Jan, and Abdelmohsen-A. Nassani, *Optimized Predictive Framework for Healthcare through Deep Learning*, **Computers, Materials & Continua**, 67 (2021), 2463--80. **[SCIE '20 : 4.89 – Q1]**
15. Yasir Shahzad, Huma Javed, Haleem Farman, **Jamil Ahmad**, Bilal Jan, and Muhammad Zubair. *Internet of energy: Opportunities, applications, architectures and challenges in smart industries*. **Computers & Electrical Engineering** 86 (2020): 106739. **[SCIE '20 : 2.663 – Q2]**
16. **Jamil Ahmad**, Khan Muhammad, Syed Inayat Ali Shah, Arun Kumar Sangaiah, and Sung Wook Baik. *Partially shaded sketch-based image search in real mobile device environments via sketch-oriented compact neural codes*. **Journal of Real-Time Image Processing** 16, no. 1 (2019): 227-240. **[SCIE '19 : 2.588 – Q2]**
17. **Jamil Ahmad**, Khan Muhammad, Imran Ahmad, Wakeel Ahmad, Melvyn L. Smith, Lyndon N. Smith, Deepak Kumar Jain, Haoxiang Wang, Irfan Mehmood: *Visual features based boosted classification of weeds for real-time selective herbicide sprayer systems*. **Computers in Industry** 06/2018; 98(June)., DOI: 10.1016/j.compind.2018.02.005 **[SCIE '18 : 2.691 – Q1]**
18. Nasir Rahim, **Jamil Ahmad**, Khan Muhammad, Arun Kumar Sangaiah, and Sung Wook Baik. *Privacy-preserving image retrieval for mobile devices with deep features on the cloud*. **Computer Communications** 127 (2018): 75-85. **[SCIE '18 : 3.338 – Q1]**
19. Khan Muhammad, **Jamil Ahmad**, Zhihan Lv, Paolo Bellavista, Po Yang, Sung Wook Baik: *Efficient deep CNN-based fire detection and localization in video surveillance applications*. **IEEE Transactions on Systems, Man, and Cybernetics: Systems** 03/2018; **[SCIE '18 : 2.35 – Q1]**
20. Khan Muhammad, **Jamil Ahmad**, Irfan Mehmood, Seungmin Rho, Sung Wook Baik: *Convolutional Neural Networks based Fire Detection in Surveillance Videos*. **IEEE Access** 03/2018; PP (99):1-1., DOI:10.1109/ACCESS.2018.2812835 **[SCIE '18 : 3.224 – Q1]**
21. **Jamil Ahmad**, Khan Muhammad, Sung Wook Baik: *Medical Image Retrieval with Compact Binary Codes Generated in Frequency Domain Using Highly Reactive Convolutional Features*. **Journal of Medical Systems** 02/2018; 42(2)., DOI:10.1007/s10916-017-0875-4 **[SCIE '18 : 2.456 – Q2]**
22. **Jamil Ahmad**, Khan Muhammad, Jaime Lloret, Sung Wook Baik: *Efficient Conversion of Deep Features to Compact Binary Codes using Fourier Decomposition for Multimedia Big Data*. **IEEE Transactions on Industrial Informatics** 01/2018; PP (99):1-1., DOI:10.1109/TII.2018.2800163 **[SCIE '18 : 6.764 – Q1]**
23. Khan Muhammad, Rafik Hamza, **Jamil Ahmad**, Jaime Lloret, Harry Haoxiang Ge Wang, Sung Wook Baik: *Secure Surveillance Framework for IoT systems using Probabilistic Image Encryption*. **IEEE Transactions on Industrial Informatics** 01/2018; PP (99):1-1., DOI:10.1109/TII.2018.2791944 **[SCIE '18 : 6.764 – Q1]**
24. Khan Muhammad, **Jamil Ahmad**, Sung Wook Baik: *Early Fire Detection using Convolutional Neural Networks during Surveillance for Effective Disaster Management*. **Neurocomputing** 12/2017; DOI: 10.1016/j.neucom.2017.04.083 **[SCIE '17 : 3.317 – Q1]**
25. **Jamil Ahmad**, Khan Muhammad, Mi Young Lee, Sung Wook Baik: *Endoscopic Image Classification and Retrieval using Clustered Convolutional Features*. **Journal of Medical Systems** 12/2017; 41(12)., DOI:10.1007/s10916-017-0836-y **[SCIE '17 : 2.456 – Q2]**
26. Amin Ullah, **Jamil Ahmad**, Khan Muhammad, Muhammad Sajjad, Sung Wook Baik: *Action Recognition in Video Sequences using Deep Bi-directional LSTM with CNN Features*. **IEEE Access** 11/2017; PP (99):1-1., DOI:10.1109/ACCESS.2017.2778011 **[SCIE '17 : 3.224 – Q1]**
27. **Jamil Ahmad**, Khan Muhammad, Sambit Bakshi, Sung Wook Baik: *Object-oriented convolutional features for fine-grained image retrieval in large surveillance datasets*. **Future Generation Computer Systems** 11/2017; DOI: 10.1016/j.future.2017.11.002 **[SCIE '17 : 3.997 – Q1]**
28. Abdul Malik Badshah, Nasir Rahim, Noor Ullah, **Jamil Ahmad**, Khan Muhammad, Mi Young Lee, Soonil Kwon, Sung Wook Baik: *Deep features-based speech emotion recognition for smart affective services*. **Multimedia Tools and Applications** 10/2017; DOI:10.1007/s11042-017-5292-7 **[SCIE '17 : 1.53 – Q2]**
29. **Jamil Ahmad**, Khan Muhammad, Sung Wook Baik: *Data augmentation-assisted deep learning of hand-drawn partially colored sketches for visual search*. **PLoS ONE** 08/2017; 12(8):e0183838., DOI:10.1371/journal.pone.0183838 **[SCIE '17 : 2.806 – Q1]**

30. Muhammad Sajjad, Amin Ullah, **Jamil Ahmad**, Naveed Abbas, Seungmin Rho, Sung Wook Baik: *Integrating salient colors with rotational invariant texture features for image representation in retrieval systems*. **Multimedia Tools and Applications** 08/2017; DOI:10.1007/s11042-017-5010-5 **[SCIE '17 : 1.53 – Q2]**
31. **Jamil Ahmad**, Muhammad Sajjad, Irfan Mehmood, Sung Wook Baik: *SiNC: Saliency-injected neural codes for representation and efficient retrieval of medical radiographs*. **PLoS ONE** 08/2017; 12(8): e0181707., DOI: 10.1371/journal.pone.0181707 **[SCIE '17 : 2.806 – Q1]**
32. Haleem Farman, Huma Javed, Bilal Jan, **Jamil Ahmad**, Shaukat Ali, Falak Naz Khalil, Murad Khan: *Analytical network process based optimum cluster head selection in wireless sensor network*. **PLoS ONE** 07/2017; 12(7-7): e0180848., DOI: 10.1371/journal.pone.0180848 **[SCIE '17 : 2.806 – Q1]**
33. **Jamil Ahmad**, Irfan Mehmood, Seungmin Rho, Naveen Chilamkurti, Sung Wook Baik: *Embedded deep vision in smart cameras for multi-view objects representation and retrieval*. **Computers & Electrical Engineering** 06/2017; DOI: 10.1016/j.compeleceng.2017.05.033 **[SCIE '17 : 1.57 – Q2]**
34. Khan Muhammad, **Jamil Ahmad**, Seungmin Rho, Sung Wook Baik: *Image steganography for authenticity of visual contents in social networks*. **Multimedia Tools and Applications** 02/2017; DOI:10.1007/s11042-017-4420-8 **[SCIE '17 : 1.53 – Q2]**
35. **Jamil Ahmad**, Irfan Mehmood, Sung Wook Baik: *Efficient Object-based Surveillance Image Search using Spatial Pooling of Convolutional Features*. **Journal of Visual Communication and Image Representation** 02/2017; 45., DOI: 10.1016/j.jvcir.2017.02.010 **[SCIE '17 : 2.164 – Q2]**
36. Khan Muhammad, **Jamil Ahmad**, Muhammad Sajjad, Sung Wook Baik: *Visual saliency models for summarization of diagnostic hysteroscopy videos in healthcare systems*. **SpringerPlus** 12/2016; 5(1)., DOI:10.1186/s40064-016-3171-8 **[SCIE '16 : 0.982 – Q3]**
37. **Jamil Ahmad**, Muhammad Sajjad, Seungmin Rho, Soon-il Kwon, Mi Young Lee, Sung Wook Baik: *Determining speaker attributes from stress-affected speech in emergency situations with hybrid SVM-DNN architecture*. **Multimedia Tools and Applications** 10/2016; DOI:10.1007/s11042-016-4041-7 **[SCIE '16 : 1.53 – Q2]**
38. Haleem Farman, Huma Javed, **Jamil Ahmad**, Bilal Jan, Muhammad Zeeshan: *Grid-Based Hybrid Network Deployment Approach for Energy Efficient Wireless Sensor Networks*. **Journal of Sensors** 10/2016; 2016(3):1-14., DOI:10.1155/2016/2326917 **[SCIE '16 : 0.712 – Q3]**
39. **Jamil Ahmad**, Muhammad Sajjad, Zahoor Jan, Irfan Mehmood, Seungmin Rho, Sung Wook Baik: *Analysis of interaction trace maps for active authentication on smart devices*. **Multimedia Tools and Applications** 04/2016; 76(3)., DOI:10.1007/s11042-016-3450-y **[SCIE '16 : 1.53 – Q2]**
40. Khan Muhammad, **Jamil Ahmad**, Naeem Ur Rehman, Zahoor Jan, Muhammad Sajjad: *CISSKA-LSB: color image steganography using stego key-directed adaptive LSB substitution method*. **Multimedia Tools and Applications** 04/2016; 76(6)., DOI:10.1007/s11042-016-3383-5 **[SCIE '16 : 1.53 – Q2]**
41. **Jamil Ahmad**, Muhammad Sajjad, Seungmin Rho, Sung Wook Baik: *Multi-scale local structure patterns histogram for describing visual contents in social image retrieval systems*. **Multimedia Tools and Applications** 03/2016; 75(20)., DOI:10.1007/s11042-016-3436-9 **[SCIE '16 : 1.53 – Q2]**
42. **Jamil Ahmad**, Muhammad Sajjad, Irfan Mehmood, Seungmin Rho, Sung Wook Baik: *Saliency-weighted graphs for efficient visual content description and their applications in real-time image retrieval systems*. **Journal of Real-Time Image Processing** 11/2015; DOI:10.1007/s11554-015-0536-0 **[SCIE '15 : 2.01 – Q2]**
43. Khan Muhammad, **Jamil Ahmad**, Haleem Farman, Zahoor Jan, Muhammad Sajjad, Sung Wook Baik: *A Secure Method for Color Image Steganography using Gray-Level Modification and Multi-level Encryption*. **KSII Transactions on Internet and Information Systems** 05/2015; 9(5):1938-1962. **[SCIE '15 : 0.365 – Q4]-**

## PATENTS

1. Sung Wook Baik, **Jamil Ahmad**, Mi Young Lee, Soon-il Kwon, Seok Bong Jeon: *APPARATUS AND METHOD FOR GENDER RECOGNITION OF SPEECH DATA*. Ref. No: 1016584520000, Year: 09/2016 (Registered: **Sejong University - South Korea**)
(Accessible at: http://engpat.kipris.or.kr/engpat/searchLogina.do?next=MainSearch#page1)

2. Sung Wook Baik, Khan Muhammad, **Jamil Ahmad**: *METHOD AND APPARATUS FOR RETRIEVING IMAGE USING CONVOLUTION NEURAL NETWORK*. Ref. No: 1019173690000, Year: 11/2018
(Registered: **Sejong University - South Korea**)
(Accessible at: http://engpat.kipris.or.kr/engpat/searchLogina.do?next=MainSearch#page1)

3. Sung Wook Baik, Mi Young Lee, Kwon Soon Il, Seok Bong Jeon, **Jamil Ahmad**, Khan Muhammad, Ijaz ul Haq, Jun Ryeol Park, *APPARATUS AND METHOD FOR SPEECH EMOTION RECONGNITION USING A REASONING PROCESS*. Ref. No: 1020319540000, Year: 10/2019
(Registered: **Sejong University - South Korea**)
(Accessible at: http://engpat.kipris.or.kr/engpat/searchLogina.do?next=MainSearch#page1)

4. Yun-Young Nam, Seungmin Rho, Muhammad Sajjad, Irfan Mehmood, Tanveer Hussain, **Jamil Ahmad**, Khan Muhammad, *DEVICE AND METHOD FOR COMMUNICATION FOR THE DEAF PERSON*. Ref. No: 1020115950000, Year: 08/2019
(Registered: **Sejong University - South Korea**)
(Accessible at: http://engpat.kipris.or.kr/engpat/searchLogina.do?next=MainSearch#page1)

## CONFERENCE PROCEEDINGS

1. **Jamil Ahmad**, Abdulmotaleb Elsaddik, Wail Gueaieb, Giulia De Masi, Fakhri Karray, "*AG-CLIP: Attribute-guided CLIP for zero-shot fine-grained recognition*", British Machine Vision Conference (BMVC) [**Submitted**] (2024)
2. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, "*Knowledge-Infused Learning for Fine-Grained Plant Disease Recognition*", 2024 IEEE International Conference on Image Processing (ICIP) (**Accepted**) (2024)
3. Mustaqeem Khan, **Jamil Ahmad**, Abdulmotaleb Elsaddik, Wail Gueaieb, Giulia De Masi, Fakhri Karray, "*Drone-HAT: Hybrid Attention Transformer for Complex Action Recognition in Drone Surveillance Videos"*, IEEE Conference on Computer Vision and Pattern Recognition Workshop (CVPRW) (**Accepted**) (2024)
4. **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, Giulia De Masi, Fakhri Karray, "*Enabling Consumer UAVs for Precision Agriculture Applications: A Case Study of Yield Estimation*", 2024 IEEE International Conference on Consumer Electronics (ICCE)
5. Mustaqeem Khan, **Jamil Ahmad**, Wail Gueaieb, Abdulmotaleb Elsaddik, "*Skin-Former: Mobile-Friendly Transformer for Skin Lesion Diagnosis*", 2024 IEEE International Conference on Consumer Electronics (ICCE)
6. Amin Ullah, **Jamil Ahmad**, Khan Muhammad, Irfan Mehmood, Mi Young Lee, Jun Ryeol Park, and Sung Wook Baik. *Action recognition in movie scenes using deep features of keyframes*. J. Korean Inst. Next Generation Comput. 13 (2017): 7-14. **[Best Paper Award]**
7. Amin Ullah, **Jamil Ahmad**, Mi Young Lee, Jin-Taek Kim, Sung Wook Baik: *Face Detection using Selected Feature Maps from a Pre-trained CNN*. The 3rd International Conference on Next Generation Computing (ICNGC2017b), December 21~24, 2017, Kaohsiung, Taiwan; 12/2017
8. Amin Ullah, **Jamil Ahmad**, Khan Muhammad, Mi Young Lee, Byungseok Kang, Oh Beom Soo, Sung Wook Baik: *A Survey on Precision Agriculture: Technologies and Challenges*. The 3rd International Conference on Next Generation Computing (ICNGC2017b), December 21~24, 2017, Kaohsiung, Taiwan; 12/2017
9. Abdul Malik Badshah, **Jamil Ahmad**, Nasir Rahim, Sung Wook Baik: *Speech Emotion Recognition from Spectrograms with Deep Convolutional Neural Network*. 2017 International Conference on Platform Technology and Service (PlatCon); 02/2017, DOI:10.1109/PlatCon.2017.7883728
10. Abdul Malik Badshah, **Jamil Ahmad**, Mi Young Lee, Sung Wook Baik: *Divide-and-Conquer based Ensemble to Spot Emotions in Speech using MFCC and Random Forest*. The 2nd International Integrated Conference & Concert on Convergence, Saint Petersburg State University of Industrial Technologies and Design, Russia; 10/2016
11. **Jamil Ahmad**, Khan Muhammad, Soon-il Kwon, Sung Wook Baik, Seungmin Rho: *Dempster-Shafer Fusion Based Gender Recognition for Speech Analysis Applications*. 2016 International Conference on Platform Technology and Service (PlatCon); 02/2016, DOI:10.1109/PlatCon.2016.7456788

12. Khan Muhammad, **Jamil Ahmad**, Muhammad Sajjad, Seungmin Rho, Sung Wook Baik: *Evaluating the Suitability of Color Spaces for Image Steganography and Its Application in Wireless Capsule Endoscopy*. 2016 International Conference on Platform Technology and Service (PlatCon); 02/2016, DOI:10.1109/PlatCon.2016.7456799
13. Mustansar Fiaz, **Jamil Ahmad**, Khan Muhammad, Mi Young Lee, Jae Hyung Jung, Bon Woo Gu, Jin Woo Choi, Jun Ryeol Park, Jeong Won Lee, Ram Jung, Sung Wook Baik: *Introduction of Virtual Fitness (ViFi) Platform with Realistic Contents*. ECBA- 2015, Bankok, Thailand; 09/2015
14. **Jamil Ahmad**, Muhammad Sajjad, Irfan Mehmood, Sung Wook Baik: *SSH: Salient Structures Histogram for Content Based Image Retrieval*. 18th IEEE International Conference on Network-Based Information Systems (NBIS 2015), Taipei, Taiwan; 09/2015, DOI:10.1109/NBiS.2015.36
15. Khan Muhammad, Irfan Mehmood, Muhammad Sajjad, **Jamil Ahmad**, Joon Yoo, Dongil Han, Sung Wook Baik: *Secure Visual Content Labeling for Personalized Image Retrieval*. Multimedia Information Technology and Applications (MITA 2015), Tashkent, Uzbekistan; 07/2015, DOI:10.13140/RG.2.1.3900.7206

## BOOK CHAPTERS

1. **Jamil Ahmad**, Haleem Farman, and Zahoor Jan. "*Deep learning methods and applications*." Deep learning: convergence to big data analytics (2019): 31-42. [Cited 140+ times]

## RESEARCH SUPERVISION

**Ph.D.**

- **Muhammad Wasim**, Activity Attention Modeling for Summarization in Multi–Camera Campus Surveillance Videos (Graduated 2022)
- **Mansoor Nasir,** Towards AI-enabled Economical IoT Devices for Actionable Intelligence in Multimedia Surveillance Networks (Thesis Submitted)
- **Noreen Fayyaz,** Fine-Grained Recognition of Violence in Animated Videos (In Progress)
- **Attiq ur Rehman,** Robust Detection of Plant Diseases in Field Conditions (in progress)

**MS/MPhil**

- **Altaf Hussain**, Intelligent Camera Prioritization in Large Scale Surveillance Network using Violent Activity Recognition with 3D CNN (graduated, now pursuing Ph.D. at Sejong University, South Korea)
- **Adnan Hussain,** A Comprehensive Study on Deep Active Learning Based Wild Animal Classification Method for Camera Trap (graduated, now pursuing Ph.D. at Sejong University, South Korea)
- **Nasir Syed,** Learning Image Representation Using Siamese Neural Network for Image Retrieval Applications (graduated)
- **Said Nawaz**, Deep Learning based Detection and Recognition of Pakistani License Plates for Traffic Surveillance Applications (graduated)
- **Sara Sualiheen**, Attribute-Based Recommendation of Fashion Accessories by Analyzing Image Contents (graduated, now pursuing Ph.D. at Inha University, South Korea)
- **Burhan Ullah**, A study of deep learning methods for masked face detection & Recognition (graduated)
- **Tariq Hussain**, Learning Convolutional Hash Codes for Endoscopic Image Retrieval (graduated)
- **Bilal Khan,** Content based retrieval of x-ray scans utilizing visual saliency and deep features (graduated)
- **Wajid Khan,** Signature verification using efficient convolutional neural network (graduated)
- **Farhat Ullah**, Development of Efficient Traffic Road Sign detection and Recognition Method for Driver Assistance System (graduated)

## SCHOLARSHIPS & AWARDS:

- Fully funded scholarship for Ph.D. at Sejong University, Seoul, South Korea (Availed)
- Fully funded scholarship for Ph.D. offered by TWAS-CNPq (Brazil) at Federal University of Rio De Janeiro in 2015 (Not Availed)
- Fully funded scholarship for Ph.D. offered by PEC-PG (Federal University of Rio de Janeiro) Brazil (Not Availed)
- Partially funded Scholarship offered by the Scientific and Technological Research Council of Turkey (TUBITAK) for Ph.D. studies in Turkey 2015 (Not Availed)
- Fully funded studentship offered by King Fahd University of Petroleum and Minerals (Saudi Arabia) for Ph.D. studies in 2015 (Not Availed)
- 75% Fee waiver Scholarship during BCS (maintained a top position for all semesters in a batch of 100+ students)
- Alumni Association Scholarship awarded on a merit basis during BCS

## SEMINARS/WORKSHOPS/CONFERENCES ATTENDED:

- NVIDIA DLI Workshop on Fundamentals of Deep Learning for Computer Vision, Aug, 2019
- 3rd International Conference on Next Generation Computing (ICNGC-2017), Kaohsiung, Taiwan
- One day seminar on Technology Development Fund (Organized by: HEC) 2018
- IEEE International Conference on Platform Technology & Service (PlatCon-2017), Jeju, South Korea
- One day workshop of Quality Assurance (Organized by: Quality Enhancement Cell, ICP) 2014
- Two-day workshop on Learning Outcomes (Organized by: HEC) 2013

## REFERENCES:

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