Sareer Ul Amin

Prospective Candidate for Ph.D. in AI for Robotics ·
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Research Interests

AI & Computer Vision Advanced Machine Learning, Deep Learning, Anomaly Detection in Surveillance Video, Video Analysis, Medical Image Analysis, Activity Recognition, Image Processing, Object Detection, and Semantic Segmentation

Education

Master's Degree | CGPA : 4.18/4.5 (92.4%) *Mar. 2022 - Feb. 2024*
Chung-Ang University (CAU) *Seoul, Republic of Korea*
Department of Computer Science and Engineering
Thesis Title and Related Paper: An Efficient Attention-Based Strategy for Anomaly Detection in Surveillance Video
Research Field: Chung-Ang University Young Scientist (CAYSS) Scholar at Graphics Realization Lab, CAU, with research interests in Anomaly Detection in Surveillance Video, Active Learning, Activity Recognition, and Medical Images Analysis.

Bachelor of Science in Computer Science | CGPA : 3.62/4.0 (90%) *Aug. 2016 - Sept. 2020*
Islamia College Peshawar (ICP) *Peshawar, Pakistan*
Department of Computer Science
Thesis Title and Related Paper: EADN: An Efficient Deep Learning Model for Anomaly Detection in Videos
Research Field: Anomaly Detection in Video, Violence Activity Recognition, and Facial Expression Recognition.

Work Experience

Research Associate *Mar. 2024 - Feb 2025*
Graphics Realization Lab, Department of Computer Science and Engineering, Chung-Ang University *Seoul, Republic of Korea*
In this position, I conduct research, analyze data, write papers, manage projects, assist students, collaborate with researchers, and occasionally teach, preparing for a Ph.D. or an industry career.

Research Assistant *Mar. 2022 - Feb 2024*
Graphics Realization Lab, Department of Computer Science and Engineering, Chung-Ang University *Seoul, Republic of Korea*
Research and development of various industrial and research projects.

Lab Coordinator *Mar. 2021 - Feb. 2022*
Digital Image Processing Lab, Dept. of Computer Science, Islamia College Peshawar *Khyber Pakhtunkhwa, Pakistan*
In this role, I effectively managed Computer Vision projects, mentored students, collaborated with professors for lectures, provided instructional support, and helped students achieve their academic goals.

Research Assistant *Sept. 2018 - Mar. 2021*
Digital Image Processing Lab, Dept. of Computer Science, Islamia College Peshawar *Khyber Pakhtunkhwa, Pakistan*
Working on Computer Vision related research.

Academic Activity

Peer Review Records

- Expert Systems with Applications (Elsevier)
- Neurocomputing (Elsevier)
- Engineering Applications of Artificial Intelligence (Elsevier)
- International Journal of Applied Earth Observation and Geoinformation (Elsevier)

- IEEE Transactions on Neural Networks and Learning Systems (IEEE)
- Artificial Intelligence Review (Springer)
- Pattern Analysis and Applications (Springer)
- Scientific Reports(Springer)
- Pattern Analysis and Applications (Springer)
- Signal, Image and Video Processing (Springer)

Technical Skills

Research writing and visualization	[Expert]	Microsoft Word
	[Expert]	Microsoft Power Point
	[Intermediate]	Origin-pro
Deep learning frameworks	[Used]	TensorFlow (Neural networks, etc)
	[Used]	Keras
	[Pytorch]	Will explore in future
Programming and development skills	[Expert]	Python (OpenCV, Numpy, Scikit-learn, Pandas,Matplotlib)
	[Worked]	MATLAB (Image Processing), Anaconda Python, Jupyter notebook, Spyder, Latex, Code Ocean Capsule, and Kaggle.
	[Studied]	C++, JAVA

Participated Projects

#	Position	Project Title/Details	Funding Agency
1	Researcher	Development of Digital Quarantine and Operation Technologies for Creation of Safe Viewing Environment in Cultural Facilities	Korea Creative Content Service (Kocca, Korea Creative Content Agency)
2	Researcher	Developing System for Operating Unmanned Aerial Vehicle which aims at Automatic Monitoring Forest Disease	Korea Forest Service (KFS, Korea Forestry Promotion Agency)
3	Researcher	Development of digital quarantine and operation technology to create a safe viewing environment for cultural facilities	Electronics and Telecommunications Research Institute (ETRI)

Peer-Reviewed Journal Publications

Harnessing Synthetic Data for Enhanced Detection of Pine Wilt Disease: A Deep Learning Approach
Computers and Electronics in Agriculture
Yonghoon Jung, Sanghyun Byun, Bumsoo Kim, **Sareer Ul Amin**, and Sanghyun Seo*
Published: February 2024
[IF : 8.3, Rank Q1]

An Automated Chest X-Ray Analysis for COVID-19, Tuberculosis, and Pneumonia Employing Ensemble Learning Approach
Biomedical Signal Processing and Control
Sareer Ul Amin, Sher Taj, Adnan Hussain, and Sanghyun Seo*
Published: January 2024
[IF : 5.1, Rank Q1]

An Automated Chest X-Ray Image Analysis for Covid-19 and Pneumonia Diagnosis using Deep Ensemble Strategy
IEEE Access
Adnan Hussain, **Sareer Ul Amin**, Hunjoo Lee, Asma Khan, Noreen Fayyaz Khan, and Sanghyun Seo*
Published: September 2023
[IF : 3.9, Rank Q2]

Deep learning based active learning technique for data annotation and improve the overall performance of classification models
Expert Systems with Applications
Sareer Ul Amin, Adnan Hussain, Bumsoo Kim, and Sanghyun Seo*
Published: May. 2023
[IF : 8.66, Rank Q1]

An Efficient Attention-Based Strategy for Anomaly Detection in Surveillance Video

Computer Systems Science and Engineering

Sareer Ul Amin, Yongjun Kim, Irfan Sami, Sangoh Park*, and Sanghyun Seo*

Published: April. 2023

[IF : 4.397, Rank Q1]

EADN: An Efficient Deep Learning Model for Anomaly Detection in Videos

Mathematics

Sareer Ul Amin, Mohib Ullah, Muhammad Sajjad*, Faouzi Alaya Cheikh, Mohammad Hijji, Abdulrahman Hijji, and Khan Muhammad*

Published: May. 2022

[IF : 2.592, Rank Q1]

An Efficient and Robust Hand Gesture Recognition System of Sign Language Employing Finetuned Inception-V3 and Efficientnet-B0 Network

Computer Systems Science and Engineering

Adnan Hussain, **Sareer Ul Amin**, Muhammad Fayaz, and Sanghyun Seo*

Published: April. 2023

[IF : 4.397, Rank Q1]

Convergence Enhancement of Super-Twisting Sliding Mode Control Using Artificial Neural Network for DFIG-Based Wind Energy Conversion Systems

IEEE Access

Irfan Sami, Shafaat Ullah, **Sareer Ul Amin**, Ahmed Al-Durra, Nasim Ullah, and Jong-Suk Ro*

Published: Sept. 2022

[IF : 3.9, Rank Q2]

Serious Games in Science Education. A Systematic Literature Review

Virtual Reality & Intelligent Hardware

Mohib Ullah*, **Sareer Ul Amin**, Muhammad Munsif, Utkurbek Safaev, Habib Khan, Salman Khan, and Habib Ullah

Published: June. 2022

Enhanced anomaly detection in pandemic surveillance videos: An attention approach with EfficientNet-B0 and CBAM integration

IEEE Access

Sareer Ul Amin, Muhammad Sibtain Abbas, Bumsoo Kim, Yonghoon Jung, and Sanghyun Seo*

Published: 2024

[IF : 3.4, Rank Q2]

The Detection of Violent Scenes in Cartoon Movies Using Deep Learning Approach

IEEE Access

Noreen Fayyaz Khan, **Sareer Ul Amin**, Zahoor Jan, Changhui Yan*

Published: 2024

[IF : 3.4, Rank Q2]

Video Anomaly Detection Utilizing Efficient Spatiotemporal Feature Fusion with 3D Convolutions and LSTM Modules

Advanced Intelligent Systems

Sareer Ul Amin, Bumsoo Kim, yonghoon Jung, Sanghyun Seo*, and Sangoh Park*

Published: 2024

[IF : 7.4, Rank Q1]

Spatially Aware Fusion in 3D Convolutional Autoencoders for Video Anomaly Detection

IEEE Access

Asim Niaz1, **Sareer Ul Amin**, Shafiullah Soomro, Hamza Zia1, and Kwang Nam Choi*

Published: 2024

[IF : 3.4, Rank Q2]

Peer-Reviewed Journal Article in Process

Enhancing Speech Emotion Recognition with a Spatial-Temporal Attention-Based Network

Biomedical Signal Processing and Control

Sareer Ul Amin, Sher Taj, Muhammad Fayaz, Hamad Aziz Khan, and Sanghyun Seo*

Under Review

[IF : 4.9, Rank Q1]

A Comprehensive Approach for Image Quality Assessment Using Quality-Centric Embedding and Ranking Networks

Pattern Recognition

Sareer Ul Amin, Zeeshan Ali Haider, Muhammad Fayaz, Fida Muhammad Khan, Hyeonjoon Moon, and Sanghyun Seoe,*

Under Review

[IF : 7.5, Rank Q1]

Generalizing Anomaly Detection in Medical Imaging through Visual-Language Model Adaptation

Computers in Biology and Medicine

Muhammad Fayaz, **Sareer Ul Amin**, Sher Taj, L. Minh Dang, Tan N. Nguyen, and Hyeonjoon Moona,*

Under Review

[IF : 7.0, Rank Q1]

Enhancing Pine Wilt Disease Detection with Synthetic Data and External Attention-Based Transformers

Engineering Applications of Artificial Intelligence

Sareer Ul Amin, Yonghoon Jung, Muhammad Fayaz, Bumsoo Kim, and Sanghyun Seod,*

Under Review

[IF : 7.5, Rank Q1]

Conferences Attended

2022	**An attention Based Deep Learning Approach for Video Anomaly Detection**, Platcon2022 (ETRI2021)	*Jeju Island, Republic of Korea*
2022	**Detection of Pine Wilt Disease Using Lightweight Deep Learning Algorithms**, Platcon2022 (KFS2021)	*Jeju Island, Republic of Korea*
2023	**Minecraft-ify: Minecraft Style Image Generation with Text-guided Image Editing for In-Game Application**, NeurIPS 2023 Workshop on Machine Learning for Creativity and Design (NRF)	*New Orleans, US*

Honors & Awards

2022-2024	**CAYSS Scholar**, Chung-Ang University Young Scientist Scholarship (CAYSS) award.	*Seoul, S. Korea*
2023	**Research Grant**, Research funding support by Korea Government Ministry of Science and ICT (MSIT) under the National Research Foundation of Korea (NRF) grant.	*Seoul, S. Korea*
2023	**Research Grant**, Research funding support by the Ministry of Culture, Sports, and Tourism under the Korea Creative Content Agency's Culture Technology R&D Program.	*Seoul, S. Korea*
2019	**Laptop Award**, Prime Minister's Youth Program.	*Pakistan*

References

Prof. Mucheol Kim — *Seoul, Republic of Korea*

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Department of Computer Science and Engineering
Chung-Ang University
Email: kimm@cau.ac.kr

Prof. Sanghyun Seo — *Seoul, Republic of Korea*

Graphics Realization Laboratory (GR Lab)
Department of Computer Science and Engineering
Chung-Ang University
Email: sanghyun@cau.ac.kr