Ishaq Muhammad

Home : Jiho-ro, Jisan Dong, 61445, Gwangju, South Korea

Email: ishaq279@gmail.com **Phone:** (+82) 01049858703

Date of birth: 01/04/1999 **Nationality:** Pakistani

ABOUT ME

A dedicated master's graduate with a strong background in computer vision, deep learning, and medical imaging. Experienced in advanced deep learning models, such as transformers, CNNs, Diffusion Models particularly in developing innovative solutions for medical image classification. Skilled in research, and data analysis, with a passion for advancing healthcare technologies through AI. Looking for an opportunity to further explore cutting-edge techniques in medical imaging and contribute to impactful research.

WORK EXPERIENCE

Chosun University

City: Gwangju | **Country:** South Korea

[01/09/2023 – 22/08/2025] **Research Assistant**

Solid foundation in state-of-the-art computer vision and deep learning models
Hands-on experience working with Transformers architectures
Hands-on experience in medical image classification and detection
Skilled in developing and optimizing deep learning architectures for visual recognition
Proficient in Python and PyTorch; capable of adapting models in TensorFlow
Strong experience in collaborative research, benchmarking, and experimental analysis
Contributed significantly to manuscript writing and scientific communication
Excellent academic writing, critical thinking, and problem-solving skills

University of Peshawar

City: Peshawar | **Country:** Pakistan

[01/02/2023 – 08/08/2023] **Research Assistant**

Wireless Sensing Networks

Developing Machine Learning Model for Missing Data Imputation

Anomaly Detection

Python

REBLUE Software Company

City: Peshawar, Pakistan | **Country:** Pakistan

[01/06/2022 – 01/02/2023] **Machine Learning Intern**

Understanding of Machine Learning

Image Processing

Image Classification

Data Preprocessing

Breast Cancer Detection

Python, Scikit-learn, NumPy

EDUCATION AND TRAINING

[01/09/2023 – 22/08/2025]

Masters in Information and Communication Engineering

Chosun University

City: Gwangju | **Country:** South Korea | | **Final grade:** 4.19/4.50 | **Thesis:** A Study on A Dual-Path Deep Learning Framework for Multi-Scale Hip Fracture Classification from X-rays

[01/10/2018 – 24/08/2022]

Bachelor Studies in Computer Science

University of Peshawar uop.edu.pk

Address: Peshawar, 25000, Peshawar, Pakistan | | **Final grade:** CGPA 3.94/4.0 (Distinction) | **Thesis:** Training Agents with Deep Reinforcement Learning using Game AI 3D Environments

LANGUAGE SKILLS

Mother tongue(s): Pashto , Urdu

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Computer Vision | Image Classification | Deep Learning | Machine Learning | Python | Data Preprocessing | Data Visualization | Manuscript Writing | Strong Written and Communication Skills

Frameworks and tools

PyTorch | Tensorflow | Numpy | Huggingface | Transformers | Jupyter Notebook | timm | CUDA | Sci-kit learn | OpenCV

PUBLICATIONS

[2025]

A Hybrid Attention-Driven Deep Learning Model for Osteoporosis Detection in Knees

Reference: I. Muhammad and B. Lee, "A Hybrid Attention-Driven Deep Learning Model for Osteoporosis Detection in Knees," 2025 International Conference on Artificial Intelligence in Information and Communication (ICAIIC), Fukuoka, Japan, 2025, pp. 1043-1046

Authors: Ishaq Muhammad, Bumshik Lee* | **Publisher**: IEEE Xplore

[2025]

Multi-level Feature Enhancement and Dual Attention Mechanisms for Improved Osteoporosis Diagnosis

Authors: Routhu Srinivasa, Ishaq Muhammad, and Bumshik Lee | **Journal Name**: Neurocomputing

[2024]

BONE-Net: A Novel Hybrid Deep Learning Model for Effective Osteoporosis Detection

Reference: Ishaq Muhammad et al., PLOS One, accepted with minor revision

[2025]

A Dual-Path Deep Learning Framework for Multi-Scale Hip Fracture Classification from X-rays

Reference: Ishaq Muhammad et al., Engineering Applications of Artificial Intelligence, In Revision

[2025] **FTAM-Net: A Feature Transformer with Adaptive Multi-Scale Refinement Network for Osteoarthritis Classification**

Reference: Routhu Srinivasa and Ishaq Muhammad et al. Engineering Applications of Artificial Intelligence, In Revision

CONFERENCES AND SEMINARS

[25/04/2025 – 26/04/2025] **Korean Institute of Intelligent Systems, KIIS Spring Conference, 2025** Gumi, South Korea

Oral Presentation

Paper Title: **Dual-EfficientNet Framework for Multi-Scale Gastrointestinal Disease Classification**

[17/10/2024 – 18/10/2024] **The 34th Artificial Intelligence Signal Processing Conference, 2024**
Seoul, South Korea

Poster Presentation

Paper Title: **A Deep Learning Approach for Effective Osteoporosis Detection in Knees**

[19/06/2024 – 22/06/2024] **Korea Institute of Communications and Information Sciences, KICS Summer Conference, 2024**
Jeju-Du, South Korea

Oral Presentation

Paper Title: **Classification of Bone Abnormalities in MURA**

[19/04/2024 – 21/04/2024] **Korea Institute of Intelligent Systems, KIIS Spring Conference, 2024** Seoul, South Korea

Oral Presentation

Paper Title: **Medical Image Segmentation using Diffusion Models**

RECOMMENDATIONS

Name: Dr Arif Ullah Research Fellow

Queen's University Belfast, Northern Ireland

Former Assistant Professor, Department of Information and Communication Engineering,

Chosun University, South Korea

Email: a.ullah@qub.ac.uk

Link: https://arifkhaan.github.io/

Name: Dr. Routhu Srinivasa Rao Postdoctoral Researcher

Chosun University, South Korea

Associate Professor, Dept of CSE, GIT GITAM (Deemed to be University)

Rushikonda, Visakhapatnam-530045, Andhra Pradesh, India

Email: routh.srinivas@chosun.ac.kr

Link: https://scholar.google.com/citations?user=1X_WI3UAAAAJ&hl=en&oi=ao

AWARDS

[01/09/2023 – 22/08/2025] **Chosun University Foreign Excellence Scholarship**

Best Paper Award, IEIE 34th AI Conference, Seoul, South Korea

Distinction Certificate for maintaining highest CGPA

Distinction Certificate for Inter Semester AI quiz Competition