

Abdul Rehman Khan

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Education

MS in Computer Science (Ongoing)

Nov. 2021 - Oct. 2023

Pakistan Institute of Engineering and Applied Sciences

Islamabad, Pakistan

CGPA: 4.00

In research-based thesis work, I explored Hybrid CNN-Transformer approaches and was able to achieve multiple publishable results.

BS in Computer and Information Sciences

Sep. 2017 - Jul. 2021

Pakistan Institute of Engineering and Applied Sciences

Islamabad, Pakistan

CGPA: 3.87 (Gold Medalist)

In thesis project, I improved Mask-RCNN for Lymphocyte Detection in histopathological images

Intermediate

Sep. 2015 - Jun. 2017

Punjab College of Sciences

Gujranwala, Pakistan

Intermediate in Pre-Engineering major with 93% Grades

Matriculation

Sep. 2013 - Jun. 2015

St. Joseph's English High School

Gujranwala, Pakistan

Matriculation in Computer Science major with 90% Grades

Technical Skills

Programming

Python, Matlab, Java, C, C++, Javascript

Python Libraries

PyTorch, Tensorflow, Keras, Opencv-Python, Scikit-Learn, Matplotlib, Seaborn, Pandas, Numpy

Software Development

Databases (SQL, Mongo, Firebase), Web Development, Android Development

Typesetting & Drawing

LaTeX, Microsoft Office, Draw.io

Languages

Urdu (Native), English (TOEFL: 96)

Publications

- [1] Ali, M. Liaqat, **Khan, A. Rehman**, Khan, A. *, et al. "Channel boosting based detection and segmentation for cancer analysis in histopathological images." *19th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, IEEE, 2022. [\[Link\]](#)
- [2] Zafar, Muhammad Mohsin, **Khan, A. Rehman**, Khan, A. *, et al. "Detection of tumour infiltrating lymphocytes in CD3 and CD8 stained histopathological images using a two-phase deep CNN." *Photodiagnosis and Photodynamic Therapy*, 37 (2022): 102676. [\[Link\]](#)
- [3] Khan, A. T. *, **Khan, A. Rehman**, Li, S., et al. "Optimally configured gated recurrent unit using hyperband for the long-term forecasting of photovoltaic plant." *Renewable Energy Focus*, 39 (2021): 49-58. [\[Link\]](#)
- [4] **Khan, A. Rehman**, Khan, A. T. *, Salik, M., Bakhsh, S. "An optimally configured HP-GRU model using hyperband for the control of wall following robot." *Int. J. Robot. Control Syst*, 1.1 (2021): 66-74. [\[Link\]](#)

Projects

Medical Image Segmentation using Hybrid CNN-Transformer Techniques

MS Thesis Project

Exploited drawbacks in CNN-only and Transformer-only techniques and proposed various hybrid CNN-Transformer ideas, achieving several publishable results.

Lymphocyte Detection using Mask-RCNN

BS Thesis Project

On the research side, I exploited Mask-RCNN for Lymphocyte Detection. On the development side, I developed a web interface to facilitate pathologists in lymphocyte detection. [\[Link\]](#)

Blood Cell Classification using Resnet

Semester Project

Performed Blood Cell classification using Resnet in PyTorch on an open-source dataset. [\[Link\]](#)

Person Detection and Counting in video using Tensorflow

Semester Project

Performed Person detection and counting task in video frames using MobileNet in TensorFlow python.

Awards and Honors

Jul. 2021	Gold Medal: “First Position in BS Computer and Information Science Degree”	<i>Islamabad</i>
Feb. 2017	National Physics Talent Contest: “Among Top 25 Participants”	<i>Islamabad</i>
Nov. 2016	National Science Talent Contest: “Among Top 50 Participants”	<i>Islamabad</i>

Volunteer Services

WEB MASTER

PIEAS, Islamabad

IEEE Student Branch

Aug. 2020 - Mar. 2021

Served as a member of the executive team at IEEE PIEAS student branch.

Volunteer in IEEE PSYWSC'18, IEEE WIE ILS'19 and TedX PIEAS'19

PIEAS, Islamabad

IEEE Student Branch

Aug. 2018 - Nov. 2019

Head Web-Team in PSYWSC and TedX AND Member Executive Committee in IEEE WIE ILS.