

Sajid Gul Khawaja

Associate Professor
College of Electrical & Mechanical Engineering
Email: sajid.gul@ceme.nust.edu.pk
Contact: 0518749822
LinkedIn: www.linkedin.com/in/sajid-gul-khawaja



About

Dr. Sajid Gul Khawaja is working as Associate Professor in the College of Electrical & Mechanical Engineering. Dr. Sajid Gul Khawaja has a PhD in Digital System Design. Dr. Sajid Gul Khawaja has published 54 research articles & conference papers having a citation count of 497, carried out 5 projects and filed 15 intellectual property.

Qualifications

PhD in Digital System Design NUST, Islamabad , Pakistan	2011 - 2017
MS in Digital Signal Processing NUST, Islamabad , Pakistan	2009 - 2011
BE in Cptr Sys Engg NUST, Islamabad , Pakistan	2006 - 2009

Experience

Associate Professor College of Electrical & Mechanical Engineering	2024- Present
Associate Professor College of Electrical & Mechanical Engineering	2024 - 2024
Associate Professor College of Electrical & Mechanical Engineering	2021 - 2009
Assistant Professor College of Electrical & Mechanical Engineering	2014 - 2024
Lecturer College of Electrical & Mechanical Engineering	2011 - 2011
Lab Engineer College of Electrical & Mechanical Engineering	2011 - 2014
Lab Engineer College of Electrical & Mechanical Engineering	2009 - 2011

Awards

Community Service Teacher	2017
Best Teacher Award	
School / College Best Researcher Award -2022	

Professional Memberships

PEC

Research Projects

National Projects

HearSmart Funding Agency: IGNITE Amount: PKR 77,095.00 Status: Completed	2019
EPIC- A Wearable Epilepsy Monitoring Device Funding Agency: HEC Amount: PKR 12,440,000.00 Status: Completed	2019
Robust Communication Solution for Drone Swarm based Patrolling Operations Funding Agency: HEC Amount: PKR 82,571,295.00 Status: Approved_inprocess	2022
Study of RISC-V Architecture Funding Agency: NESCOM Amount: PKR 100,000.00 Status: Approved_inprocess	2022
EPIC-A wearable Epilepsy monitoring device Funding Agency: HEC Amount: PKR 9,515,675.00 Status: Completed	2019

International Projects

Research Articles

Radiology report generation from a singular perspective using transformers with Knowledge Distillation Asad Mansoor Khan Mashood mohammad Mohsan Muhammad Usman Akram Taimur Hassan Sajid Gul Khawaja Adil Qayyum Biomedical Signal Processing and Control , Volume:111, Article Number 108340 Impact Factor: 4.900 Quartile: 2 DOI: https://doi.org/10.1016/j.bspc.2025.108340	2026
PHARFF: A Pipeline-Based Graceful Live Migration and Checkpointing Framework for Achieving High Availability and Reliability in FPGA Applications on Cloud Sajid Gul Khawaja Muhammad Usman Akram Muhammad Asad Shoab Ahmad Khan Alina Mirza Yame Asfia IEEE Access , Volume:13, Pages 63203-63218 Impact Factor: 3.400 Quartile: 2 DOI: 10.1109/ACCESS.2025.3557303	2025
Insights from EEG Analysis of Evoked Memory Recalls Using Deep Learning for Emotion Charting Muhammad Najam Dar Muhammad Usman Akram Ahmad Rauf Subhani Sajid Gul Khawaja Constantino Carlos Reyes-Aldasoro Sarah Gul Scientific Reports , Volume 14, Article Number: 17080 Impact Factor: 3.800 Quartile: 1 Citations: 2 DOI: https://doi.org/10.1038/s41598-024-61832-7	2024
Dual contrastive learning based image-to-image translation of unstained skin tissue into virtually stained H&E images Muhammad Zeeshan Asaf Babar Rao Muhammad Usman Akram Sajid Gul Khawaja Samavia Khan Thu Minh Truong Palveen Sekhon Irfan J. Khan Muhammad Shahmir Abbasi Scientific Reports , Volume 14, Article Number: 2335 Impact Factor: 3.800 Quartile: 1 Citations: 12 DOI: https://doi.org/10.1038/s41598-024-52833-7	2024
An incremental noise constrained LMS algorithm Sajid Gul Khawaja Usman Hameed Muhammad Omer Bin Saeed Azzedine Zerguine Oualid Hammi Signal Processing , Volume 213, Article Number 109187 Impact Factor: 4.4 Quartile: 2 Citations: 7 DOI: https://doi.org/10.1016/j.sigpro.2023.109187	2023

Multi-head deep learning framework for pulmonary disease detection and severity scoring with modified progressive learning <i>Asad Mansoor Khan Muhammad Usm Sajid Nazir Taimur Hassan Sajid Gul Khawaja Tatheer Fatima</i> <i>Biomedical Signal Processing and Control</i> , Volume 85, Article Number 104855 Impact Factor: 5.076 Quartile: 2 Citations: 4 DOI: https://doi.org/10.1016/j.bspc.2023.104855	2023
Analysis of EEG signals using deep learning to highlight effects of vibration-based therapy on brain <i>Syeda Noor-Ul-Huda Saferder Muhammad Usman Akram Muhammad Najam Dar Aliya Ashraf Khan Sajid Gul Khawaja Ahmad Rauf Subhani Imran Khan Niazi Sarah Gul</i> <i>Biomedical Signal Processing and Control</i> , Volume 83, Article Number 104605 Impact Factor: 5.076 Quartile: 2 Citations: 5 DOI: https://doi.org/10.1016/j.bspc.2023.104605	2023
EEG-based emotion charting for Parkinson's disease patients using Convolutional Recurrent Neural Networks and cross dataset learning <i>Muhammad Najam Dar Muhammad Usman Akram Rajamanickam Yuvaraj Sajid Gul Khawaja M. Murugappan</i> <i>Computers in Biology and Medicine</i> , Volume 144, Article Number 105327 Impact Factor: 7.7 Quartile: 1 Citations: 57 DOI: https://doi.org/10.1016/j.combiomed.2022.105327	2022
Machine Learning and Signal Processing Based Analysis of sEMG Signals for Daily Action Classification <i>Sajid Gul Khawaja Muhammad Usman Akram Aimal Khan Arsalan Shaukat Ayesha Sadiq Norah Saleh Alghamdi</i> <i>IEEE Access</i> , Volume 10, Pages 40506-40516 Impact Factor: 3.476 Quartile: 2 Citations: 8 DOI: 10.1109/ACCESS.2022.3166885	2022
Resource-Restricted Environments based Memory-Efficient Compressed Convolutional Neural Network Model for Image-level Object Classification <i>Zahra Waheed Shehzad Khalid Syed Mursleen Riaz Sajid Gul Khawaja Rimsha Tariq</i> <i>IEEE Access</i> , Volume 11, Pages 1386-1406 Impact Factor: 3.476 Quartile: 2 Citations: 3 DOI: 10.1109/ACCESS.2022.3230008	2022
A Novel Multiplier-Less LMS Adaptive Filter Design Based on Offset Binary Coded Distributed Arithmetic <i>Sajid Gul Khawaja Shawez Ahmad Naeem Amjad Muhammad Usman</i> <i>IEEE Access</i> , Volume 9, Pages 78138-78152 Impact Factor: 3.476 Quartile: 2 Citations: 18 DOI: 10.1109/ACCESS.2021.3083282	2021
Extraction of Retinal Layers Through Convolution Neural Network (CNN) in an OCT Image for Glaucoma Diagnosis <i>Hina Raja Muhammad Usman Akram Arsalan Shaukat Norah Alghamdi Sajid Gul Khawaja Noman Nazir Shoab Ahmad Khan</i> <i>Journal of Digital Imaging</i> , Volume 33, Pages 1428-1442 Impact Factor: 4.056 Quartile: 1 Citations: 39 DOI: 10.1007/s10278-020-00383-5	2020
RIDB: A Dataset of fundus images for retina based person identification <i>Muhammad Usman Akram Anum Abdul Salam Sajid Gul Khawaja Shoab Ahmed Khan Gul Hassan Naqvi</i> <i>Data in Brief</i> , Volume 33, Article Number 106433 Impact Factor: 0 Citations: 15 DOI: https://doi.org/10.1016/j.dib.2020.106433	2020
sEMG dataset of routine activities <i>Asad Mansoor Khan Sajid Gul Khawaja Muhammad Usman Akram Ali Saeed Khan</i> <i>Data in Brief</i> , Volume 33, Article Number 106543 Impact Factor: - Citations: 7 DOI: https://doi.org/10.1016/j.dib.2020.106543	2020
Neurotransmission cognitive theory: A novel approach for non-invasive brain stimulation using mechanical vibrations for the rehabilitation of neurological patients <i>Aliya A. Khan Shahbaz K. Ranjha Muhammad Usman Akram Sajid Gul Khawaja Arsalan Shaukat</i> <i>Medical Hypotheses</i> , Volume 143, Article Number 110078	2020

Impact Factor: 1.538 Quartile: 4 Citations: 6 DOI: https://doi.org/10.1016/j.mehy.2020.110078	
CNN and LSTM-Based Emotion Charting Using Physiological Signals <i>Sajid Gul Khawaja Muhammad Usman Akram Muhammad Najam Dar Amit N. Pujari</i> <i>Sensors</i> , Volume 20, Issue 16, Article Number 4551 Impact Factor: 3.576 Quartile: 1 Citations: 94 DOI: 10.3390/s20164551	2020
Data on OCT and Fundus Images for the Detection of Glaucoma <i>Muhammad Usman Akram Sajid Gul Khawaja Hina Raja Muhammad Arslan Aneeqa Ramzan Noman Nazir Hina Raja Muhammad Arslan Aneeqa Ramzan Noman Nazir</i> <i>Data in Brief</i> , Volume 29, Article Number 105342 Impact Factor: - Citations: 28 DOI: https://doi.org/10.1016/j.dib.2020.105342	2020
Data on fundus images for vessels segmentation, detection of hypertensive retinopathy, diabetic retinopathy and papilledema <i>Shahzad Akbar Taimur Hassan Ubaidullah Yasin Imran Basit Sajid Gul Khawaja Muhammad Usman Akram Shahzad Akbar Taimur Hassan Ubaidullah Yasin Imran Basit</i> <i>Data in Brief</i> , Volume 29, Article Number 105282 Impact Factor: - Citations: 45 DOI: 10.1016/j.dib.2020.105282	2020
Finding the Unique Permutation Matrix for Reverse Order Kronecker Product Intuitively <i>Sajid Gul Khawaja Muhammad G. Ali Muhammad G. Ali Shoab Amad Khan</i> <i>International Journal of Computer Theory and Engineering</i> , Vol. 11, No. 6, Pages 107-111 Impact Factor: - DOI: 10.7763/IJCTE.2019.V11.1252	2019
Multiprocessor architecture for real-time applications using mean shift clustering <i>Amna Tehreem Sajid Gul Khawaja Asad Mansoor Khan Muhammad Usman Akram Shoab A. Khan</i> <i>Journal of Real-Time Image Processing</i> , Volume 16, Pages: 2233-2246 Impact Factor: 1.968 Quartile: 3 Citations: 4 DOI: 10.1007/s11554-017-0733-0	2019
Automated glaucoma detection using retinal layers segmentation and optic cup-to-disc ratio in optical coherence tomography images <i>Sajid Gul Khawaja Ubaid Ullah Yasin Wasi Haider Butt Aneeqa Ramzan Muhammad Usman Akram Arsalan Shaukat</i> <i>IET Image Processing</i> , Volume 13, Issue 3, Pages 409-420 Impact Factor: 1.995 Quartile: 3 Citations: 14 DOI: 10.1049/iet-ipr.2018.5396	2019
A Parallel Architecture for the Partitioning around Medoids (PAM) Algorithm for Scalable Multi-Core Processor Implementation with Applications in Healthcare <i>Hassan Mushtaq Sajid Gul Khawaja Muhammad Usman Akram Amanullah Yasin Muhammad Muzammal Shehzad Khalid Shoab Ahmad Khan</i> <i>Sensors</i> , NULL Impact Factor: 3.031 Quartile: 1 Citations: 9 DOI: https://doi.org/10.3390/s18124129	2018
Analysis of PCG signals using quality assessment and homomorphic filters for localization and classification of heart sounds <i>Quratul-Ain Mubarak Muhammad Usman Akram Arsalan Shaukat Farhan Hussain Sajid Gul Khawaja Wasi Haider Butt</i> <i>Computer Methods and Programs in Biomedicine</i> , Volume: 164, Pages 143-157 Impact Factor: 3.424 Quartile: 1 Citations: 59 DOI: 10.1016/j.cmpb.2018.07.006	2018
Structure Tensor Graph Searches Based Fully Automated Grading and 3D Profiling of Maculopathy From Retinal OCT Images <i>Taimur Hassan Muhammad Usman Akram Arsalan Shaukat Sajid Gul Khawaja BILAL HASSAN</i> <i>IEEE Access</i> , Volume 6, Pages 44644-44658 Impact Factor: 4.098 Quartile: 1 Citations: 38 DOI: 10.1109/ACCESS.2018.2862626	2018
Network-on-Chip based MPSoC architecture for k-mean clustering algorithm <i>Sajid Gul Khawaja Muhammad Usman Akram Shoab Ahmed Khan Arsalan Shaukat Saad Rehman</i>	2016

Microprocessors and Microsystems, Volume 46, Part B, Pages 1-10

Impact Factor: 1.025 | Quartile: 3 | Citations: 5

DOI: 10.1016/j.micpro.2016.08.006

Designing Area Optimized Application-Specific Network-On-Chip Architectures while Providing Hard QoS Guarantees

2015

Sajid Gul Khawaja Muhammad Usman Akram Mian Hamza Mushtaq Shoab A. Khan Habib ullah Jamal

PLoS ONE, Volume 10, Issue 4, Article Number e0125230

Impact Factor: 3.057 | Quartile: 1 | Citations: 6

DOI: 10.1371/journal.pone.0125230

Prioritized direction based switch for bufferless network on chip architecture

2011

Sajid Gul Khawaja Mian Hamza Mushtaq Shoab Ahmed Khan

International Journal of Electrical and Computer Sciences, Volume 11 No. 4, Pages 23-29

Impact Factor: N/A

DOI: 115704-8383-IJECS-IJENS

Conference Proceedings

An Intelligent Model to Predict Cardiovascular Disease using Machine Learning Techniques

2023

Zawaria Sadaf Sajid Gul Khawaja Muhammad Usman Akram

2023 25th International Multitopic Conference (INMIC), res.country(177,)

Citations: N/A

DOI: 10.1109/INMIC60434.2023.10465961

YAAD: Young Adult's Affective Data Using Wearable ECG and GSR sensors

2022

Muhammad Najam Dar Amna Rahim Dr Muhammad Usman Akram Dr Sajid Gul Khawaja Aqsa Rahim

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787465

TM-BERT: A Twitter Modified BERT for Sentiment Analysis on Covid-19 Vaccination Tweets

2022

Muhammad Talha Riaz Muhammad Shah Jahan Dr Sajid Gul Khawaja Dr Arsalan Shaukat Asst Prof Jahan Zeb

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(177,)

Citations: 1

DOI: DOI: 10.1109/ICoDT255437.2022.9787395

Surface EMG Signal Analysis using Hand-Crafted Features for Detection and Classification of GTC seizures

2022

Maryam Naveed Dr Sajid Gul Khawaja Dr Muhammad Usman Akram

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787476

Reconfigurable Architecture for Real-time Decoding of Canonical Huffman Codes

2022

Rimsha Tariq Dr Sajid Gul Khawaja Dr Muhammad Usman Akram Dr Farhan Hussain

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787442

Power profiling-based side-channel attacks on FPGA and Countermeasures: A survey

2022

Ali Hasnain Yame Asfia Dr Sajid Gul Khawaja

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787473

Framework for Live Migration of FPGA based ECB-mode AES-128 accelerator

2022

Yame Asfia Sajid Gul Khawaja Muhammad Asad Alina Mirza

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)

Citations: N/A

DOI: 10.1109/ICoDT255437.2022.9787468

Framework for Dynamic Partial Configuration of Algorithms for Zynq-7000 SoC using JPEG as Case Study

2022

Sajid Gul Khawaja Arsalan Shaukat Muhammad Usama Iqbal Shoab Ahmed Khan

2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)	
Citations: N/A	
DOI: 10.1109/ICoDT255437.2022.9787460	
A Theoretical CNN Compression Framework for Resource-Restricted Environments	2022
<i>Dr Sajid Gul Khawaja Zahra Waheed Awan Dr Shehzad Khalid</i>	
2022 2nd International Conference on Digital Futures and Transformative Technologies (ICoDT2), res.country(282,)	
Citations: N/A	
DOI: 10.1109/ICoDT255437.2022.9787431	
Design Space Exploration Scheme for Mapping Convolutional Neural Network on Zynq Zedboard	2020
<i>M. Sohaib Ul Hassan Umar Shahbaz Khan Sajid Gul Khawaja</i>	
12th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), res.country(188,)	
Citations: N/A	
DOI: 10.1109/ECAI50035.2020.9223137	
An Incremental Noise Constrained Least Mean Square Algorithm	2019
<i>Usman Hameed Muhammad Omar Bin Saeed Sajid Gul Khawaja Usman Hameed Muhammad Omar Bin Saeed</i>	
5th International Conference on Frontiers of Signal Processing (ICFSP), res.country(75,)	
Citations: N/A	
DOI: 10.1109/ICFSP48124.2019.8938040	
A Machine Learning Technique to Classify LSST Observed Astronomical Objects Based on Photometric Data	2019
<i>Asad Mansoor Khan Muhammad Usman Akram Sajid Gul Khawaja Ali Saeed Khan</i>	
2019 6th Swiss Conference on Data Science (SDS), res.country(43,)	
Citations: N/A	
DOI: 10.1109/SDS.2019.000-9	
Hybrid RID Network for Efficient Diagnosis of Tuberculosis from Chest X-rays	2018
<i>Rabia Rashid Sajid Gul Khawaja Muhammad Usman Akram Asad Mansoor Khan</i>	
The 9th Cairo International Biomedical Engineering Conference (CIBEC 2018) , res.country(65,)	
Citations: N/A	
DOI: 10.1109/CIBEC.2018.8641816	
Learning Based Segmentation of Skin Lesion from Dermoscopic Images	2018
<i>Muhammad Ammar Sajid Gul Khawaja Abeera Atif Muhammad Usman Akram Muntaha Sakeena</i>	
2018 IEEE 20th International Conference on e-Health Networking, Applications and Services (Healthcom), res.country(56,)	
Citations: N/A	
DOI: 10.1109/HealthCom.2018.8531156	
Crowd Behavior Categorization using Live Stream based on Motion Vector Estimation	2017
<i>Amna Sajid Sajid Gul Khawaja Mehak Tofiq</i>	
Proceedings of the 2017 Future Technologies Conference (FTC) , res.country(38,)	
Citations: N/A	
DOI: https://saiconference.com/Conferences/FTC2017Proceedings	
Parallel Architecture for Implementation of Frequent Itemset Mining using FP-Growth	2017
<i>Amna Tehreem Sajid Gul Khawaja Muhammad Usman Akram Shoab A. Khan Muhammad Ali</i>	
International Conference on Signals and Systems (ICSigSys), res.country(100,)	
Citations: N/A	
DOI: 10.1109/ICSIGSYS.2017.7967077	
A Novel Mean-Shift Architecture for Scalable Multiprocessor Implementation	2016
<i>Amna Tehreem Sajid Gul Khawaja Muhammad Usman Akram Shoab A. Khan</i>	
2016 Future Technologies Conference (FTC) , res.country(233,)	
Citations: N/A	
DOI: 10.1109/FTC.2016.7821741	
A Novel Multiprocessor Architecture for k-means Clustering Algorithm based on Network-on-Chip	2016
<i>Sajid Gul Khawaja Muhammad Usman Akram Shoab A. Khan Ammar Ajmal</i>	
2016 19th International Multi-Topic Conference (INMIC), res.country(177,)	
Citations: N/A	
DOI: 10.1109/INMIC.2016.7840112	

- A Novel Architecture for K-means Clustering Algorithm** 2016
Sajid Gul Khawaja Asad Mansoor Khan M. Usman Akram Shoab A. Khan
Third International Afro-European Conference for Industrial Advancement — AECIA 2016, res.country(136,)

Citations: N/A

DOI: 10.1007/978-3-319-60834-1_31
- Multicore Framework for Finding Frequent Item-Sets using TDS** 2016
Muhammad Usman Akram Sajid Gul Khawaja Amna Tehreem Shoab Ahmed Khan
16th International Conference on Hybrid Intelligent Systems (HIS 2016), res.country(136,)

Citations: N/A

DOI: 10.1007/978-3-319-52941-7_34
- A Surrogate Channel Based Analysis of EEG Signals for Detection of Epileptic Seizure** 2016
Saqib Ejaz Sajid Gul Khawaja Muazzam A. Khan M. Usman Akram
2016 IEEE International Conference on Imaging Systems and Techniques (IST) , res.country(88,)

Citations: N/A

DOI: 10.1109/IST.2016.7738256
- Crackle Separation and Classification from Normal Respiratory Sounds using Gaussian Mixture Model** 2015
Syed Osama Maruf M. Usama Azhar Sajid Gul Khawaja M. Usman Akram
2015 IEEE 10th International Conference on Industrial and Information Systems (ICIIS), res.country(129,)

Citations: N/A

DOI: 10.1109/ICIINFS.2015.7399022
- Analysis of EEG Signals for Detection of Epileptic Seizure using Hybrid Feature Set** 2014
Ammama Furrukh Gill Syeda Alishbah Fatima Sajid Gul Khawaja Saqib Ejaz Awan Muhammad Usman Akram
Theory and Applications of Applied Electromagnetics APPEIC 2014, res.country(100,)

Citations: N/A

DOI: 10.1007/978-3-319-17269-9_6
- Separation and Classification of Crackles and Bronchial Breath Sounds from Normal Breath Sounds using Gaussian Mixture Model** 2014
Ali Haider M. Daniyal Ashraf M. Usama Azhar Syed Osama Maruf Mehdi Naqvi Sajid Gul Khawaja M. Usman Akram
International Conference on Neural Information Processing, res.country(157,)

Citations: N/A

DOI: 10.1007/978-3-319-12640-1_60
- Time Domain Analysis of EEG Signals for Detection of Epileptic Seizure** 2014
Ammama Furrukh Gill Syeda Alishbah Fatima Aafreen Nawaz Ayesha Nasir Sajid Gul Khawaja Saqib Ejaz Muhammad Usman Akram
2014 IEEE Symposium on Industrial Electronics & Applications (ISIEA) , res.country(157,)

Citations: N/A

DOI: 10.1109/ISIEA.2014.8049867

Book Chapters

- Physical Action Categorization Pertaining to Certain Neurological Disorders Using Machine Learning-Based Signal Analysis** 2022
Asad Mansoor Khan Sajid Gul Khawaja Muhammad Usman Akram Ali Saeed Khan
 In: *Book on Biomedical Signals Based Computer-Aided Diagnosis for Neurological Disorders*, 1st Edition, Chapter 2, Pages 23-42

Citations: 1

DOI: https://doi.org/10.1007/978-3-030-97845-7_2

Editorial Activities

[illegible]

Intellectual Property

Copyrights

A system for detecting and regulating anxiety using haptics Status: Granted Filed	2020
Graphical User Interface of EKKO-Wave therapeutic Device Status: Licensed Filed	2020
Mobile application of EKKO-Wave therapeutic Device Status: Licensed Filed	2020
Web application of EKKO-Wave therapeutic Device Status: Licensed Filed	2020
Epilepsy Care mobile application Status: Licensed Filed	2020
Desktop application for HESS screening system Status: Filed	2020

Patents

Systems and Methods for Testing Neurological Disorders using Vibratory Therapeutic Device Status: Filed	2019
Apparatus and System for Retinal Screening Using Smartphone Status: Filed	2018
Retinal Screening System using mobile terminal and method thereof Status: Granted	2017
A NETWORK-ON-CHIP BASED MULTIPROCESSOR ARCHITECTURE FOR IMPLEMENTING K-MEANS CLUSTERING ALGORITHM Status: Filed	2017

Industrial Designs

Vibration Therapy device Status: Filed	2020
Joy Stick based Assembly for Acquisition of Retina using Portable Device (Class-12) Status: Granted Filed	2019
Mobile Mount for Retina Acquisition (Class-12) Status: Granted Filed	2019
HESS Screening System (Class-12) Status: Filed	2019
EKKO-WAVE THERAPEUTIC DEVICE Status: Filed	2019

Trademarks