Prof. Dr. Yasar Ayaz, Ph.D. (JAPAN)
(Pride of Performance)
Chairman / Central Project Director,
National Center of Artificial Intelligence
(NCAI), PAKISTAN.

Professor,
Department of Robotics & Artificial Intelligence,
School of Mechanical and Manufacturing Engineering
(SMME) National University of Sciences and Technology
(NUST), Sector H-12, Islamabad, PAKISTAN.

Specially-Appointed Professor,
Department of Bioengineering and Robotics,
Graduate School of Engineering,
Tohoku University, Sendai, Miyagi, JAPAN.

1. SUMMARY:

- Conferred with **Presidential Award** for **Pride of Performance** by **Govt of Pakistan** (14 August 21).
- Conferred with **PEC Engineers' Excellence Award** by **Pakistan Engineering Council** at **Aiwan-e-Sadar, Islamabad.** (18 Oct 2022).
- Conferred with **Lifetime Achievement Award** by **IEEE Islamabad Section** (3rd Feb 2023)
- **National Record:** Maximum number of International Research Papers authored from any undergraduate final degree project in the field of engineering in Pakistan. (10 x Research Papers). Pakistan Book of Records (24 November 2017).
  Awarded **PBR Gold Medal** by Pakistan Book of Records.
- **National Record:** Maximum number of Research Papers in International Journals bearing Thomson Reuters Impact Factor authored from any undergraduate final degree project in the field of engineering in Pakistan. (3 x Papers) – Pakistan Book of Records (24 November 2017).
  Awarded **PBR Gold Medal** by Pakistan Book of Records.
- Awarded **President's Gold Medal** for being the **Overall Best Teacher of NUST (Pakistan)** for the year 2012. Conferred by **President of Pakistan (Mr. Mamnoon Hussain)** on May 7, 2014.
- Conferred with **BRAIN Award 2022-23** for **NUST Top Performer 2022** by Rector NUST (7th August 2024)
- Named as **one of the Top 20 Most Eminent Scientists of Pakistan** by National Academy of Young Scientists of Pakistan (NAYS). (10 March 2017 – Scientists Day)
- Accorded **Best Researcher Award** for School of Mechanical and Manufacturing Engineering (SMME), NUST for the Year of 2019-20)
- **Founder and President** of **IEEE Robotics and Automation Society,** Pakistan.
- **Founder and Chairman of Pakistan's National Center of Artificial Intelligence (NCAI).**
- **Chairman** of **National Expert / Focus Group** on **Think-Future Technologies** (3D Printing, Artificial Intelligence, Internet of Things, Block Chain, Augmented Reality, Smart Robotics, Intelligent Vehicles) notified by Ministry of Science and Technology (MoST), Pakistan.
- **Chairman** of **National Expert / Focus Group** on **Artificial and Robotics Technologies**, Ministry of Science and Technology (MoST), Pakistan.
- Elected **Deputy Chairman** of **Technology Foresight Committee on Robotics** at

Pakistan Council for Science and Technology (PCST), Ministry of Science and Technology (MoST), Pakistan.

- Developed **Pakistan's National Robotics Mapping** for **Ministry of Science and Technology (MoST)**, Pakistan.
- Organized **First National Workshop on Robotics Technology for Industrial Development of Pakistan,** April 2017.
- Advisor of **Team-NUST: First Team from South Asia that Qualified for RoboCup: Standard Platform League.**
- Featured in **Who's Who in the World**, Berkeley, USA as notable international academician and researcher (2013 to present).
- Author of **more than 150 International Publications** in International Journals, Invited Book Chapters and International Conferences.
- **Cited by Top Universities / Institutes of more than 13 countries** including Japan, USA, France, Germany, Hungary, South Korea, Canada, China, Iran, Croatia, Singapore, Australia, Pakistan etc.
- **Lead Organizer & General Chair: IEEE International Conference on Robotics and Emerging Allied Technologies in Engineering (iCreate), Islamabad 2014.**
- Research on Hand Gesture based Emotion Identification accorded **Best Paper Award at International Conference on Human-Computer Interaction ICHCI 2018, London, UK.**
- Research on Robotic Grasping using Soft Fingers accorded **Third Best Technical Paper Award**
  at International Conference on Climbing & Walking Robots: **CLAWAR 2013, Sydney, Australia.**
- **Visiting Professor at New York University (NYU), AD** in their Research Centric Summer School on Interactive Robotics and Media, June 2012.
- Declared **Best Teacher of the Year** by the Faculty Board of Studies, NUST School of Mechanical and Manufacturing Engineering for the years 2010 and 2011.

2. ACADEMIC HISTORY:

	Degree	Duration	Status /CGPA	Major Field	University/ Board
a	Ph.D.(Engg)	2006-2009	Degree Awarded	Robotics & Machine Intelligence	Tohoku University, JAPAN.
b	M.Sc.(Engg)	2003-2005	Degree Awarded 3.444	Electrical Engineering.	NUST, Pakistan.
c	B.Sc.(Engg)	1999-2003	Degree Awarded 3.554	Mechatronics Engineering.	NUST, Pakistan.

3. PROFESSIONAL AFFILIATIONS

✓ HEC Approved PhD Supervisor	✓ IEEE (Senior Member)
✓ PEC Professional Engineer (P.E.)	✓ IEEE Robotics and Automation Society (Professional)

✓ Founder and President IEEE Robotics and Automation Society, Pakistan

4. REVIEWER

a. IEEE Transactions on Robotics.
b. IEEE / ASME Transactions on Mechatronics.
c. Robotics and Autonomous Systems (Elsevier)
d. Biomedical Signal Processing and Control (Elsevier)
e. International Journal of Advanced Robotic Systems (IJARS)
f. IEEE International Conference on Robotics and Automation (ICRA).
g. IEEE / RSJ International Conference on Intelligent Robots and Systems (IROS).

h. IEEE / RSJ International Conference on Automation Systems Engineering (CASE). □
i. IEEE RAS International Conference on Humanoid Robots.
j. IEEE / ASME International Conference on Advanced Intelligent Mechatronics (AIM). □
k. IEEE RAS International Conference on Robotics and Biomimetics (RoBio).

□ Indicates the Official Flagship International Conference of IEEE in the given field.

5. PROFESSIONAL EXPERIENCE:

	Name of Organization/Institution	Designation	Duration
a.	National Center of Artificial Intelligence (NCAI), Pakistan.	Chairman / Central Project Director	May 2017 – Present
	Department of Robotics & Artificial Intelligence, SMME, NUST, Sector H-12, Islamabad, Pakistan.	Professor	Jan 2020 – Present
b.	Department of Robotics & Artificial Intelligence, SMME, NUST, Sector H-12, Islamabad, Pakistan.	Associate Professor	May 2015 – Jan 2020
c.	Department of Robotics & Artificial Intelligence, SMME, NUST, Sector H-12, Islamabad, Pakistan.	Head of Department (HoD)	Jan 2013 – Aug 2020
d.	Department of Robotics & Artificial Intelligence, SMME, NUST, Sector H-12, Islamabad, Pakistan.	Deputy Head of Department	June 2010 – Jan 2013
e.	Department of Robotics & Artificial Intelligence, SMME, NUST, Sector H-12, Islamabad, Pakistan.	Assistant Professor	Jan 2010 – May 2015
f.	Space Machines Lab, Department of Aerospace Engg, Tohoku University, Japan.	Research Associate	Oct 2005 – Sept 2009
g.	Department of Electrical Engineering, CEME, NUST, Rawalpindi, Pakistan.	Teaching Assistant	July 2004 – June 2005
h.	Depts. of Mechatronics Engg / Computer Engg., CEME, NUST, Rawalpindi, Pakistan.	Teaching Assistant	Fall 2001 Semester
i.	Alcatel Pakistan Limited, Islamabad, Pakistan.	Internee Engineer	June – July 2001
j.	National Institute of Electronics, Islamabad, Pakistan.	Internee Engineer	May – June 2001

6. Funded Projects:

	Title	Role	Funding Agency	Date of Award	Amount
a.	National Center of Artificial Intelligence (NCAI)	Central Project Director (CPD)	PSDP HEC	12 Feb 2018	Rs. 2178.338 M
b.	ENHANCing Human Performance in Complex Socio-Technical SystEms (ENHANCE)	Principal Investigator (PI) (Pakistan)	Horizon 2020 (European Commission)	18 June 2018	EUR 147,200 (Rs. 32.392 M)
c.	Integrated Open Source Engineering (IOSE)	Co-Principal Investigator (Co-PI)	HEC NCBC	22 Dec 2020	Rs 13 M
d.	Leg Amputee Automated Prosthesis	Principal Investigator (PI)	IGNITE	18 Aug 2020	Rs. 41,955
e	Multifaceted Crop Scouting using Industry 4.0	Principal Investigator (PI)	COE HEC	20 June 2022`	Rs. 74.128 M
f	Preserving Intellectual and Material Cultural Heritage through Augmented and Virtual Reality	Principal Investigator (PI)	NRPU HEC	04 April 2022	Rs. 10.549 M
g	Prime Minister's Youth Skill Development Program (PMYSDP)	Principal Investigator (PI)	NAVTTC	2022	14.525 M
	Prime Minister's Youth Skill Development Program (PMYSDP)	Principal Investigator (PI)	NAVTTC	2023	2.125 M
h	Certified Artificial Intelligence Professional	Principal Investigator (PI)	CAIP	February 2023	2.090 M
i	Research on semi-autonomous intelligent control of intrarenal interventional robot through the natural orifice	Principal Investigator (PI)	NSFC (China) and PSF	2023	3.5 M
j	AGILE (Artificial General Intelligence Learning Engine)	Principal Investigator (PI)	Flagship Project	2023	1.0 M
k	Digital Human Project	Principal Investigator (PI)	Flagship Project	2023	1.0 M
l	A Pilot Framework for Immersive VR-based Telepresence for Remote Collaboration and Teleoperation	Co-Principal Investigator (Co-PI)	Flagship Project	2023	1.0 M
j	Certified Artificial Intelligence Professional BATCH-2	Principal Investigator (PI)	CAIP	2023	1.080 M
k	AI for Leaders	Principal Investigator (PI)	AI for leaders	2023	1.357 M
l	Infantry Tactical Simulator	Principal Investigator (PI)	MT Dte. GHQ	2024	108.5 M
m	Certified Artificial Intelligence Professional BATCH-3	Principal Investigator (PI)	CAIP	2024	0.945 M
n	Prime Minister's Youth Skill Development Program (PMYSDP), AJK	Principal Investigator (PI)	NAVTTC	2024	2.8 M
o	Prime Minister's Youth Skill Development Program (PMYSDP) BATCH-3	Principal Investigator (PI)	NAVTTC	2024	3.437 M
p	Artificial Intelligence Development Professional	Principal Investigator (PI)	AIDP (Okara Garrison)	2024	0.945 M
q	Security Surveillance System - Smart Eye AI	Principal Investigator (PI)	Pakistan Sciences Academy (PAS)	2025	5.69
				Total	**Rs. 2458.401 M**

7. PATENTS:

Patents Awarded

1. **Reference: 20083-D**
   Date of Filing: 23/09/2019
   Date of Award: 2/07/2020
   Title: Actuator of Exoskeleton Hand (Class-03)
   Inventors: Muhammad Hamza Asif Nizami, Abdul Rehman, Hamza Butt, Muhammad Hamza Javed, Yasar Ayaz and Muhammad Jawad Khan.

2. **Reference: 20085-D**
   Date of Filing: 23/09/2019
   Date of Award: 2/07/2020
   Title: Sixth Finger Actuator (Class-03)
   Inventors: Muhammad Hamza Asif Nizami, Abdul Rehman, Hamza Butt, Muhammad Hamza Javed, Yasar Ayaz and Muhammad Jawad Khan.

3. **Reference: 20087-D**
   Date of Filing: 23/09/2019
   Date of Award: 2/07/2020
   Title: Brain Imaging Tool for Medical Diagnosis (Class-03)
   Inventors: Muhammad Hamza Asif Nizami, Umer Asgher, Sara Ali, Yasar Ayaz and Muhammad Jawad Khan.

Patents Pending

4. Title: **Robot Mannequin**
   Reference: 332/13
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

5. Title: **Flexible Resistive Sensor**
   Reference: 345/2016
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

6. Title: **Knee Double Bearing**
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

7. Title: **Kinematic Chain**
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

8. Title: **FNRIS Headband**
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

9. Title: **Exoskeleton**
   Status: Submitted to Intellectual Property Office (IPO), Pakistan.

10. Title: **Exoskeleton Suit**
    Status: Submitted to Intellectual Property Office (IPO), Pakistan.

11. Title: **Ankle Cross Shaft**

Status: Submitted to Intellectual Property Office (IPO), Pakistan.

12. Title: Solar Simulator Integrated with Environment Chamber Emulator
Design No.: 21602-D
Inventors: Dr Muhammad Sajid, Engr Saeed Iqbal, Dr Emad Uddin, Dr Yasar Ayaz, Dr Muhammad Jawad Khan, Dr Adeel Waqas

8. THESES:

	Degree	Title/Brief Particulars
a.	Ph.D (Engg.)	**Footstep Planning Among Obstacles for Humanoid Robots**: - Design and Development of new footstep planning algorithms for autonomous navigation by HRP-2 Humanoid Robot in obstacle cluttered environments. A novel approach is adopted for motion planning / stepping-over of obstacles, both large and small as well as those placed non-perpendicular to the robot's line of motion.
b.	M.Sc (Engg.)	**Autonomous Footstep Planning for Saika-3 Humanoid Robot**: - Design / Simulation of algorithms for autonomous footstep planning for Saika-3 humanoid robot involving use of a global navigation strategy with static stability constraints.
c.	B.Sc (Engg.)	**Design, Fabrication and Control of a Two-Legged Walking Robot**:- A light-weight and easily programmable biped robot ('NUSTBOT-1') with 4 degrees of freedom was designed and developed.

9. PhD Supervised

S.No.	Name	Topic of Thesis	Year	Reg No.
1	Sara Ali	MULTI-ROBOT INTERACTIVE THERAPY FOR CHILDERN WITH AUTISM SPECTRUM DISORDER	2020	238671
2	Waseem Shahzad	MULTI-GESTURE DECODING USING HYBRID EMG-IMU FOR REHABILITATION APPLICATONS	2020	NUST201290001 PSMME2712F
3	Saad Arif	Brain-Computer Interface for Mental State Detection of Drivers	2021	90165
4	Asim Zaheer Ud din	DETECTION, ESTIMATION AND FORECAST FOR NONLINEAR SYSTEMS	2022	90326P
5	Syed Muhammad Nashit	Trajectory Tracking for Agricultural Multicopter Aerial Robot	2023	169139

10. PhD Co-Supervised

S.No	Student Name	Topic Of Thesis	Year	Reg No.
1	Umer Asgher	FIXED-VALUE MBLL BASED COGNITIVE HEMODYNAMIC RESPONSE ASSESSMENT USING P-FNIRS SYSTEM: APPLICATIONS TO DEEP LEARNING BRAIN MACHINE	2020	NUST201490191PSMME2614F

11. MS Supervised

S.NO	Student's Name	Title	Year	Reg No.
1	Badar Ali	Human Tracking by Mobile Robot using Stereo Camera	2011	2011-MS-NUST-RIME-08
2	Faheem Ijaz	Arthrokinematics Computation For Design Of Bone-Anchored Transradial Amputation Prosthesis Through Elastokinematic Modeling Of Human Forearm	2015	NUST201362028MSMME62113F
3	M. Zeeshan Baig	Motor Imagery Based EEG Signal Classification	2015	2011-NUST-MS-RIME-10
4	Shahwar Yaseen	Implementation Of Reciprocal Velocity Obstacle On Mobile Robots' Swarm With Bio Inspired Biasing	2015	2011-NUST-MS-RIME-14
5	Zeeshan Asfar	Development Of Smart Thread For Application As Strain Gauge For Structural Health Monitoring	2016	NUST201463102MSMME62114F
6	Malik Anas Ahmad	Development Of An Intelligent Neurologist Support System (INSS) For Diagnosting epilepsy	2015	2011-NUST-MS-RIME-06
7	Neelam Umbreen	GoalKeeper for Robocup SPL	2016	NUST201463113MSMME62114F
8	Muhammad Sami Siddique	Text Detection And Recognition For Semantic Mapping In Indoor Navigation	2016	NUST201260404MSMME62112F
9	M Huzaifa Bin Qamer	Development Of Algorithm for Door Detection And Manipulation By Mobile Manipulation By Mobile Manipulator Mounted On Wheelchair	2016	NUST201260398MSMME62112F
10	Usama Siraj	Real-Time Stereo Visual Odometry And Its Application To Semi-Autonomous Wheelchair	2016	NUST201260395SMME62112
11	Noaman Mehmood	3D Vision For Indoor Robotics Manipulation Using Kinect V2 Sensor With Point Cloud Library (PCL)	2016	NUST201362032MSMME62113F
12	Ali Bin Wahid	Development Of EEEG-Based Re-Configurable Semi-Autonomous Streering Framework For Electric Wheelchair	2016	NUST201260405SMME62112
13	Zain Murtaza	Multi-Robot Cooperation In RoboCup-SPL	2016	NUST201362039MSMME62113F
14	Muhammad Affan Zia	Eye Pupil Based Control Of Electric Wheelchair	2016	NUST201260401MSMME62112F
15	M Hamza Asif Nizami	Incorporation Of Proximally Actuated Elastically Loaded Scissors Mechanism For The Leg Design Of A Quadruped Robot	2016	NUST201463105MSMME62114F
16	Ehtisham Ul Hasan	Development Of An FNIRS Equipment For Monitoring Human Brain Activity In The Pre-Frontal Region	2016	NUST201463106MSMME62114F

17	Sumaira Tabassum	PCNN for Multi Agent Path Planing	2017	NUST201362038MSMME62113F
18	M Baber sial	An Intelligent Hand Gesture Recognition System	2017	119349
19	Maham Haroon	Modelling of a Bidirectional Network	2017	117578
20	Shehyar Ali Khan	Collaborative Optimal Reciprocal Collision Avoidane (CORCA)	2017	NUST201260408MSMME62112F
21	Faizan Ahmed	Design Of An Anthromorphic Upper Extremity Exoskeleton	2017	NUST201260411MSMME62112F
22	Husnain Ahmad	APOLLO: A Multi-ModalFramework for A Socially evocative Robotics systems Based On Human -Human Interaction	2017	NUST201362033MSMME62113F
23	ZAID AHSAN SHAH	A DECENTRALIZED PATTERN GENERATOR FOR THE MOTION GENERATION OF AN UNDER-ACTUATED HUMANOID ROBOT NUSTBOT-3	2018	NUST201362042MSMME62113F
24	ZAID TAHIR	POTENTIALLY GUIDED BIDIRECTIONALIZED RRT* FOR FAST OPTIMAL PATH PALNNING IN CULTTERED ENVIROMENT	2018	Fall2015-RIME00000119245
25	FAISAL MEHMOOD	ROBOT MEDIATED THERPIES FOR IMPROVEMENT IN SOCIAL INTERACTION OF ASD CHILDREN	2018	171963
26	RUMSHAA YUNUS	HAPTIC FEEDBACK FOR REHABILITION SYSTEM	2019	172247
27	QAZI AAFAQUE MASOOD	OVERHEAD BALL THROWING FOR HUMANOID ROBOT SOCCER	2019	118053
28	SAIFULLAH	DEVELOPMENT OF A GENERALIZED WHOLE BODY MOTION ARCHITTECTURE FOR A HUMANOID ROBOT WITH APPLICATION IN SOCCER ROBOTICS	2019	2016-RIME-00000172032
29	SOBIA FAYYAZ	BI-DIRECTONAL ROBOTICS COMMUNICATTION FOR HEARING IMPAIRED	2019	171411
30	ASBAH ASHFAQ	BALL DETECTION ROBOT DETECTION SELF LOCALIZATION AND PROBABILISTIC TRACKING OF A ROBOTS IN ROBOCUP STANDARD PLATFORM LEAGUE	2019	2011-NUST-SEECS-BE-SE-256
31	SAIMA TARIQ	APPLICATION OF SOCIALLY ASSISTIVE ROBOTICS FOR THERAPY OF CHILDREN WITH DOWN SYNDRONE AND AUTISM SPECTRUM DISORDER	2018	NUST201463108MSMME62114F
32	MOMENA HASAN	ANOMALY DETECTION FOR RADIOGRAPHY IMAGES & TIME SERIES DATA	2020	171083
33	Muhammad Tayab Ali	Smart Control and Automation of Mannequin	2020	172300
34	Hassan nawaz	Development of Semi-Autonomous RISE Wheelchair with Multiple user Interfaces using Robot Operating System (ROS)	2020	170746

35	Behram Kayani	Design and Development of A Motorized Mannequin	2020	171270
36	Saad Ali Liaqat	Design Optimization of Coanda Effect Based UAV using CFD Simulations	2019	147533
37	Fazal ur Rehman	IRIS Orientation Based Mobiles Robot Steering Using Regional Division of Human Eye	2020	172705
38	Irtaqa Naveed	Traffic Rule Violation Detection Using A1 and Machine Learnin	2020	171051
39	Syed Kamran Ahmed	Interfacing Niha With Nao (Nina) By Implementing Sensory-Motor And Perceptual Memory Units	2020	170346
40	Khurram Khalil	Analyzing Human Behavior and Memory Activities using Deep Learning for BMI	2021	273888
41	Ahmed Husnain Johar	Maritime Accident Analysis and AI based HCD IoOT Larch for Operator Vigilance and Cognition	2020	274740
42	Usama Tariq Khan	Rapidly Re-planning RRT* A Novel Re-Planning Algorithm	2021	206755
43	Mahrukh Shahid	RL based Differential Drive Primitive Policy for Transfer Learning	2022	277078

12. PUBLICATIONS:

ISI Thomson Reuters Indexed Journal Publications

[1] Neelam Umbreen , Sara Ali , Hasan Sajid , Yasar Ayaz , Shrooq Alsenan , Yunyoung Nam , So Yeon Kim and Muhammad Baber Sial “A Scalable Deep Attention Mechanism of Instance Segmentation for the Investigation of Chromosome” , Science Direct , 11 May 2025 (ISSN:0960-1481) https://doi.org/10.1016/j.slast.2025.100306

[2] Saeed Iqbal; Syed Maaz Hasan; Yasar Ayaz; Emad Ud Din; Adeel Waqas; Muhammad Sajid, “Condition Monitoring of Photovoltaic Panels through Electrical Impedance Spectroscopy and Machine Learning Focusing on Temperature, Dust and Microcracks”, IEEE Access (Early Access), March 2025 (ISSN**:** 2169-3536) DOI: 10.1109/ACCESS.2025.3550738

[3] Zunera Zahid, Sara Ali, Yasar Ayaz, Syed Mustafa Hassan and Raheel Nawaz, “Protocol for optimizing robot-assisted autism therapy sessions through gaze analysis: A pilot study investigating optimal trial count for children with comorbid autism spectrum disorder and intellectual disability”, Jan 2025, Journal of Intellectual Disabilities (ISSN: 1744-6295), (doi.org/10.1177/17446295241312053)

[4] Anum Jaffar, Sara Ali, Khawaja Fahad Iqbal, Yasar Ayaz, Ali R Ansari, Muhammad A B Fayyaz, Raheel Nawaz “A Comprehensive Multimodal Humanoid System for Personality Assessment Based on the Big Five Model” June 2024, IEEE Access (ISSN: 2169-3536)
(DOI: 10.1109/ACCESS.2024.3412931)

[5] Zunera Zahid, Sara Ali, Shehriyar Shariq, Yasar Ayaz, Noman Naseer, Irum Yaseen “RoboCA3T: A Robot-Inspired Computer-Assisted adaptive autism therapy for improving joint attention and imitation skills through learning and computing Innovations” Journal of Computer Assisted Learning, May 2024 (1-18) (ISSN:1365-2729,0266-4909)
(DOI: https://doi.org/10.1111/jcal.12990)

[6] Malik Kamal Mazhar, Muhammad Jawad Khan, Karam Dad Kallu and Yasar Ayaz “Real-Time Vehicle Lateral Dynamics Estimation Using State Observer and Adaptive Filter” Engineering Proceedings, 2023, 45, 27. Sep 2023, (ISSN: 2673-4591) (doi.org/10.3390/engproc2023045027),

[7] Muhammad Faizan Faiz, Muhammad Sajid, Sara Ali, Kashif Javed and Yasar Ayaz. “Energy modeling and predictive control of environmental quality for building energy management using machine learning” Energy for Sustainable Development, Vol 74, pages 381-395, May 2023, (ISSN 0973-0826), (doi.org/10.1016/j.esd.2023.04.017)

[8] Ali Javaid, Umer Javaid, Muhammad Sajid, Muhammad Rashid, Emad Uddin, Yasar Ayaz, Adeel Waqas, “Forecasting Hydrogen Production from Wind Energy in a suburban environment using Machine Learning”, Energies, Vol 15, 8901, MDPI November 2022 (ISSN 1996-1073), (DOI: doi.org/10.3390/en15238901)

[9] Bushra Rasheed, Asmara Safdar, Muhammad Sajid, Sara Ali and Yasar Ayaz “Assessment of solar load models for bifacial PV panels”, Frontiers in Energy Research, November 2022 (ISSN: 2296-598X) (DOI: 10.3389/fenrg.2022.1019595)

[10] Syed Altan Haider, Muhammad Sajid, Hassan Sajid, Emad Ud din, Yasar Ayaz “Deep learning and statistical methods for short- and long-term solar irradiance forecasting for Islamabad” Renewable Energy, Volume 198, Pages 51-60, Science Direct October 2022 (ISSN:0960-1481) (DOI: doi.org/10.1016/j.renene.2022.07.136)

[11] Syed Muhammad Nashit Arshad; Yasar Ayaz; Sara Ali; Ali R. Ansari; Raheel Nawaz “Experimental Study on Slosh Dynamics Estimation in a Partially Filled Liquid Container Using a Low-Cost Measurement System” IEEE Sensors Journal, August 2022, (ISSN: 1530-437X), (DOI: 10.1109/JSEN.2022.3188114)

[12] Saeed Iqbal, Shahid Nawaz Khan, Muhammad Sajid, Jawad Khan, Yasar Ayaz, Adeel Waqas “Impact and performance efficiency analysis of grid-tied solar

photovoltaic system based on installation site environmental factors" Energy and Environment, Sage Journals, June 2022 (ISSN:0958-305X,2048-4070) (DOI: doi.org/10.1177/0958305X221106618)

[13] Khurram Khalil, Umer Asgher and Yasar Ayaz "Novel fNIRS study on homogeneous symmetric feature-based transfer learning for brain-computer interface" Scientific Reports 12, Article number: 3198 (2022), Spring Nature, February 2022 (ISSN: 2045-2322) (DOI: 10.1038/s41598-022-06805-4)

[14] Nihad Ali, Yasar Ayaz, and Jamshed Iqbal, "Collaborative Position Control of Pantograph Robot Using Particle Swarm Optimization" International Journal of Control, Automation and Systems- 20, pages198–207, Springer Nature, January 2022 (ISSN:1598-6446) (DOI 10.1007/s12555-019-0931-6)

[15] Tehseen Akhtar; Syed Omer Gilani; Zohaib Mushtaq; Saad Arif; Mohsin Jamil; Yasar Ayaz; Shahid Ikramullah Butt; Asim Waris, "Effective Voting Ensemble of Homogenous Ensembling with Multiple Attribute Selection Approaches for Improved Identification of Thyroid Disorder" Electronics 2021, 10(23), 3026, December 2021 (ISSN 2079-9292) (DOI: https://doi.org/10.3390/electronics10233026)

[16] Saad Arif, Muhammad Jawad Khan, Noman Naseer, Keum-Shik Hong, Hasan Sajid, and Yasar Ayaz. "Vector Phase Analysis Approach for Sleep Stage Classification: A Functional Near-Infrared Spectroscopy-Based Passive Brain-Computer Interface." Frontiers in Human Neuroscience, April 2021, Vol:15 Article:658444, (ISSN: 1662-5161) (DOI 10.3389/fnhum.2021.658444)

[17] Umer Asgher, Muhammad Jawad Khan, Muhammad Hamza Asif Nizami, Riaz Ahmad, Yasar Ayaz, Khurram Khalil, and Noman Naseer, "Motor training using mental workload (MWL) with an assistive Soft Exoskeleton system; an fNIRS Study for brain-machine interface (BMI)", Frontiers in Neurorobotics, March 2021, Vol 15, Article 605751 (ISSN: 1662-5218) (DOI: 10.3389/fnbot.2021.605751)

[18] Faisal Mehmood, Hamed Mahzoon, Yuichiro Yoshikawa, Hiroshi Ishiguro, Haleema Sadia, Sara Ali, and Yasar Ayaz, "Attentional behavior of children with ASD in response to robotic agents", IEEE Access, February 2021 (ISSN: 2169-3536) (doi: 10.1109/ACCESS.2021.3056211)

[19] Hammad Nazeer, Noman Naseer, Aakif Mehboob, Muhammad Jawad Khan, Rayyan Azam Khan, Umar Shahbaz Khan, Yasar Ayaz, "Enhancing Classification Performance of fNIRS-BCI by Identifying Cortically Active Channels Using the z-Score Method", Sensors, MDPI, Vol. *20*, No. 23, 6995, December 2020. (DOI: 1424-8220) (DOI: https://doi.org/10.3390/s20236995)

[20] Hamza Asif, Zaid Ahsan Shah, Yasar Ayaz, Muhammad Jawad Khan, Sara Ali, Naveed Muhammad, Khalid Akhtar, Darren Dancey, and Raheel Nawaz, "Proximal

Actuation of an Elastically Loaded Scissors Mechanism for the Leg Design of a Quadruped Robot", in IEEE Access, Vol. 8, pp. 208240 - 208252, 2020. (ISSN: 2169-3536) (DOI: 10.1109/ACCESS.2020.3037250)

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13. PROFESSIONAL AWARDS / SCHOLARSHIPS:

a. Conferred with BRAIN Award 2022-23 for NUST Top Performer 2022 by Rector NUST (7th August 2024)

b. Conferred with **Presidential Award** for **Pride of Performance** by **Govt of Pakistan** (14 August 21).

c. Conferred with **PEC Engineers' Excellence Award** by **Pakistan Engineering Council** at **Aiwan-e-Sadar, Islamabad.** (18 Oct 2022).

d. Conferred with **Lifetime Achievement Award** by **IEEE Islamabad Section** (3rd Feb 2023)

e. **National Record:** Maximum number of International Research Papers authored from any final degree project in the field of engineering in Pakistan. (10 x Research Papers). Pakistan Book of Records (24 November 2017).
Awarded PBR Gold Medal by Pakistan Book of Records.

f. **National Record:** Maximum number of Research Papers in International Journals bearing Thomson Reuters Impact Factor authored from any final degree project in the field of engineering in Pakistan. (3 x Papers) – Pakistan Book of Records (24 November 2017).
Awarded PBR Gold Medal by Pakistan Book of Records.

g. Named as **one of the Top 20 Most Eminent Scientists of Pakistan** by **National Academy of Young Scientists of Pakistan (NAYS)**. (10 March 2017 – Scientists Day)

h. Accorded **Beset Researcher Award** for School of Mechanical and Manufacturing Engineering (SMME), NUST for the Year of 2019-20)

i. Biography included in Marquis **Who's Who in the World 2013**, Berkley, USA for extraordinary international contribution to research and education in the field of Robotics.

j. **Cited by leading universities in more than 13 countries** including USA, Japan, France, Germany, Hungary, South Korea, Canada, China, Iran, Croatia, Singapore, Australia, Pakistan etc.

k. Research Paper on TG-RRT* declared **Top Most Popular paper of ISI Indexed International Journal of Advanced Robotic Systems** for 3 consecutive weeks during February – March 2015.

l. Research on Robotic Grasping using Soft Fingers accorded **Third Best Technical Paper Award** at International Conference on Climbing & Walking Robots: **CLAWAR 2013, Sydney, Australia.**

m. **Visiting Professor at New York University (NYU), Abu Dhabi Campus** in their Research Centric Summer School on Interactive Robotics and Media, June 2012.

n. Named **Best Teacher of the Year** by the Faculty Board of Studies, NUST School of Mechanical and Manufacturing Engineering for the years 2010 and 2011.

o. Awarded Japanese Government Monbukagakusho / MEXT Merit Scholarship for Doctoral Studies in Japan.

p. Awarded NUST Merit scholarships for undergraduate (B.Sc Engg) as well as postgraduate (M.Sc Engg) studies at the College of E&ME, Rawalpindi, Pakistan.

q. Sponsorships won for presenting research papers at International Conferences (held in various countries) during studies at Tohoku University, Japan as well as NUST, Pakistan.

14. CO-CURRICULAR / EXTRA-CURRICULAR ACTIVITIES:

a) Aikido (Japanese Martial Art), Rank: 4th Kyu. (Member: Miyagi Ken Martial Arts Center).
b) Member International Cultural Exchange Committee, Sendai International Relations Association
(SIRA), Sendai City International Center, 2009.
c) **Secretary General** Monbukagakusho/MEXT Alumni Association of Pakistan (Japanese Universities Alumni). Apr 2017 – Oct 2019
d) Vice President Monbukagakusho/MEXT Alumni Association of Pakistan (Japanese Universities Alumni) Oct 2019 – Nov 2021
e) Secretary General, Pakistan Students Association of Japan (PSAJ) 2008–09.
f) Training of English Language Teachers for Japanese Elementary Schools, Miyagi Prefecture,
2009.
g) Pakistan Style International Rock Band: Inteha (Lead vocals) 2007– 09.
h) Co-ordination Secretary, Pakistan Students Association of Japan (PSAJ) 2007–08.
i) Secretary for Culture and Publications, Tohoku University Muslim Cultural Association (TUMCA) 2007–08.
j) Co-author, International Students Housing Handbook (Japanese / English) published by Japan
Student Services Organization (JASSO), 2007.
k) Speaker (Japanese), International Students Housing Workshop organized by Japan Student
Services Organization (JASSO), Akita University, November 14, 2007.
l) Secretary General, Tohoku University Muslim Cultural Association (TUMCA), 2006–07.
m) Awarded Gold Medal for being the Best English Orator of the passing out batch of 2003 at
College of EME, NUST.
n) President Literary Club, Society for Promotion of Arts and Literature (SPAL), College of EME,
NUST, 2002–03.
o) Vice President, Society for Advanced Learning (SAL), College of EME, NUST, 2001-02.
p) Author of various newspaper articles published by Pakistan's English daily: The News International.
q) Awarded prize for being the Best in Naat Khwani, Cadet College HasanAbdal, 1998-99.

15. PROFICIENCY IN LANGUAGES:

	Language	Conversation	Reading	Writing
a.	English	Excellent	Excellent	Excellent
b.	Urdu	Excellent	Excellent	Excellent
c.	Japanese	Very Good	Good	Fair

16. CONTACT INFORMATION:

Address: Chairman/Central Project Director,
National Centre of Artificial Intelligence (NCAI),
National University of Sciences and Technology (NUST),
Sector H-12, Islamabad, Pakistan.

Tel: +92(0)51-9085-6951 Email: cpd@ncai.nust.edu.pk

Fax: +92(0)51-9085-6952 yasar@smme.nust.edu.pk

Mobile Tel: +92-(0)312-539-0074 Website: https://ncai.pk/
http://rise.smme.nust.edu.pk/