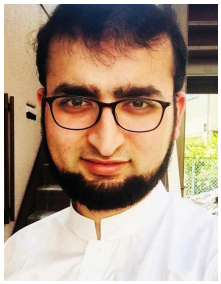
Khawaja Fahad Iqbal

Scientific Director @ NCAI. Researcher in AI and Robotics..



Experience

Scientific Director / Principal Investigator - National Center of Artificial Intelligence (NCAI), Sector H-12, Islamabad, Pakistan.

Jul 2025 – Present

Description: NCAI is a technological initiative of the Government of Pakistan under the government's Vision 2025. The center is designed to become the leading hub of innovation, scientific research, knowledge transfer to the local economy, and training in the area of Artificial Intelligence (AI) and its closely affiliated fields under the umbrella of Higher Education Commission (HEC) of Pakistan. As Scientific Director / Principal InvestigatorI of Intelligent Robotics Lab, I am supervising a team of researchers carrying out projects in various domains of Artificial Intelligence and Robotics. We are investigating the applications of Artificial Intelligence in Robotics and Natural Language Processing to deliver meaningful products and services for the growing needs of Pakistan's economy. Some of our research areas include Motion Planning, Human-Robot Interaction (HRI), Collaborative Robots, Mobile Robots, SLAM, Humanoid Robots, Reinforcement Learning, and Augmented Reality.

CEO - RISE AI Pvt. Ltd., National Science and Technology Park (NSTP), Sector H-12, Islamabad, Pakistan.

Oct 2022 - Present

Description: RISE AI Pvt. Ltd. is a spin-off of the National University of Sciences and Technology (NUST) registered with the National Science and Technology Park (NSTP). It provides consultancy and training to the traditional institutes, local industries, and SMEs and helps them automate their products and services. Industries all over the world are using artificial intelligence, robotics, and automation to increase their productivity and improve the quality and consistency of their products and services. With the advent of Industry 4.0, we feel that this is the right time for Pakistan to catch up with the developed world. Composed of leading experts of Pakistan with a combined experience of over 35 years, Rising Automation is a one-stop solution for all your artificial intelligence and automation needs.

Assistant Professor — National University of Sciences and Technology (NUST), Sector H-12, Islamabad, Pakistan.

September 2022 - Present

Department of Robotics and AI, School of Mechanical and Manufacturing Engineering (SMME).

Postgraduate Courses Taught:

7. CS-876: Augmented and Virtual Reality (Fall 2025)
6. AI-832: Reinforcement Learning (Fall 2024)
5. RIME-811: Robot Mechanics and Control (Spring 2024)
4. RIME-411: Engineering Mechanics (Fall 2023)
3. RAI-816: Robot Design (Spring 2022, Spring 2025)
2. RM-898: Research Methodology (Spring 2022)
1. RIME-837: Simultaneous Localization and Mapping (Fall 2021, Fall 2022, Fall 2023)

Undergraduate Courses Taught:

6. ME-301 Control Engineering (Spring 2025)
5. CS-114 Application of ICT (Fall 2024, Fall 2025)
4. CS-114: Fundamentals of Programming (Fall 2023)
3. EE-227: Electronics Engineering (Spring 2023)
2. EE-103: Electrical Engineering (Fall 2021, Fall 2022)
1. ME-489: Robotics and Automation (Fall 2021)

Contact

Address:
318F, SMME, NUST, Sector H-12, Islamabad, Pakistan.
Phone:
+92-51-9085-6026
Mobile:
+92-332-515-7832
Email:
fahad.iqbal@smme.nust.edu.pk

Achievements

Supervisor of the 1st overall best project at SMME NUST Open House 2024.

Won the best paper award at the 3rd IEEE International Conference on Artificial Intelligence (ICAI 2023).

Supervisor of the 3rd overall best project at SMME NUST Open House 2023.

Secured Japanese Government MEXT Scholarship for PhD 2017-2020.

Secured Japanese Government MEXT Scholarship for MS 2015-2017.

Secured 1st Position in Japan's MEXT Scholarship Entrance Exam for Pakistan in 2013.

Secured NUST Merit Scholarship throughout the bachelor's degree in Mechatronics Engineering

Co- Principal Investigator - National Center of Artificial Intelligence (NCAI), Sector H-12, Islamabad, Pakistan.

Nov 2022 – Jul 2025

Postgraduate Program Coordinator — National University of Sciences and Technology (NUST), Sector H-12, Islamabad, Pakistan.

September 2022 - Feb 2024

Department of Robotics and AI, School of Mechanical and Manufacturing Engineering (SMME).

Description: Served as the link between the students and the administration. Ensured that the students get all the required information in a timely manner so that they can smoothly fulfill all the requirements for obtaining their MS and PhD degrees.

Research Assistant — Tohoku University, Sendai, Japan.

April 2020 - August 2021

Smart Robots Design Lab (Hirata Lab), Department of Robotics, School of Mechanical Engineering.

Supervisor: Professor Yasuhisa Hirata

Description: Our research was related to Human-Robot Interaction (HRI) and robot motion planning. The aim of our project was to develop an intelligent robot system that would collaborate with a factory worker and provide assistance in carrying out car assembly tasks.

Lab Engineer — National University of Sciences and Technology (NUST), Islamabad, Pakistan.

October 2012 - March 2014

Department of Robotics and Artificial Intelligence, School of Mechanical and Manufacturing Engineering (SMME).

Supervisor: Professor Yasar Ayaz

Labs Conducted:

4. Electrical Engineering (Spring 2014, Spring 2013)
3. Engineering Drawing (Spring 2014)
2. Computer Systems and Programming (Fall 2013)
1. Logic Design and Microprocessors (Spring 2013)

2007-2011

Scored 118/120 in TOEFL iBT Englis Proficiency Exam.

Research and Industrial Fundings (122.24 M PKR)

Sr.	Project Name	Funding Agency	Amount (M PKR)	Project Duration
8.	AI-based Physical Frailty Assessment System for the Elderly	Juntendo University, Japan	8.800	1 year Sep 2024 - Aug 2025
8.	Revised PC-1 for Intelligent Robotics Lab at National Center of Artificial Intelligence	Higher Education Commission (HEC), Pakistan.	30.100	2 years Jul 2024 - Jun 2026
7.	Design and Development of Quadrupedal Robot	National Grass Root Research Initiative (NGIRI) by Ignite, Pakistan.	0.077,461	1 year (Jul 2023 - Jun 2024)

6.	AGILE (Artificial General Intelligence Learning Engine)	NUST Flagship Project	1.000	1 Year Jan 2024 - Dec 2024
5.	NGIRI-2023-18933: 'Development of Mobile Robot for Warehouse Automation'.	National Grass Root Research Initiative (NGIRI) by Ignite, Pakistan.	0.069,651	1 year (Jul 2022 - Jun 2023)
4.	Robogen	National Examination and Evaluation Foundation (NEEF), Pakistan.	0.500	6 months (Sep 2022 - Feb 2023)
3.	Preserving Intellectual and Material Cultural Heritage through Augmented and Virtual Reality	HEC National Research Program for Universities (NRPU)	10.549	3 Years April 2022 - April 2025
2.	NGIRI-2022-12733: 'Autonomous Mobile Robot'.	National Grass Root Research Initiative (NGIRI) by Ignite, Pakistan.	0.045,670	1 year (Jul 2021 - Jun 2022)
1.	Intelligent Robotics Lab at National Center of Artificial Intelligence.	Higher Education Commission (HEC), Pakistan.	71.100	4 years (July 2020 - Jun 2024)

Trainings, Workshops and Short Courses Conducted

Sr.	Training Name	Organizing Agency	No. of Students	Duration
18.	Unlocking Robotics with ROS2	Department of Robotics and AI, SMME, NUST	13	2 Days (24th-25th April 2025)
17.	Certified AI Professionals (CAIP) - Cohort 3	National Center of Artificial Intelligence (NCAI), Pakistan.	12	4 weeks (December 2024)
16.	da Vinci Research Kit (dVRK) and the World of Medical Robotics (Part - II)	Department of Robotics and AI, SMME, NUST	20	1 Day (13th November 2024)
15.	Hardware Deployment of AI Models	Inspectorate of Electronics & Instruments (IE&I), Rawalpindi	11	2 weeks (November 2024)
14.	da Vinci Research Kit (dVRK) and the World of Medical Robotics (Part - I)	Department of Robotics and AI, SMME, NUST	42	1 Day (29th August 2024)
13.	Certified AI Professionals (CAIP) - Cohort 3	National Center of Artificial Intelligence (NCAI), Pakistan.	9	4 months (Nov 2023 - Mar 2024)
12.	High Impact IT Training	National Vocational and Technical Training Commission (NAVTTC).	24	6 weeks (July 2024 - Sep 2024)
11.	AI & Robotics	National Vocational and Technical Training Commission (NAVTTC).	35	3 months (Apr 2024 - Jul 2024)
10.	Certified AI Professionals	National Center of Artificial Intelligence (NCAI),	18	4 months

	(CAIP) - Cohort 2	Pakistan.		(Nov 2023 - Mar 2024)
9.	Robogen 2	National Examination and Evaluation Foundation (NEEF), Pakistan	20	2 weeks (6-19 Nov 2024)
8.	Robotics and AI Bootcamp	National Center of Artificial Intelligence (NCAI), Pakistan.	12	2 weeks (18 July 2023 - 01 Aug 2023)
7.	Internet of Things (IoT)	National Vocational and Technical Training Commission (NAVTTC).	25	3 months (Jun 2023 - Sep 2023)
6.	Practical Reinforcement Learning	Coventry University, UK and Department of Robotics & AI, SMME, NUST	33	1 week (05-09 Jun 2023)
5.	Certified AI Professionals (CAIP) - Cohort 1	National Center of Artificial Intelligence (NCAI), Pakistan.	22	4 months (Apr 2023 - Aug 2023)
4.	Robogen	National Examination and Evaluation Foundation (NEEF), Pakistan	20	2 weeks (31 Oct 2022 - 11 Nov 2022)
3.	AI & Robotics	National Vocational and Technical Training Commission (NAVTTC).	50	6 months (Apr 2022 - Sep 2022)
2.	NERC Workshop 2012	Department of Mechatronics Engineering, CEME, NUST.	20	1 week (16-23 Feb 2012)
1.	Introduction to Microcontrollers	Department of Computer Engineering, CEME, NUST.	25	2 weeks (07-20 Jul 2010)

Media Appearances

Sr.	Media Agency	Date	Program Name	Program Topic	Link
5.	NHK World	12th May 2025	NHK World News	Pakistan's flourishing IT talent going global	https://youtu.be/CAap3kXhU-w?si=tU8x2Q4E6kMiEQ5C
4.	NHK Japan	22nd April 2025	キャッチ! (Catch!)	パキスタン　IT人材の最前線 (Pakistan: The Forefront of IT Talent)	https://www.nhk.jp/p/catchsekai/ts/KQ2GPZPJWM/episode/te/WXVKRW3Z75
3.	SUNO FM 89.4	28th July 2023	Suno Mornings with Danish Saeed	The New IT Policy Introduced by the Government of Pakistan	https://fb.watch/m70w75VxG7/
2.	NHK Radio	01st Aug 2022		Life After PhD from Japan	
1.	SUNO FM 89.4	23rd Nov 2021	Suno Mornings with Danish Saeed	The Prospects of AI in Pakistan	https://fb.watch/m73v4Ukz9o/

Invited Talks

Sr.	Topic	Date	Event	Venue
10.	AI Applications in Healthcare	13th May 2025	Innovation and Development in Global Health	Juntendo University, Tokyo, Japan. (Online)
9..	Robotics and AI in Healthcare	05th Dec 2024	IEEE Engineering in Medicine and Biology Society (EMBS) Hitec	Hitec University, Taxila, Pakistan

			Chapter	
8.	Advances in AI for Chemical Safety	22nd-24th Oct 2024	Global Conference on the Role of Artificial Intelligence in Implementation of the Chemical Weapons Convention	Rabat, Morocco
7.	Applications of AI	13th Jun 2024	Air Command and Staff Course (AC&SC)	Air Command and Staff School (AC&SS), Badaber
6.	NCAI on the forefronts of AI in Pakistan	29th May 2024	Artificial Intelligence Conference and Expo 2024 (AICE)	Pak Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF-IAST), Haripur, Pakistan.
5.	Role of AI in Combating Chemical Incidents	13th Nov 2023	Integrated Advanced Course and Exercise on Assistance and Protection Against Chemical Weapons	National Center for Physics, Islamabad, Pakistan.
4.	Applications of AI	02nd Oct 2023	51 CBRN Survival Course	Minhas, Kamra
3.	AI and Robotics: My Journey So Far	18th July 2023.	AI and Robotics Bootcamp of National Center of Artificial Intelligence (NCAI)	NUST, Sector H-12, Islamabad, Pakistan.
2.	The World After ChatGPT: And Its Impact on Chem-Bio Defense	05th July 2023	Seminar on Chem-Bio Threat	National Center for Physics, Islamabad, Pakistan.
3.	Career Prospects in Robotics and Artificial Intelligence	15th Aug 2021	Science Camp of WeePro STEAM Trainings	Online event
1.	Unsupervised Learning: A Brief Primer	19th Jan 2019	TEDx Tohoku University	Tohoku University, Sendai, Japan.

Thesis Supervised

PhD Thesis

2. An Intelligent Collaborative System For Multiagent Human Robot Teams. (Jun 2025 - Present)
1. Performing Robot Actions in Abstractive Manner Through Natural Language Processing (Jan 2023 - Present)

Masters Thesis:

16. Corrosion Inspection Based on Point Cloud Data (May 2025 - Present)
15. Computer Vision based Weeding for Agricultural Robots (May 2025 - Present)
14. Robotic Training using Generative AI (May 2025 - Present)
13 .Estimation of Psychological Parameters during Human Robot Collaboration (May 2025 - Present)
12. Visual SLAM in Dynamic Environments (Mar 2025 - Present)
11. Control of Flywheel Inverted Pendulum Using Reinforcement Learning (Sep 2024 - July 2025)
10. Drug Discovery Using Generative AI (Aug 2024 - Aug 2025)
9. Physics inspired Machine learning simulator for heating and insulation effects on houses (Jan 2024 - Present)
8. Balancing Inverted Pendulum Using Deep Reinforcement Learning Through Visual Feedback (Sep 2023 - July 2025)
7. Addressing the Problem of Sloshing in a Liquid Carrying Mobile Robot Through AI (June 2023 - Aug 2025)

6. Development of Safety/Ethical Framework for Metaverse (Jan 2023 - Oct 2024)

5. Robot Motion Planning Using Deep Reinforcement Learning (Sep 2022 - Aug 2025)

4. Impact Dynamics for Humanoid Robot (July 2022 - Nov 2024)

3. Fast Marching Trees (FMT*) for Dynamic Motion Planning (May 2022 - Oct 2024)

2. Augmented Reality Based SLAM (Feb 2022 - Aug 2024)

1. Gait Generation for Quadrupedal Robots (Jan 2022 - Oct 2024)

Bachelors Thesis:

8. Frailty Assessment for the Elderly (Sep 2024 -May 2025) **(Project featured on NHK World, Japan)**

7. Design and Development of a Cricket Bowling Machine (June 2024 - May 2025)

6. 4-DOF Robotic Arm for Industrial Automation (Sep 2023 - May 2024) **(Won 1st Prize at SMME Open House 2024)**

5. Design and Development of a 12-DOF Quadrupedal Robot (Sep 2023 - May 2024)

4. Design and Development of 5-Axis Parallel Kinematic Robot (Sep 2023 - May 2024)

3. Design and Fabrication of Automated Storage and Retrieval System (ASRS) Robot (Sep 2022 - June 2023)

2. Autonomous Weeding Agriculture Robot (Sep 2022 - Jun 2023) **(Won 3rd Prize at SMME Open House 2023)**

1. Autonomous Mobile Robot for Picking and Placing Packages in a Warehouse (Sep 2021 - Jun 2022)

Education

PhD (Robotics) — Tohoku University, Sendai, Japan

April 2017 - Sep 2022

System Robotics Lab (Kosuge Lab), Department of Robotics, School of Mechanical Engineering.
CGPA: 3.00/3.00
Supervisor: Professor Kazuhiro Kosuge and Professor Yasuhisa Hirata
Thesis Topic: Motion Planning for Collaborative Robots Using Cost Function based on Human-Robot-Interaction

MS (Bioengineering and Robotics) — Tohoku University, Sendai, Japan

April 2015 - Mar 2017

System Robotics Lab (Kosuge Lab), Department of Robotics, School of Mechanical Engineering.
CGPA: 3.00/3.00
Supervisor: Professor Kazuhiro Kosuge
Thesis Topic: Assembly Planning using Sampling based Approach.

BE (Mechatronics Engineering) — National University of Sciences and Technology, Rawalpindi, Pakistan.

Sep 2007 - Aug 2011

Department of Mechatronics Engineering, College of Electrical and Mechanical Engineering (EME)
CGPA: 3.64/4.00
Supervisor: Dr. Kunwar Faraz and Dr. Yasar Ayaz
Thesis Topic: Intelligent DRIving System (IDRIS)

Online Courses and Trainings Completed

Sr.	Course Name	Completion Date	Duration	University / Organization	Platform
19.	Online Course Development	22nd July 2024	2 weeks	NUST	**NUST Connected Learning (NCL)** https://ncl.nust.edu.pk/
18.	Generative AI for Everyone	07th June 2024	3 weeks	DeepLearning.AI	**Coursera** https://www.coursera.org/learn/generative-ai-for-everyone
17.	Training and Learning Online	01st June 2024	3 weeks	University of Leeds	**Coursera** https://www.coursera.org/learn/training-and-learning-online
16.	How to Get Into Robotics	30th May 2024	2 weeks	University of Leeds	**Coursera** https://www.coursera.org/learn/how-to-get-into-robotics
15.	Occupational Health and Safety	27th Mar 2024	1 day	National Productivity Organization, Pakistan	
14.	Introduction to Augmented Reality and ARCore	16th Aug 2023	4 weeks	Google AR & VR	**Coursera** https://www.coursera.org/learn/ar
13.	Building Internationalization in Universities in Pakistan	17th July 2023	4 weeks	Cardiff Metropolitan University	**B-International** https://binternational.usal.es/binternational/course/view.php?id=2
12.	Artificial Intelligence: An Overview	06th May 2023	4 weeks	Politecnico di Milano	**Coursera** https://www.coursera.org/learn/artificial-intelligence-an-overview
11.	Collaborative Robot Safety: Design & Deployment	24th Apr 2023	4 weeks	University at Buffalo	**Coursera** https://www.coursera.org/learn/collaborative-robot-safety
10.	Python Basics	16th Apr 2023	4 weeks	University of Michigan	**Coursera** https://www.coursera.org/learn/python-basics
9.	Introduction to Artificial Intelligence (AI)	08th Apr 2023	4 weeks	IBM	**Coursera** https://www.coursera.org/learn/introduction-to-ai
8.	Mastering Digital Twins	28th Aug 2022	4 weeks	EIT Digital	**Coursera** https://www.coursera.org/learn/mastering-digital-twins
7.	Calculus One	28th Nov 2016	16 weeks	The Ohio State University	**Coursera** https://www.coursera.org/learn/calculus1
6.	Introduction to Thermodynamics	04th Jan 2015	8 weeks	University of Michigan	**Coursera** https://www.coursera.org/learn/introthermodynamics
5.	Introduction to Engineering Mechanics	16th Oct 2014	5 weeks	Georgia Institute of Technology	**Coursera** https://www.coursera.org/learn/statics1
4.	The Data Scientist's Toolbox	08th July 2014	4 weeks	Johns Hopkins University	**Coursera** https://www.coursera.org/learn/data-scienti

					sts-tools
3.	An Introduction to Interactive Programming in Python	03rd Jun 2014	9 weeks	Rice University	**Coursera** https://www.coursera.org/learn/interactivepython
2.	Control of Mobile Robots	18th Mar 2014	7 weeks	Georgia Institute of Technology	**Coursera** https://www.coursera.org/learn/conrob
1.	Machine Learning	12th Nov 2013	10 weeks	Stanford University	**Coursera** https://www.coursera.org/learn/ml

Editorial Activities

Associate Editor

1. 11th International Defense Exhibition and Seminar (IDEAS) 2022 – AI Seminar. (Sep 2022 – Nov 2022)

Reviewer (Journals)

12. Intelligent Service Robotics (May 2025 - Present)
11. Engineering Applications of AI (April 2025 - Present)
10. Machines (April 2025 - Present)
9 .Computers and Electronics in Agriculture (April 2025 - Present)
8.Energy for Sustainable Development (Apr 2025 - Present)
7. Drones (Oct 2024 - Present)
6. IEEE Access (Aug 2024 - Present)
5. **Agronomy (July 2024 - Present)**
4. Applied Sciences (Jan 2023 -Present)
3. Sensors (Dec 2022 - Present)
2. Cobot (Aug 2022 – Present)
1. Journal of Integrated and Advanced Engineering (JIAE) - (Sep 2022 – Present)

Reviewer (Conferences)

1. IEEE International Conference on Robotics and Automation (ICRA) – (Nov 2019 -Present)
2. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) – (Apr 2023 - Present)
3. IEEE International Conference on Artificial Intelligence (ICAI) – (Jan 2022 – Present)
4. 11th International Defense Exhibition and Seminar (IDEAS) 2022 – AI Seminar. (Sep 2022 – Nov 2022)
5. International Bhurban Conference on Applied Sciences & Technology (IBCAST) – (Aug 2023 - Present)
6. International Conference on Digital Futures and Transformative Technologies (ICoDT2) – (Aug 2023 - Present)
7. IEEE International Conference on Digital Futures and Transformative Technologies (ICoDT2) - (Aug 2023 - Present)

Research Publications

Book Chapters

1. F. I. Khawaja, A. Kanazawa, J. Kinugawa, and K. Kosuge, "A Human-Following Motion Planning and Control Scheme for Collaborative Robots Based on Human Motion Prediction", In "Human-Robot Collaboration in Industrial Automation", edited by Anne Schmitz, pp 41- 58, Switzerland, MDPI, 2022.

Journal Papers

9. Talha, M.; Malik, N.M.; Nasir, M.T.; Khalid, W.; Safdar, M.; Iqbal, K.F. Working Fluid Selection for Biogas-Powered Organic Rankine Cycle-Vapor Compression Cycle. Mater. Proc. 2025, 23, 1. https://doi.org/10.3390/materproc2025023001

8. (**Q1, Impact Factor: 3.0**) Khan, S., Ali, S., Iqbal, K.F. et al. Active interception of moving ball: a multi-player strategy for humanoid soccer robots. Multimed Tools Appl (2024). https://doi.org/10.1007/s11042-024-20491-6

7. **(Q2, Impact Factor: 3.9)** A. Jaffar, S. Ali, K.F. Iqbal, Y. Ayaz, A.R. Ansari, M.A.B. Fayyaz, R. Nawaz, "A Comprehensive Multimodal Humanoid System for Personality Assessment Based on the Big Five Model," in IEEE Access, vol. 12, pp. 84261-84272, 2024, doi: 10.1109/ACCESS.2024.3412931.

6. **(Q2, Impact Factor: 3.1)** M. Shahid, S.N. Khan, K.F. Iqbal, S. Ali, Y. Ayaz, "Dynamic Goal Tracking for Differential Drive Robot using Deep

Reinforcement Learning", Neural Process Lett (2023). https://doi.org/10.1007/s11063-023-11390-2.

5. **(Q1, Impact Factor: 4.6)** Batool, S., Gilani, S.O., Waris, A., Iqbal, K.F., Khan, N.B., Khan, M.I., Eldin, S.M., Awwad, F.A., Deploying efficient net batch normalizations (BNs) for grading diabetic retinopathy severity levels from fundus images. Sci Rep 13, 14462 (2023). https://doi.org/10.1038/s41598-023-41797-9

4. **(Q1, Impact Factor: 4.562)** H. Idrees, S. Ali, M. Sajid, M. Rashid, F.I. Khawaja, Z. Ali, M.N. Anwar, "Techno-Economic Analysis of Vacuum Membrane Distillation for Seawater Desalination", Membranes 2023, 13, 339. https://doi.org/10.3390/membranes13030339

3. **(Q1, Impact Factor: 3.576)** F. I. Khawaja, A. Kanazawa, J. Kinugawa, and K. Kosuge, "A Human-Following Motion Planning and Control Scheme for Collaborative Robots Based on Human Motion Prediction," Sensors, vol. 21, no. 24, p. 8229, Dec. 2021. doi.org/10.3390/s21248229

2. Iqbal, K.F.; Kanazawa, A.; Ottaviani, S.R.; Kinugawa, J.; Kosuge, K. A real-time motion planning scheme for collaborative robots using HRI-based cost function. International Journal of Mechatronics and Automation 2021, 8, 42–52. doi:10.1504/IJMA.2021.113727.

1. Shehryar Ali Khan, Yasar Ayaz, Mohsin Jamil, Syed Omer Gillani, Muhammad Naveed, Ahmed Hussain Qureshi and Khawaja Fahad Iqbal, "Collaborative Optimal Reciprocal Collision Avoidance for Mobile Robots", International Journal of Control and Automation (IJCA), Vol 8, No 8, pp 203-212, 2015

Conference Papers

18. U. Asgher, S. Ali, T. Ali, Y. Ayaz, S. Scataglini, S. Nazir, U. Rashed, E. Abdi, F. Khawaja, R. Taiar, J. Arzola-Ruiz, (2023). Socio-Cultural Factors of Industrial Workers in Low-Middle Income Countries (LMIC): Pilot Study. In: Lucas Paletta, Hasan Ayaz and Umer Asgher (eds) Cognitive Computing and Internet of Things. AHFE (2023) International Conference. AHFE Open Access, vol 73. AHFE International, USA. http://doi.org/10.54941/ahfe1003296

17. S. M. Nashit Arshad, Y. Ayaz, S. Ali, K. F. Iqbal and N. Naseer, "Modeling and Control of Liquid Carrying Aerial Vehicle's Endurance and Performance Based on LQR And PID Control Strategies," 2023 7th International Multi-Topic ICT Conference (IMTIC), Jamshoro, Pakistan, 2023, pp. 1-6, doi: 10.1109/IMTIC58887.2023.10178472.

16. **(Won best paper award)** S. Ali, F. Mehmood, K.F. Iqbal, Y. Ayaz, M. Sajid, M.B. Sial, M.F. Malik, K. Javed., "Human Robot Interaction: Identifying Resembling Emotions Using Dynamic Body Gestures of Robot," 2023 3rd International Conference on Artificial Intelligence (ICAI), Islamabad, Pakistan, 2023, pp. 39-44, doi: 10.1109/ICAI58407.2023.10136649.

15. S. Iqbal, S.N. Khan, M. Sajid, S. Ali, F.I. Khawaja, U. Asgher, Y. Ayaz, Y. (2022). Novel Approach for Sensing the Humanoid Hand Finger Position Using Non-contact TMR Sensor. In: Umer Asgher (eds) Industrial Cognitive Ergonomics and Engineering Psychology. AHFE (2022) International Conference. AHFE Open Access, vol 35. AHFE International, USA. http://doi.org/10.54941/ahfe1001599

14. M. Ammar, M.M. Ahmed, M.A. Younas, K. Qayyum, F.I. Khawaja, U. Asgher, S. Ali, Y. Ayaz, Y. (2022). A Chain-Driven Live Roller Mechanism for Loading and Unloading Packages on Autonomous Mobile Robots in Warehouses. In: Umer Asgher (eds) Industrial Cognitive Ergonomics and Engineering Psychology. AHFE (2022) International Conference. AHFE Open Access, vol 35. AHFE International, USA. http://doi.org/10.54941/ahfe100160013.

13. A. Jaffer, S. Ali, F.I. Khawaja, Y. Ayaz, M. Sajid, U. Asgher, (2022). Personality Prediction in Human-Robot-Interaction (HRI). In: Umer Asgher (eds) Industrial Cognitive Ergonomics and Engineering Psychology. AHFE (2022) International Conference. AHFE Open Access, vol 35. AHFE International, USA. http://doi.org/10.54941/ahfe1001601

12. Z. Khan, F. Naseer, K. F. Iqbal, S. Ali, M. Sajid and Y. Ayaz, "Smooth Gait Generation for Quadrupedal Robots Based on Genetic Algorithm Optimization," 2022 2nd International Conference on Artificial Intelligence (ICAI), 2022, pp. 122-126, doi: 10.1109/ICAI55435.2022.9773617.

11. Kainat, S. Ali, K. F. Iqbal, Y. Ayaz and M. Sajid, "A Review on Different Approaches for Assessing Student Attentiveness in Classroom using Behavioural Elements," 2022 2nd International Conference on Artificial Intelligence (ICAI), 2022, pp. 152-158, doi: 10.1109/ICAI55435.2022.9773418.

10. Syeda Madiha Qamar, Fahad Iqbal Khawaja, Sara Ali, Ahmed Hussain Qureshi, Yasar Ayaz, Muhammad Naveed and Abdul Ghafoor Abbasi, "An Adaptive Neuro-Fuzzy Inference System to Solve Perceptual Aliasing for Autonomous Mobile Robots", The Twenty-Seventh International Symposium on Artificial Life and Robotics 2022 (AROB 27th 2022), pp 1207-1212, Beppu, Japan, 2022.

9. Ahmed Hussain Qureshi, Saba Mumtaz, Abdul Ahad Ashfaque Sheikh, Khawaja Fahad Iqbal, Yasar Ayaz, and Osman Hasan, "Augmenting RRT* with Local Trees for Real Time Motion Planning in Complex Cluttered Environments", In Proceedings of IEEE International Conference on Methods and Models in Automation and Robotics (MMAR), pp. 657-662, Miedzydroje, Poland, 2014.

8. Shahwar Yaseen, Yasar Ayaz, Khawaja Fahad Iqbal, Naveed Muhammad, Syed Omer Gilani, Mohsin Jamil, and Syed Iritza Ali, "Centre of Mass Avoidance Planner using Radius of Gyration for Reciprocal Velocity Obstacles", In Proceedings of IEEE International Conference on Robotics and Emerging Allied Technologies in Engineering (iCreate), pp. 118-124, Islamabad, Pakistan, 2014.

7. Ahmed Hussain Qureshi, Saba Mumtaz, Khawaja Fahad Iqbal, Yasar Ayaz, Mannan Saeed Muhammad and Osman Hasan , "Triangular Geometry based Optimal Motion Planning using RRT*", In Proceedings of International Workshop on Advanced Motion Control (AMC), pp. 380-385, Yokohama, Japan , March 2014.

6. Badar Ali, Ahmed Hussain Qureshi, Khawaja Fahad Iqbal, Yasar Ayaz, Syed Omer Gilani, Mohsin Jamil, Naveed Muhammad, Faizan Ahmed, Mannan Saeed Muhammad, Whoi-Yul Kim, and Moonsoo Ra , "Human Tracking by a Mobile Robot using 3D Features", Proceedings of IEEE International Conference on Robotics and Biomimetics (RoBio), December, 2013.

5. Ahmed Hussain Qureshi, Khawaja Fahad Iqbal , Saba Mumtaz , Syeda Madiha Qamar , Fahad Islam , Yasar Ayaz, Naveed Muhammad , Mannan Saeed Muhammad, Osman Hasan, Whoi Yul Kim and Moonsoo Ra, "Adaptive Potential Guided Directional-RRT*", Proceedings of IEEE International Conference on Robotics and Biomimetics (RoBio), December, 2013.

4. Badar Ali, Khawaja Khawaja Fahad Iqbal, Yasar Ayaz, Muhammad Naveed, "Human detection and following by a mobile robot using 3D features", Proceedings of International Conference on Mechatronics and Automation (ICMA), pp. 1714-1719, Takamatsu, Japan, 2013.

3. Ahmed Hussain Qureshi, Khawaja Fahad Iqbal, Syeda Madiha Qamar, Fahad Islam, Yasar Ayaz, and Muhammad Naveed, "Potential guided directional-RRT* for fast optimal motion planning", Proceedings of International Conference on Mechatronics and Automation (ICMA), pp. 519-524, Takamatsu, Japan, 2013.

2. Syeda Madiha Qamar, Khawaja Fahad Iqbal, Ahmed Hussain Qureshi, Naveed Muhammad, Yasar Ayaz, and Abdul Ghafoor Abbasi, "A solution to perceptual aliasing through probabilistic fuzzy logic and SIFT", Proceedings of IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), Wollongong, Australia, pp. 1393-1398, 2013.

1. Syed Usman Ahmed, Usman Ali Malik, Khwaja Fahad Iqbal, Yasar Ayaz and Kunwar Faraz, "Sparsed Potential-PCNN for Real Time Path Planning and Indoor Navigation Scheme for Mobile Robots", Proceedings of the IEEE International Conference on Mechatronics and Automation (ICMA), pp. 1729-1734, Beijing, August 2011.