ARSHAD RAUF (Pakistan)

03339915683 (same as Whatsapp) | uet_rauf99@yahoo.com Date of Birth: 9 April 1990 |

Google Scholar https://scholar.google.com/citations?user=O2TK-0sAAAAJ&hl=en |
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Profile Summary

Dedicated and results-driven researcher with a Ph.D. in Control Science and Engineering and over four years of postdoctoral experience specializing in robotics, automation, and nonlinear control systems. Proven expertise in sliding mode control, finite-time control, and robust motion control of robotic manipulators under uncertainties and disturbances. Published 17 peer-reviewed articles, with several more under review. Experienced in MATLAB/Simulink modeling, controller design, and simulation of multi-DOF systems. Currently serving as an IPFP Fellow (Assistant Professor) with a strong commitment to teaching, collaborative research, and innovation in advanced control strategies. Seeking to contribute to cutting-edge research and academic excellence in robotics and intelligent control systems.

Experience

- **University of Science and Technology, Bannu [🌐]** *November 2024 - Till*
  Assistant Professor (IPFP Fellow–HEC, Pakistan) KPK, Pakistan
  - **Teaching and Course Development:** Design and deliver engaging lectures, labs, and workshop
  - **Student Advising and Mentoring:** Mentor students in research projects, internships, and career development
  - **Publication and Dissemination:** Write and publish research papers in reputable journals
  - **Committee Participation:** Serve on departmental and university committees to contribute to decision-making
  - **Professional Development:** Attend conferences, workshops, and seminars to enhance expertise
- **Nanjing University of Aeronautics and Astronautics [🌐]** *December 2020 - October 2024*
  Postdoctoral Research Fellow Nanjing, China
  - **Research Conduct:** Lead & conduct advanced research projects in the field of mechatronics & control engineering
  - **Collaboration and Interdisciplinary Work:** Collaborate with departmental fellow researchers & across disciplines
  - **Publication and Dissemination:** Write and publish research papers in reputable journals
  - **Mentorship and Training:** Mentor graduate and undergraduate students involved in research projects
  - **Grant Writing and Funding Acquisition:** Write grant proposals to secure funding for research projects
- **Capital University of Science and Technology [🌐]** *February 2015 - February 2016*
  Teaching Assistant (TA)) Islamabad, Pakistan
  - Electrical Engineering Department

Education

- **Southeast University** *September 2016 - December 2020*
  PhD (Control Science and Engineering) Nanjing, China
  - **Supervisor: Professor Dr. Li Shihua (IEEE Fellow)**
- **Capital University of Science and Technology** *February 2014 - February 2016*
  MS (Electronics Engineering) Islamabad, Pakistan
- **University of Engineering and Technology** *September 2009 - August 2013*
  BSc (Electronics Engineering) Peshawar, Pakistan

Research Area of Interests

- Robotics and Automation Control
- Motion Control System
- Power Electronics
- Non-Linear Control
- Sliding Mode Control
- Disturbance Compensation

PROJECTS

- **Jiangsu Province Excellent Postdoctoral Program** *2023-2024*
  Project Number: 2023ZB862
  - Finite-Time Control of Robotic Manipulator

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION, T=THESIS

[J.1] Awais Khan, Faiz Ul Islam, Ateeq Ur Rehman, **Arshad Rauf (Corresponding author)**, Muhammad Ilyas (2025). **Optimized network-centric MPC using time-delay autoregressive model**. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*,
https://doi.org/10.1177/09544062251337174

[J.2] **Arshad Rauf**, Umair Javaid, Muhammad Ilyas, Awais Khan (2025). **Continuous Finite-Time Integral Sliding Mode Control of Robotic Manipulator with Input Deadzone and Disturbance/Uncertainty Compensation**. *Transactions of the Institute of Measurement and Control*,
https://doi.org/10.1177/01423312251316140

[J.3] Muhammad Omer Shah, Awais Khan, Muhammad Ilyas, **Arshad Rauf** (2024). **Design and development of test bench for pocket labs**. *Discover Electronics*,
DOI: https://doi.org/10.1007/s44291-024-00030-1

[J.4] Umair Javaid, Michael Basin, **Arshad Rauf**, Salman Ijaz (2024). **Robust Flexible Spacecraft Attitude Tracking under Measurement Errors, Actuator Nonlinearities, and Faults**. *Advances in Space Research*,
DOI: https://doi.org/10.1016/j.asr.2024.10.051

[J.5] Guipu Li, Fangzheng Gao, **Arshad Rauf**, et al. (2024). **Output feedback distributed optimization algorithms of higher-order uncertain nonlinear multi-agent systems**. *Asian Journal of Control*,
DOI: https://doi.org/10.1002/asjc.3361

[J.6] **Arshad Rauf**, Ateeq ur Rehman, Awais Khan, Waseem Abbasi, Kifayat Ullah (2024). **Adaptive control of robotic manipulator with input deadzone and disturbances/uncertainties**. *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*,
DOI: https://doi.org/10.1177/09544062241238806

[J.7] **Arshad Rauf**, Zhengen Zhao, Awais Khan, Muhammad Ilyas, Waseem Abbasi (2023). **Finite-time robust control of robotic manipulator with input deadzone and time-varying disturbance compensation**. *Transactions of the Institute of Measurement and Control*,
DOI: https://doi.org/10.1177/01423312221126231

[J.8] **Arshad Rauf**, Muhammad Zafran, Awais Khan, Abdul R Tariq (2022). **Finite-time nonsingular terminal sliding mode control of converter-driven DC motor system subject to unmatched disturbances**. *International Transactions on Electrical Energy Systems*,
DOI: https://doi.org/10.1002/2050-7038.13070

[J.9] **Arshad Rauf**, Muhammad Zafran, Muhammad Sadiq Ali Khan, Awais Khan, Syed Awais Ali Shah (2021). **Non-singular terminal sliding mode control of converter-fed DC motor system with mismatched disturbance compensation**. *International Journal of Modelling, Identification and Control*,
DOI: https://doi.org/10.1504/IJMIC.2021.123793

[J.10] **Arshad Rauf**, Shihua Li, Rafal Madonski, Jun Yang (2020). **Continuous dynamic sliding mode control of converter-fed DC motor system with high order mismatched disturbance compensation**. *Transactions of the institute of measurement and control*,
DOI: https://doi.org/10.1177/0142331220933415

[J.11] Syed Awais Ali Shah, Bingtuan Gao, Ajeet Kumar Bhatia, Chuande Liu, **Arshad Rauf** (2022). **Anti-vibration control design for TORA based barge-type offshore floating wind turbine using extended order high gain observer**. *Engineering Computations*,
DOI: https://doi.org/10.1108/EC-02-2021-0125

[J.12] Muhammad Ilyas, Syed Ali Raza Shah, **Arshad Rauf (Corresponding author)**, Yousaf Khan, Muhammad Ayaz (2022). **Stabilization of liquid level in a tank system based on fuzzy logic controller**. *Engineering Computations*,
DOI: 10.11591/ijra.v11i4.pp315-323

[J.13] Awais Khan, Xiaoshan Bai, Muhammad Ilyas, **Arshad Rauf**, Wei Xie, Peiguang Yan, Bo Zhang (2022). **Design and application of an interval estimator for nonlinear discrete-time SEIR epidemic models**. *Fractal and Fractional*,
DOI: https://doi.org/10.3390/fractalfract6040213

[J.14] Saeed Ur Rahman, Hai Deng, Muhammad Sajjad, **Arshad Rauf**, Zeeshan Shafiq, Mushtaq Ahmad, Shahid Iqbal (2021). **Angularly stable frequency selective surface for the gain enhancement of isolated multiple input multiple output antenna**. *Microwave and Optical Technology Letters*,
DOI: https://doi.org/10.1002/mop.32980

[J.15] Waseem Abbasi, Fazal Ur Rehman, Ibrahim Shah,**Arshad Rauf** (2021). **Stabilizing control algorithm for nonholonomic wheeled mobile robots using adaptive integral sliding mode**. *International Journal of Robotics and Automation*,
DOI: 10.2316/J.2019.206-4803

[C.1] **Arshad Rauf**, Jun Yang, Rafal Madonski, Shihua Li, Zuo Wang (2019). **Sliding mode control of converter-fed DC motor with mismatched load torque compensation**. In *2019 IEEE 28th International Symposium on Industrial Electronics (ISIE)*, CANADA. DOI: 10.1109/ISIE.2019.8781436

[C.2] Syed Awais Ali Shah, Bingtuan Gao, Nigar Ahmed, Chuande Liu, **Arshad Rauf** (2019). **Disturbance observer-based sliding mode control of TORA system for floating wind turbines**. In *2019 IEEE 9th Annual International Conference on CYBER Technology in Automation, Control, and Intelligent Systems (CYBER)*, CHINA. DOI: 10.1109/CYBER46603.2019.

[T.1] **PhD Thesis**: **High-Precision Speed Regulation for Converter-Fed DC Motor System in the Presence of Disturbances/Uncertainties** (2020)

[T.2] **MS Thesis**: **Steering Algorithm for Nonholonomic Control Systems using Adaptive Sliding and Adaptive Integral Sliding Mode Control** (2016)

Professional Memberships

- IEEE Industrial Electronic Society
- IEEE Control Systems Society
- IEEE Robotics & Automation Society

Achievements

- Jiangsu Province Excellent Postdoctoral Program (2023-2024)
- Fully funded Chinese Government Scholarship (CSC) for PhD (2016-2020)

Professional and Technical Strengths

- Project Management
- Cross functional leadership
- Efficiency improvement and collaborative
- Control systems and electrical engineering principles
- Project management tools and innovation technologies
- Efficiency improvement and collaborative
- Adaptive technologies and documentation tools
- Data analysis skills and academic knowledge integration

Software Skills

C/C++, MATLAB, Assembly Misc: Lab View, MS Project, MS Office AutoCAD-Schematic & Micro wind PSpice, Microprocessor simulator 8051 Microsim, Electronic Work Bench, PLC Simulator, Proteus

Additional Information

Languages: English (Fluent), Chinese (Basic), Urdu (Fluent)

References

1. **Professor Dr. Li Shihua [Fellow IEEE]**
   Vice Dean, School of Automation
   Southeast University, Nanjing, China
   Email: lsh@seu.edu.cn
   Relationship: [PhD Supervisor]

2. **Professor Dr. Jun Yang [Fellow IEEE]**
   Department of Aeronautical and Automotive Engineering
   Loughborough University, UK
   Email: j.yang3@lboro.ac.uk
   Relationship: [PhD Co-Supervisor]

3. **Professor Dr. Rafal Madonski [Senior Member IEEE]**
   Automatic Control and Robotics Deparment
   Silesian University of Technology, Poland
   Email: rafal.madonski@polsl.pl