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Sajad Ahmad Rather

Curriculum Vitae (CV)

Personal Profile

Name	Sajad Ahmad Rather
Parentage	Bashir Ahmad Rather
Date of Birth	07-02-1993
Gender	Male
Marital Status	Married
Corresponding address	Tanghara Kralapora Dahrambugh B.K Pora, Baghe Mehtab, Budgam, Jammu and Kashmir, 190019, India

Research Interests

Evolutionary Computation
Medical Imaging
Nature Inspired Computing
Neural Network Training
Meta-heuristics

Education

Post-Doctoral Fellow (2024-2026)
National Post-Doctoral Fellow (NPDF) in Computer Science and Engineering (***2026***), *IIT Roorkee*, Uttarakhand, India

Post-Doctoral Fellow (2022-2024)
Institute Post-Doctoral Fellow (IPDF) in Computer Science and Engineering (***2024***), *NIT Warangal*, Telangana, India

Doctor of Philosophy (2018-2022)
Doctor of Philosophy **(**PhD) in Computer Science and Engineering (***2022***) *Pondicherry Central University*, Puducherry, India

Post Graduate (2014-2016)
Master of Technology (M.Tech) in Computer Science and Engineering (***2016***), *SRM University (A Deemed to be University)*, Chennai Tamil Nadu, India
(First Class with Distinction**, CGPA = 9.732/10**)

Under Graduate (2010-2014)
Bachelor of Technology (B.Tech) in Computer Science and Engineering (***2014***), *Islamic University of Science and Technology (IUST)* (*A Government State University*), Jammu and Kashmir, India
(First Class with Distinction**, CGPA = 7.73/10**)

12^{th} Higher Secondary School, *Jammu and Kashmir State Board of School Education (JKBOSE)* (***2009***), Jammu and Kashmir, India
(First Class with Distinction**, 74.53%)**

10^{th} High School, *Jammu and Kashmir State Board of School Education* (JKBOSE) (***2007***), Jammu and Kashmir, India
(First Class with Distinction**, 80.80%**)

Others

PG Diploma
- Post Graduate Diploma in Teaching Skills, Pondicherry University, Puducherry, India
- Post Graduate Diploma in Professional Communication of English, Pondicherry University, Puducherry, India

Online Course
- Certificate Course on Multi-objective Optimization Problems and Algorithms, Udemy
- Certificate Course on Optimization Problems and Algorithms, Udemy

Language Course
- Six month certificate course in Arabic Language, IUST Kashmir, India.

Other Achievements

- I was class ***topper*** in class 10th scoring 80.80%, first time in the history of my school; a student has got such a high percentage. Also, I scored 100% marks in Mathematics subject.
- I was a rank holder in my M.Tech degree. My pointer was very high 9.732 on 10 pointer scale (***First Class with Distinction***).
- I was awarded ***"Best Paper Award"*** in ACM conference held at Hyderabad, 2019.

Trainings and Workshops

Dec 24, 2012- 21 Jan, 2013 Oracle, PL/SQL training from DOEACC Centre Srinagar.

Dec 13, 2013 Robomania 2013 organized by Robonext, in association with Shastra-2013, IIT Madras.

Aug 20, 2018 The ICT based workshop entitled," Cluster Based Computing" conducted by Department of Computer Science and Engineering, NIT Srinagar.

Dec 10- 14, 2018 One week workshop on "Machine Learning and Deep Learning" organized by department of Computer Science, Pondicherry university from 10th Dec. 2018 to 14th Dec. 2018.

Jan 12-13, 2018 Two day Workshop entitled, "Machine Learning with AI', organized by Technobyte, in association with SAARANG-2019, IIT Madras.

Feb 12-13, 2019 Pre-conference workshop entitled, "Computational Intelligent Techniques and its Applications" in 2019 3rd IEEE international conference held at SVS Engineering College, Coimbatore, Tamil Nadu.

Mar 12, 2019 Academic Publishing for Quality Research: How to Get Published & Avoid

	Pitfalls - Workshop, Pondicherry University, Puducherry, India.
Dec 21, 2019	Workshop on "Blockchain Technology" Conducted by Kerala Blockchain Academy.
Mar 21-30, 2022	FDP on "Cyber Security Principles and Defensive Mechanisms" conducted by E&ICT Academy, NIT Warangal and Pondicherry University, India.

Teaching Experiences

Sept 16, 2017 – Jun 30, 2018	**Assistant Professor, Department of Computer Science and Engineering,** Govt. College of Eng. and Tech. (GCET), Ganderbal, Jammu and Kashmir
Mar 12, 2026 – Till Now	**Assistant Professor, Department of Computer Sciences,** University of Kashmir, Jammu and Kashmir

Mentoring Experiences

- **Mohammad Shahid** (2019-20)
  Topic: Image Segmentation based on Particle Swarm Optimization (PSO)
- **Pillai Lakishmi Ashokan** (2020-21)
  Topic: Training Multi-layer Perceptron Using Hybridization of Chaotic Gravitational Search Algorithm
- **Faheem Ahmad** (2020-21)
  Topic: Application of CGSACPSO Hybrid Strategy for Classification and Function Approximation

Reviewer

- Reviewer of SCI Journals = 35
- Reviews Completed = 110

Reviewer of following SCI Journals:

- Swarm and Evolutionary Computation, **Elsevier**
- Engineering Applications of Artificial Intelligence, **Elsevier**
- Expert Systems with Applications, **Elsevier**
- International Journal of Intelligent Computing and Cybernetics (IJICC), **Emerald**
- International Journal of Applied Metaheuristic Computing, **IGI Global**
- World Journal of Engineering (WJE), **Emerald**
- Automatika, **Taylor and Francis**
- Connection Science, **Taylor and Francis**
- Frontiers in Public Health, **Frontiers**
- Frontiers in Public Health, **Frontiers**
- Optical Fiber Technology, **Elsevier**
- Frontiers in Oncology, **Frontiers**
- The Imaging Science Journal, **Taylor and Francis**

Computer Skills

Programming Language	C, C++, Matlab, Python
Operating System	Microsoft Windows
IDE	Code Blocks, Geany, PyCharm, Tensorflow, Pytorch, Keras
Type Setting	Microsoft Office

Language

English	Read, Write and Speak
Urdu	Read, Write and Speak
Kashmiri	Read and Speak (Mother Tongue)
Arabic	Read

Work Citations (Google Scholar)

Citations	418
h-index	11
i10-index	12

Publications

1. Peer Reviewed Journals

- **Rather, S. A., & Bala, P. S. (2021).** Constriction Coefficient Based Particle Swarm Optimization and Gravitational Search Algorithm for Multilevel Image Thresholding. *Expert Systems,* doi*:* 10.1111/exsy.12717, ***Wiley.***
- **Rather, S. A., & Bala, P. S. (2022).** Levy Flight and Chaos Theory Based Gravitational Search Algorithm for Multilayer Perceptron (MLP) Training. *Evolving Systems,* ***Springer.***
- **Rather, S. A., & Das, S. (2025).** COVID-19 Chest CT Scan Image Segmentation Based on Chaotic Gravitational Search Algorithm. *Evolving Systems,* ***Springer.***
- **Rather, S. A., & Bala, P. S. (2021).** Application of Constriction Coefficient Based Particle Swarm Optimization and Gravitational Search Algorithm for Solving Practical Engineering Design Problems. *International Journal of Bio-Inspired Computation,* doi: 10.1504/IJBIC.2021.10038738, ***Inderscience.***
- **Rather, S. A. & Das, S. (2023).** Levy Flight and Chaos Theory Based GravitationalSearch Algorithm for Image Segmentation, *Mathematics,* ***MDPI.***
- **Rather, S. A., & Bala, P. S. (2020).** A hybrid constriction coefficient-based particle swarm optimization and gravitational search algorithm for training multi-layer perceptron. *International Journal of Intelligent Computing and Cybernetics*, *13*(2), 129-165, ***Emerald.***
- **Rather, S. A., & Bala, P. S. (2022).** Levy Flight and Chaos Theory Based Gravitational Search Algorithm for Mechanical and Structural Engineering Design Optimization. *Open Computer Science*, ***De Gruyter.***
- **Rather, S. A., & Bala, P. S. (2020).** Swarm-based chaotic gravitational search algorithm for solving mechanical engineering design problems. *World Journal of Engineering*, *17*(1), 97-114, ***Emerald.***
- **Rather, S. A., & Bala, P. S. (2022).** Hybridization of Chaotic Maps and Gravitational Search Algorithm for Constrained Mechanical and Civil Engineering Design Frameworks: CGSA for Mechanical and Civil Engineering Design Optimization. *International Journal of Applied*

Metaheuristic Computing, 13(1), 1-39, ***IGI.***

- **Rather, S. A., & Bala, P. S. (2022).** Levy Flight and Chaos Theory Based Gravitational Search Algorithm for Global Optimization: LCGSA for Global Optimization. *International Journal of Applied Metaheuristic Computing, 13*(1), 1-58, ***IGI.***
- **Rather, S. A., & Roy, P. P. (2026).** Lévy flight and chaos-enhanced gravitational search algorithm with U-Net++ for multi-threshold brain MRI segmentation, *Evolutionary Intelligence, 19*(2), 39, ***Springer.***

2. International Conferences

- **Rather, S. A., & Bala, P. S. (February, 2019).** A holistic review on gravitational search algorithm and its hybridization with other optimization algorithms. In *2019 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)* (pp. 1-6). ***IEEE.***
- **Rather, S. A., & Bala, P. S. (June, 2019).** Hybridization of constriction coefficient based particle swarm optimization and gravitational search algorithm for function optimization. In *2019 International Conference on Advances in Electronics, Electrical & Computational Intelligence (ICAEEC).* ***Elsevier.***
- **Rather, S. A., Shahid, M., & Bala, P. S. (December, 2019).** A comprehensive survey on solving clustering and classification problems using gravitational search algorithm. In *2019 IEEE 9th International Conference on Advanced Computing (IACC)* (pp. 13-18). ***IEEE.***
- **Rather, S. A., & Bala, P. S. (December, 2019).** Hybridization of Constriction Coefficient-Based Particle Swarm Optimization and Gravitational Search Algorithm for Constrained Engineering Optimization. In *2019 International Conference on Machine learning and Data Science (ICMLDS).* ***ACM.***
- **Rather, S. A., & Bala, P. S. (December, 2019).** Hybridization of Constriction Coefficient-Based Particle Swarm Optimization and Chaotic Gravitational Search Algorithm for Solving Engineering Design Problems. In 2019 *International Conference on Advanced Communication and Networking* (ACN 2019), ***Springer.***
- **Rather, S. A., & Das, S. (December, 2022).** Hybridization of Levy Flight and Chaotic Gravitational Search Algorithm for Image Segmentation. In *2022 IEEE International Symposium on Smart Electronic Systems (iSES).* ***IEEE.***
- **Rather, S. A., Roy, P. P. & Das, S. (December, 2024).** Chaos theory based gravitational search algorithm for medical image segmentation. In *2024 International Conference on Pattern Recognition (ICPR).* ***Springer.***
- **Rather, S. A., Kandwal, A., Pandit, M. K., & Roy, P. P. (April, 2025).** Quantum-behaved particle swarm optimization for the segmentation of kidney stone CT images. In *2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).* ***IEEE.***
- **Rather, S. A., Bala, P. S., & Roy, P. P. (October, 2025).** RIME optimization algorithm with Kapur's entropy for multilevel segmentation of retinal images. In *2024 Asian Conference on Pattern Recognition (ACPR).* ***Springer.***
- **Rather, S. A., Arafat, M. Y., & Roy, P. P. (December, 2025).** Quantum swarm intelligence combined with Kapur entropy for optimized retinal image segmentation. In *2025* 11th International Conference on Pattern Recognition and Machine Intelligence (PReMI). ***Springer.***

3. Book Chapters

- **Rather, S. A., & Bala, P. S. (2019).** Analysis of Gravitation-Based Optimization Algorithms for Clustering and Classification. *Handbook of Research on Big Data Clustering and Machine Learning* (pp. 74-99). ***IGI Global.***

- **Rather, S. A., & Bala, P. S. (2020).** Hybridization of Constriction Coefficient-Based Particle Swarm Optimization and Chaotic Gravitational Search Algorithm for Solving Engineering Design Problems. *Lecture Notes in Networks and Systems* (pp. 95-115). ***Springer*.**
- **Rather, S. A., Bala, P. S., & Ashokan, P. L. (2021).** Training Multi-layer Perceptron Using Hybridization of Chaotic Gravitational Search Algorithm and Particle Swarm Optimization. *Applying Particle Swarm Optimization* (pp. 233-262). ***Springer*.**
- **Rather, S. A., & Bala, P. S. (2021).** Constriction Coefficient-Based Particle Swarm Optimization and Gravitational Search Algorithm for Image Segmentation. *Applying Particle Swarm Optimization* (pp. 279-305). ***Springer*.**
- **Rather, S. A., Çiftçioğlu, A. O., & Bala, P. S. (2023).** Levy Flight and Chaos Theory based Gravitational Search Algorithm for Greyscale Image Thresholding. *Comprehensive Metaheuristics: Algorithms and Applications* (pp. 1-40). Academic Press, ***Elsevier***.
- **Rather, S. A., & Das, S. (2025).** Quantum computing-based metaheuristics for medical image segmentation. *Nature-inspired Metaheuristic Algorithms* (pp. 203-237). CRC Press, ***Taylor and Francis***.

4. National Conferences and Seminars

- **Rather, S. A., & Sharma, N. (2016).** Improvement in Gravitational Search Algorithm using Biogeography based Optimization. *National Conference on Electrical, Electronics, Computer, Civil and Mechanical Engineering*. National Institute for Engineering and Research (NIER).

Awards and Fellowships

- National Post-Doctoral Fellowship (NPDF-2024)
- Institute Post-Doctoral Fellowship (IPDF, 2022)
- Research Excellence Award 2020, Institute of Scholars.
- Best Scholar Award, Science Father.
- Outstanding Research Paper Award, Novel Research Academy.
- Best Research Scholar Award, Novel Research Academy.

Membership of Professional Bodies

- **Indian Unit of Pattern Recognition and Artificial Intelligence (IUPRAI),** Life Member, Membership Number: L-323.
- **Association for Computing Machinery (ACM),** Student Member, Membership Number: 1827527.
- **Institute of Electrical and Electronics Engineers (IEEE),** Graduate Student Member, Membership Number: 94996420.
- **The Institution of Engineers (IEI),** Associate Member, Membership Number: AM1784755.
- **The Institution of Electronics and Telecommunication Engineers (IETE),** Associate Member, Membership Number: AM501264.
- **The Indian Society for Technical Education (ISTE),** Life Member, Membership Number: LM121723.
- **International Association of Engineers (IAENG),** Member, Membership Number: 216903.

Further Details

Google Scholar	https://scholar.google.co.in/citations?user=fBc0vbcAAAAJ&hl=en
Research Gate	https://www.researchgate.net/profile/Sajad-Rather
ORCID	http://orcid.org/0000-0002-0351-7705
Publons	https://publons.com/researcher/3220005/sajad-ahmad-rather
Github	https://github.com/SajadAHMAD1
MathWorks	https://in.mathworks.com/matlabcentral/profile/authors/6240015-sajad-ahmad rather

References

Reference 1 **Prof. P. Shanthi Bala**, Professor, Department of Computer Science,School of Engineering and Technology, Pondicherry University, Puducherry- 605014, India. **Email Id:** shanthabala.cs@gmail.com

Reference 2 **Dr. Aybike Özyüksel Çiftçioğlu**, Assistant Professor, Department of Civil Engineering, Faculty of Engineering, Manisa Celal Bayar University, Manisa-45140, Turkey. **Email Id:** aybike.ozyuksel@cbu.edu.tr

Reference 3 **Dr. V. Uma**, Associate Professor, Department of Computer Science, School of Engineering and Technology, Pondicherry University, Puducherry-605014, India. **Email Id:** umabskr@gmail.com

Reference 4 **Dr. Assif Assad**, Assistant Professor, Department of Computer Scienceand Engineering, Islamic University of Science and Technology (IUST), Pulwama-192122, Jammu and Kashmir, India. **Email Id:** assifassad@gmail.com

Reference 5 **Dr. K S Kuppusamy**, Associate Professor, Department of Computer Science, School of Engineering and Technology, Pondicherry University, Puducherry-605014, India. **Email Id:** kskuppu@gmail.com

Reference 6 **Dr. T. Amudha**, Professor, Department of Computer Applications,School of Computer Science and Engineering, Bharathiar University, Coimbatore-641046, India. **Email Id:** amudhaswamynathan@buc.edu.in

Declaration

I hereby declare that the above information is true and correct to my knowledge. Thank you for your time and consideration.

Dr. Sajad Ahmad Rather