Faculty Profile

Personal Information

- **Name:** Dr.Surbhi Agrawal
- **Designation:** Associate Professor and Head of the Department
- **Department:** CSE (AI&ML)
- **Email:** hodaiml.rvitm@rvei.edu.in, surbhiagrwal.rvitm@rvei.edu.in
- **Phone:** 91-80-35095153

Google Scholar: https://scholar.google.com/citations?user=YvmQyxsAAAAJ&hl=en

ResearchGate: https://www.researchgate.net/profile/Surbhi-Agrawal-2?ev=hdr_xprf

LinkedIn: https://www.linkedin.com/in/dr-surbhi-agrawal-69192131/

ORCID: **https://orcid.org/0000-0002-8156-1373**

Domain of Expertise

- **Computer Vision**
- **AI and ML**
- **GAN and VAEs**
- **Cloud Computing**
- **Algorithms & Data Structures**

Research Focus

- **Primary Area:** Image Processing, AI and ML, NLP
- **Allied Areas:**
  - Astrophysics
  - Agritech
  - Heathcare

Academic Qualifications

- **Ph.D.**: [Computer Science] (Machine Learning), [VTU], [2021]
- **M.Tech**: [CSE], [VTU], [2011]
- **B.E.** : [Computer Science and Engineering], [RGPV University, Bhopal], [2002]

Professional Experience

Experience

S.No	Institute/College/Industry	Job Title	Duration (From- To)
1.	RV Institute of Technology& Management	Associate Professor, I/C HOD, CSE(AI&ML)	June 1st 2025– Till Date
2.	RV Institute of Technology& Management	Associate Professor	Oct 2021 – May 31, 2025
3.	Dayanand Sagar University	Associate Professor	June2021 – Sep 2021
4.	Indian Institute of Information Technology, Pune	Assistant Professor, Grade I	Jan 2020- March 2021
5.	Ajeenkya DY Patil University (Under iNurture)	Senior Assistant Professor	August 2019 – Dec 2019
6.	PESIT- Bangalore South Campus	Assistant Professor	June 2011-June 2019
7.	East Point College of Engineering and Technology	Senior Lecturer	Feb 2008-May2011
8.	New Horizon College of Engineering	Lecturer	May 2007-Jan 2008
9.	Institute of Information Technology & Management , Gwalior	Lecturer	June 2003-Jan 2007

Publications & Patents

Journal Publications

1. Agrawal, S. An Effective Fusion and Deeplift-based Optimized Hamiltonian Relevance Aware Capsule Network for Glitch Classification in LIGO. Cogn Comput 17, 170 (2025). https://doi.org/10.1007/s12559-025-10526-x
2. Surbhi Agrawal, Vishnuvardhan Reddy G, Sirisha Arava, Snehanshu Saha, Sriparna Saha, An Insight on Gravity Spy dataset and Machine Learning techniques for Glitch Classification in Gravitational Waves, Computer Fraud and Security, Vol. 2025 (1), pp 870-892
3. Margarita Safonova, Archana Mathur, Suryoday Basak, Kakoli Bora, Surbhi Agrawal: Quantifying the Classification of Exoplanets: in Search for the Right Habitability Metric, European Physical Journal, ST special issue: Modeling, Machine Learning and Astronomy, Springer, 2021
4. Suryoday Basak, Snehanshu Saha, Archana Mathur, Kakoli Bora, Simran Makhija, Margarita Safonova, Surbhi Agrawal; CEESA Meets Machine Learning: From Earth Similarity to Habitability Classification of Exoplanets, Astronomy and Computing (Elsevier), 30, November 2019

5. Snehanshu Saha, Suryoday Basak, Margarita Safonova, Surbhi Agrawal, Kakoli Bora, Poulami Sarkar and Jayant Murthy: Theoretical Validation of Potential Habitability via Analytical and Boosted Tree Methods: An Optimistic Study on Recently Discovered Exoplanets, Astronomy & Computing (Elsevier), Vol. 23, pp 141-150, 2018, https://doi.org/10.1016/j.ascom.2018.03.003
6. Kakoli Bora, Snehanshu Saha, Surbhi Agrawal, Margarita Safonova, Swati Routh, Anand Narasimhamurthy, CD-HPF: New Habitability Score Via Data Analytic Modeling, *Astronomy and Computing* (Elsevier), Vol 17, pp 129-143, 2016
7. Agrawal Surbhi, Naik Pradeep, Srikanta Murthy, A Survey On Various Task Scheduling Algorithms Toward Load Balancing In Public Cloud,Journal :American Journal Of Applied Mathematics, Special Issue: Frontiers in Mathematics and Computing.

Conference Papers

1. Surbhi Agrawal, Kakoli Bora presented and published a paper titled " Quantum Machine Learning for Astrophysical Data, A Feasibility Study on Signal Classification and Feature Encoding" in 6th International Springer Conference on Frontiers in Computing and Systems , Comsys 2025 held from 25th-27th September organised by Warsaw University of Technology , Poland and Comsys Educational Trust , Kolkatta
2. Rahul Bharadwaj, Surbhi Agrawal presented and published a paper titled ""Big Data Analytics and its Applications in Healthcare: A Review"" in National Conference on Digital Technology and Engineering(NCDTE) on 28th April. Proceedings to be published in Technix International Journal for Engineering Research "" (TIJER) ISSN 2349-9249, Vol 10 Issue 4.
3. Samyak Tantradi, Surbhi Agrawal presented and published a paper titled ""Precision Agriculture using Cloud Computing"" in National Conference on Digital Technology and Engineering(NCDTE) on 28th April. Proceedings to be published in Technix International Journal for Engineering Research "" (TIJER) ISSN 2349-9249, Vol 10 Issue 4.
4. Srinvias Prajwal BR, Tejas Ganesh Joshi, Dr. Surbhi Agrawal presented and published a paper titled "Review Techniques for Vocal Classification using Machine Learning "" in National Conference on Digital Technology and Engineering(NCDTE) on 28th April. Proceedings to be published in Technix International Journal for Engineering Research "" (TIJER) ISSN 2349-9249, Vol 10 Issue 4.
5. Palvisha Changkakati, R Ramya, V Naga Harshini, Dr Surbhi Agarwal presented and published a paper titled ""Survey On Climate Change Using Various Computational Approaches"" in National Conference on Digital Technology and Engineering(NCDTE) on 28th April. Proceedings to be published in Technix International Journal for Engineering Research "" (TIJER) ISSN 2349-9249, Vol 10 Issue 4.
6. Surbhi Agrawal, K Nidhi, Nisha R, Kshama Girish, presented and published a paper titled ""Machine Learning Techniques for Arrythmia Prediction"" in National Conference on Digital Technology and Engineering(NCDTE) on 28th April. Proceedings to be published in Technix International Journal for Engineering Research "" (TIJER) ISSN 2349-9249, Vol 10 Issue 4.
7. Surbhi Agrawal, Suryoday Basak, Snehanshu Saha, Archana Mathur, Kakoli Bora and Margarita Safonova; CEESA: A habitability score computation approach validated by machine learning, 70th IAC, 21-25 October 2019, Washington D.C., USA.
8. Snehanshu Saha, Archana Mathur, Kakoli Bora, Suryoday Basak and Surbhi Agrawal, A New Activation Function for Artificial Neural Net Based Habitability Classification, ICACCI, Bangalore: IEEE 2018, ISBN 978-1-5386-5314-2 (ICCACI'18), Sept 19-20, 2018.
9. Surbhi Agrawal, Suryoday Basak, Kakoli Bora, Jayant Murthy, A Comparative Analysis of the Cobb-Douglas Habitability Score (CDHS) with the Earth Similarity Index (ESI). ICACCI, Bangalore: IEEE 2018, ISBN 978-1-5386-5314-2, 1775-1780
10. Surbhi Agrawal, Rahul Aedula, Rahul J.S.,"Machine Learning Analysis of GravitationalWaves", Presented in International Conference on Modeling Machine Learning and Astronomy, Nov 2019, at

PES University, Bangalore, Springer Publication.

11. L1 Norm SVD based Ranking Scheme: A Novel Method in Big Data Mining, AISC, Springer,2018, Rahul Aedula, Yashasvi Madhukumar, Snehanshu Saha, Archana Mathur, Kakoli Bora and Surbhi Agrawal, Journal Advances in Intelligent Systems and Computing.
12. Mohammed Viquar, Suryoday Basak, Ariruna Dasgupta, Surbhi Agrawal and Snehanshu Saha, "Machine Learning in Astronomy: A Case Study in Quasar-Star Classification, Advances in Intelligent Systems and Computing", Springer, 2018.
13. Surbhi Agrawal, Suryoday Basak, , Snehanshu Saha, Abhijit Jeremiel Theophilus, Kakoli Bora, Habitability Classification of Exoplanets: A Machine Learning Insight , PRESENTED AT NSSS-2016, held at ISRO, Thiruvananthpuram.
14. Sai Prasanna, Surbhi Agrawal, Dynamic Job Shop Scheduling with Sequence Dependent Routes using Particle Swarm Optimization, International Journal of Scientific and Engineering Research, Volume 5, Issue 8,August-2014 505 ISSN 2229-5518.
15. Jyotirmoy Sarkar, Snehanshu Saha, Surbhi Agrawal, An Efficient use of Principal Component Analysis in Workload Characterization- A Study,2014,AASRI Conference On Sport Engineering and Computer Science (SECS 2014),AASRI Procedia8(2014) 68-74, Elsevier Publication.
16. Surbhi Agrawal, Roopa Narayan, Snehanshu Saha, An Enhancement to Clousim Via Distributed Data Storage, 2014 , 3rd International Conference on Advances in Computing , Communications and Informatics (ICACCI-2014),Sep24-27, Noida.

Book Chapters

1. Margarita Safonova, Snehanshu Saha, Jayant Murthy, Madhu Kashyap, C. Sivaram, Suryoday Basak, Surbhi Agrawal, Kakoli Bora, Pros and Cons of Classification of Exoplanets: in Search for the Right Habitability Metric, Astrobiology Newsletter, Vol 11, 2018.

2. Surbhi Agrawal, Margarita Safonova, Kakoli Bora, Suryoday Basak and Snehanshu Saha, Note on Proxima Centauri b: Theoretical validation of potential habitability via CD-HPF, Astrobiology Newsletter, Vol 10(4), 2017.
3. Surbhi, A., Mallanagouda, P., Patil, M.M. (2023). Data Augmentation Approaches Using Cycle Consistent Adversarial Networks. In: Solanki, A., Naved, M. (eds) GANs for Data Augmentation in Healthcare. Springer, Cham. https://doi.org/10.1007/978-3-031-43205-7_7
4. Patil, M., Patil, M.M., Agrawal, S. (2023). WGAN for Data Augmentation. In: Solanki, A., Naved, M. (eds) GANs for Data Augmentation in Healthcare. Springer, Cham. https://doi.org/10.1007/978-3-031-43205-7_13
5. Rahul Aedula, Yashasvi Madhukumar, Snehanshu Saha, Archana Mathur, Kakoli Bora and Surbhi Agrawal, L1 Norm SVD based Ranking Scheme: A Novel Method in Big Data Mining, AISC, Springer,
   2018
6. Surbhi Agrawal, Kakoli Bora and Swati Routh, "Machine Learning Approaches for Supernovae Classification" book chapter published in Handbook of Research on Applied Cybernetics and Systems Science, 207-219, April-2017, DOI: 10.4018/978-1-5225-2498-4.ch009

Patents [Filed / Published / Granted]

1. Raghavendra Reddy N V, C. Solaimuthu , Surbhi Agrawal , Kinny Garg,Vikash Kumar,Tanmoy Hazra, S. Sri Lavanya Priya, Sivasankar S, IOT-BASED SOLAR POWERED STREETLIGHT CONTROLLING DEVICE, India Design Patent number 471999-001, granted on Jan 1st 2026.
2. Surbhi Agrawal, Big Data Analytics Processing Server Equipment For Financial Transactions GB Patent 6,356,910, granted on 12th Aril 2024.
3. Surbhi Agrawal,Prashanth G K, Lakshminarayana M,Chandrakala B M,Ms. Sterlin Minish T N,Nabeena

Ameen,Subramanya Bhagwat,Melwin D Souza, K.B.V.Brahma Rao,G.P. Hegde,Mouneshachari S,Poorna Chandra Reddy ,Enhancement of Security Issues in Distributed Computing using Artifical Intelligence and Machine Learning,Indian Innovation Patent,Application No.202241028741,Date of Filing-27.05.2022

Professional Memberships

- IEEE
- ACM
- CSI

Student Supervision

- **Ph.D. Candidates:** 1 Pursuing
- **M.Tech Students:** 14
- **Undergraduate Research Mentees:** 50+

Professional Roles

- Worked a session chair in multiple IEEE and Springer International Conferences.
- Conducted many workshops, trainings and events.

Teaching

Core Courses:

- Big Data Analytics
- Cloud Computing
- Machine Learning and Deep Learning
- Data Structures and Algorithms

Responsibilities

- **Academic**: I/C HOD, CSE(AI&ML)

External Connect

- MOU- CLIK (Consortium of Electronic Industries of Karnataka)
- MOU – CEDAT, Let's UBX, Bengaluru
- MOU- Jamsetji Tata Society , IIT Madras
- MOU- Data Flair , Indore
- MOU- Karostartup Pvt Ltd, Noida
- MOU- Kroolo Labs, Bengaluru
- MOU- Big AIR Labs

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