Dr. Hari Singh Rawat
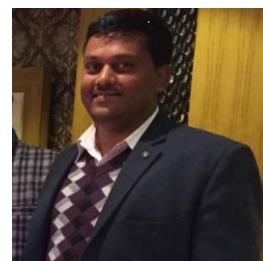
Associate Professor
CSE/IT Department,
Jaypee University of Information Technology,
Waknaghat, Solan, Himachal Pradesh

Nationality:	Indian
Marital Status:	Married
Address (Off):	Associate Professor, CSE/IT Department,
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Scopus: https://www.scopus.com/authid/detail.uri?authorId=57193130998
Google Scholar: https://scholar.google.co.in/citations?hl=en&user=9LYEWlwAAAAJ
ORCID: https://orcid.org/0000-0002-4063-9533
ResearcherID: http://www.researcherid.com/rid/C-9822-2019
Web of Science ResearcherID: AAW-6426-2021 URL: https://www.webofscience.com/wos/author/record/2355602
Faculty Profile Webpage: https://www.juit.ac.in/faculty.php?id=400&dep=cse&page=0

➢ Academic Qualifications:

- **Ph.D. (Computer Science & Engineering), "A Grade",** Thapar University, Patiala, Punjab, 2017, Thesis Title: Efficient Grid-GIS Framework for Spatial Data, Field of specialization: Distributed Computing and Spatial Data
- **M.Tech (Computer Science & Engineering)**, GNDEC, Ludhiana affiliated to PTU, Jalandhar, 2008 Dissertation Title: Software Reliability Prediction Method for Jelinski-Moranda Model, Field of Specialization: Software Engineering & Reliability.
- **B.Engg. (Computer Science & Engineering with Honors)**, SBMN Engineering College, Rohtak, affiliated to MDU, Rohtak, 2001.
- **10+2 (Non-Medical)**, DAV Public School, affiliated to CBSE, Panipat, 1996.
- **Matric**, PTPS High School, Panipat, affiliated to Haryana Board, 1994.

➢ Teaching Experience: 24 years of teaching experience including more than 14 years of research experience

Associate Professor : July 01, 2025 to till date at Jaypee University of Information Technology, Waknaghat, Solan, Himachal Pradesh.

Assistant Professor (Sr. Grade) : July 23, 2018 to June 30, 2025 at Jaypee University of Information Technology, Waknaghat, Solan, Himachal Pradesh.

Assistant Professor: July 9, 2016 to July 21, 2018 in CSE Dept. at Panipat Institute of Engineering & Technology, Samalkha, Panipat, Haryana.

Associate Professor (Under CAS): October 1, 2011 to July 7, 2016 (Internal promotion through Career Advancement Scheme) in CSE Dept. at N.C. College of Engineering, Israna, Panipat, Haryana.

Assistant Professor: October 2007 to September 2011 in CSE Dept. at N.C. College of Engineering, Israna, Panipat, Haryana.

Lecturer: September 06, 2001 to September 2007 in CSE Dept. at N.C. College of Engineering, Israna, Panipat, Haryana.

➢ Consultancy, Funded Projects and Sponsored Research Activities:

Completed:

1. Team member of one contractual research project on "Inspection of Food Items using Image processing techniques" with Udyog Yantra Technologies LLP, Noida, India of amount INR 2 lacs during December 2019 to December 2020.
2. AICTE funded RPS project "Developing a Grid-GIS Framework for Spatial Data" from July 22, 2013 to June 25, 2016, as PI.
3. Online Test Application (OTA) project for conducting MCQ tests in 2013.

➢ Subjects Taught at UG/PG Level

Computer Networks, Operating Systems, OOPS, Machine Learning, Deep Learning, Introduction to Statistical Learning, Database Management System, Big Data Analytics, Parallel Programming Techniques, Cloud Computing, Programming in 'C' Language, Security & Cryptography, Automata Theory, Object Oriented Software Engineering, Software

Engineering, Unix & Linux Programming, Programming Languages, Advanced DBMS, Advanced Computer Networks, Mobile Computing, Data Structure, Soft Computing

➢ **Practical Exposures**

Machine Learning and Deep Learning Libraries on Python, Hadoop and Spark
Distributed & Parallel Computing Frameworks: MapReduce Programming, Apache Hadoop and Spark Framework, OpenMP

Grid-Computing:	Globus Toolkit
Data Mining Workbench:	WEKA
Operating System:	Unix, LINUX, Windows, MS-DOS
Programming Languages:	Python, R, Java, C/C++
Web Technologies:	HTML, XML, Java Script, Java Servelets, PHP
GUI:	VB6, D2K
Databases:	MS-Access, MySQL, Oracle
Spatial Databases:	GIS and Spatial Extensions with MYSQL, ArcGIS
Integrated Development Environment:	Netbeans, Eclipse, Google Colabs
Document Processing Software:	Latex, WinEdt, Lyx, Mendeley
Compititive Programming Platforms:	HackerRank

➢ *Key Papers in Journals SCI/SCIE/Scopus/WoS (Published/Communicated)*

1. Piyush Sewal and **Hari Singh** "Performance optimization of Spark MLlib workloads using cost efficient RICG model on exponential projective sampling", Cluster Computing - The Journal of Networks Software Tools and Applications, Vol. 27, Iss. 2, pp. 10569-10588, May 2024, doi:10.1007/s10586-024-04478-4 **(SCIE).**

2. Piyush Sewal and **Hari Singh**, "Algorithmic Proficiency in Spark Configuration Tuning: An Empirical Study using Execution Time Metrics across Varied Workloads", Procedia Computer Science, Vol. 235, pg. 2307-2317, doi: https://doi.org/10.1016/j.procs.2024.04.219 (Scopus).

3. Piyush Sewal and **Hari Singh** "Performance Comparison of Apache Spark and Hadoop for machine learning based iterative GBTR on HIGGS and Covid-19 datasets", scalable computing practice and experience, Vol. 25, Iss.3, pp. 1373-1386, 2024, ISSN 1895-1767, DOI 10.12694/scpe.v25i3.2687 **(Scopus).**

4. Piyush Kanungo and **Hari Singh**, "A feature extraction based improved sentiment analysis on Apache Spark for real-time twitter data" scalable computing practice and experience, Vol. 24(4), pp. 847-855, 2023, doi: 10.12694/scpe.v24i4.2343 **(Scopus)**.

5. Piyush Sewal and **Hari Singh**, "Analyzing distributed Spark MLlib regression algorithms for accuracy, execution efficiency and scalability using best subset selection approach", Multimedia Tools and Applications, Vol. 83, pg. 44047-44066, October 17, 2023, doi: 10.1007/s11042-023-17330-5 **(SCIE, Scopus)[IF-3.6]**

6. **Hari Singh** and Seema Bawa, "Predicting Covid-19 statistics using machine learning regression models Li-MuLi-Poly", Multimedia Systems, vol. 28, pp. 113-120, **2022**, ISSN-0942-4962, doi: 10.1007/s00530-021-00798-2 **(SCIE, Scopus). [IF-1.935]**

7. Ankita Taneja, **Hari Singh** and Suresh Chand Gupta, "Stream of Traffic Balance in Active Cloud Infrastructure Service Virtual Machines Using Ant Colony", International Journal of Cloud Computing, Vol 9, No. 4, pp. 373-396, 2020, ISSN (Online) : 2043-9997, ISSN (Print): 2043-9989, DOI: 10.1504/IJCC.2020.112315, January 04, **2021 (Scopus). [IF-0.43]**

8. **Hari Singh** and Seema Bawa, "An improved integrated Grid and MapReduce-Hadoop architecture for spatial data: Hilbert TGS R-Tree Based IGSIM", Concurrency and Computation: Practice and Experience, John Wiley & Sons, Vol. 31, Iss. 17, Sept. 10, **2019**, ISSN: 1532-0626. doi: https://doi.org/10.1002/cpe.5202 **(SCIE, Scopus)** . [IF-1.536]

9. **Hari Singh**, Dinesh Verma and Ravindara Bhatt, "Parallel computing of matrix multiplication in OpenMP supported CodeBlocks", Advances and applications in mathematical sciences, Mili Publications, Vol. 18, Iss. 8, pp. 775-787, June **2019 (ESCI, WoS),** ISSN 0974-6803.

10. **Hari Singh** and Seema Bawa, "A MapReduce-based Scalable Discovery and Indexing of Structured Big Data", "Future Generation Computer System – The International Journal of Grid Computing and eScience," Elsevier, Netherlands, Vol. 73, pp. 32-43, ISSN: 0167-739X, IF-2016/17 (3.99), doi:10.1016/j.future.2017.03.028 **(SCIE, Scopus) [IF-7.187].**

11. **Hari Singh** and Seema Bawa, "A Survey of Traditional and MapReduce-Based Spatial Query Processing Approaches", SIGMOD Record, Association for Computing Machinery (ACM), United States, Vol. 46, No. 2, pp. 18-29, ISSN:0163-5808, IF-2016/17 (0.875), doi>10.1145/3137586.3137590, **(SCIE, Scopus) [IF-1.67].**

12. **Hari Singh** and Seema Bawa, "A MapReduce-based Efficient H-bucket PMR Quadtree Spatial Index" Computer systems Science and Engineering, CRL Publishing Limited, England, Vol. 32, No. 5, ISSN: 0267-6192, England English, IF-2016/17 (0.384), **doi**:10.1109/ICPP.1994.82 **(SCIE, Scopus) [IF-1.32].**

13. **Hari Singh** and Seema Bawa, "IGSIM: An Architecture for High Performance Spatial Data Analysis", International Journal of Computer Science and Information Security (IJCSIS), Vol. 14, No. 11, pp. 302-309, November **2016**, ISSN:1947-5500, IF/16-0.519 **(Scopus).**

14. **Hari Singh** and Seema Bawa, "Scalability and Fault Tolerance of MapReduce for Spatial data" Global Journal of Engineering Science and Research Management (GJESRM), Thomson Reuter Endnote, 3(8), pp. 97-103, August 2016, ISSN:2349-4506, DOI: 10.5281/zenodo.61147, IF/17-3.779.

➢ Book Chapters

1. **Hari Singh**, Piyush Sewal, and Dinesh Chander Verma, "A Predictive Analysis of the Covid-19 Pandemic for Traditional and Tree-Based Regression Algorithms", in the IGI Global Book titled "Impact of Digital Solutions for Improved Healthcare Delivery" IGI Global, pp. 303-340, October 2024, 10.4018/979-8-3693-5237-3.ch011, ISBN: 9798369352373.
2. Dinesh Chander, **Hari Singh**, Abhinav Kirti Gupta "A study of big data processing for sentiments analysis", IGI Global, Book Chapter Submission: Large-Scale Data Streaming, Processing, and Blockchain Security, July 2020 **(Scopus)** UK: IGI Global. DOI: 10.4018/978-1-7998-3444-1.ch001 [ISBN : 9781799834441, 1799834441, 9781799834458, 9781799834465] .
3. **Hari Singh**, Richa Vasuja and Reema Sharma, "A Survey of Diversified Domain of Big Data Technologies" for the book titled "Data Intensive Computing Application for Big Data" Vol. 29, pp. 1-27, 2018 published under the Advances in Parallel Computing series by IOS Press BV, Amesterdam, Netherland, ISBN:978-1-61499-813-6 **(Scopus)**.

➢ Edited Books and Conference Proceedings

1. **Hari Singh**, Ravindara Bhatt, Pradeep Kumar Gupta, Vivek Sehgal (2023). 2022 Seventh Sixth International Conference on Parallel, Distributed and Grid Computing (PDGC). USA: IEEE. [ISBN : 978-1-6654-5400-1].
2. **Hari Singh**, Ravindara Bhatt, Prateek Thakral and Dinesh Chander Verma, CRC Press, Taylor & Francis, Edited Book titled "Data Science for Effective Healthcare Systems". ISBN 9781032105680 (2022).
3. Hemraj Saini, **Hari Singh**, Samir Dev Gupta, Pradeep Kumar Gupta, Geetanjali Rathee (2021). 2020 Sixth International Conference on Parallel, Distributed and Grid Computing (PDGC). USA: IEEE. [ISBN : 978-1-7281-7132-6].
4. **Hari Singh**, Amit Gupta and Nitin Sharma, Joint Editor of the Book "Emerging Technologies", Excel India Publishers, ISBN: 978-93-83842-55-1, for the proceedings of International Conference on Emerging Technologies (ICET-2014) held on April 24-26, 2014 at NCCE, Israna, Panipat.

➢ Key Papers published in Conference/Seminar Proceedings

1. **Hari Singh**, Prateek Thakral, Kunal Rathor, and Dinesh Chander Verma "A Machine Learning Based Diabetes Mellitus Classification on Weighted Class using Inverse Class Frequency Method", 7th International Conference on Signal Processing, Computing and Control (ISPCC 2025), organized by ECE Department, JUIT, Solan during March 6-8, 2025, pp. 788-793, June 2025, doi:10.1109/ISPCC66872.2025.11039549 **(Scopus)**.
2. Piyush Sewal and **Hari Singh**, "A machine learning approach for predicting execution statistics of spark application", 2022 7th IEEE International Conference on Parallel, Distributed, and Grid Computing (PDGC), organized by the CSE & IT Department of JUIT, Waknaghat on 25-27 November 2022, pp. 331-336, 10.1109/PDGC56933.2022.10053356 **(Scopus)**
3. Harshit Saxena, Divyanshu Sharma, **Hari Singh**, and Rohit Anand, "Comparing various machine learning classification algorithms for Alzheimer's disease prediction" 2022 7th IEEE International Conference on Parallel, Distributed, and Grid Computing (PDGC), organized by the CSE & IT Department of JUIT, Waknaghat on 25-27 November 2022, pp. 687-692, 10.1109/PDGC56933.2022.10053163 **(Scopus)**
4. Piyush Sewal and **Hari Singh**, "A Critical Analysis of Apache Hadoop and Spark for Big Data Processing", 2021 6th IEEE International Conference on Signal Processing, Computing and Control (ISPCC), organized by the Electronics & Communication Engineering department of Jaypee University of Information Technology (JUIT), Waknaghat, Himachal Pradesh, India on Oct (7-9), IEEE Xplore pp. 308-313, 2021, **DOI:** 10.1109/ISPCC53510.2021.9609518 **(Scopus)**
5. Himanshu Jindal, **Hari Singh**, Monika Bharti, "Modified Cuckoo Search for Resource Allocation on Social Internet-of-Things", 2018 5th International Conference on Parallel and Distributed Computing (PDGC-2018) held on 20-22 December 2018 at JUIT, Solan, IEEE Xplore (27 June 2019), pp. 465-470, DOI: 10.1109/PDGC.2018.8745772 **(Scopus)**.
6. Mamta Mittal, **Hari Singh**, K.K. Paliwal, Lalit Mohan Goyal, "Efficient Random Data Accessing in MapReduce", IEEE International Conference on Infocom Technologies and Unmanned Systems (Trends and Future Directions), IEEE Xplore, pp. 552-556, (ICTUS'2017), Dec 18-20, 2017 at Amity University, Dubai, doi: 10.1109/ICTUS.2017.8286070. **(Scopus)**.
7. **Hari Singh** and Seema Bawa, "Spatial Data Analysis with ArcGIS and MapReduce", In 2016 IEEE International Conference on Computing, Communication, and Automation (ICCCA), pp. 45-49, IEEE Xplore Digital Library, e-ISBN: 978-1-5090-1666-2, p-ISBN: 978-1-5090-1667-9, doi: 10.1109/CCAA.2016.7813687. **(Scopus)**

- ➤ **Workshops/Short Term Courses Attended and Participated - 47**

- ➤ **Conferences/Seminars/Workshops Organized - 11**

- ➤ **Key Co-curricular and Extra-curricular Activities @ JUIT**
1. Member from CSE & IT Dept., Centre of Healthcare Technologies and Informatics (CEHTI) from BT/BI Dept., JUIT since April 2025.
2. Member from CSE & IT Dept., Centre for Climate Change and Water Resources from Civil Engineering Dept., JUIT since July 2025.
3. Coordinator - Question Paper Quality Assessment from CSE&IT since May 2024.
4. Coordinator – Time Table and Teaching Load Allocation (CSE&IT) since May 2024.
5. Coordinator - M.Tech Programme (CSE & IT) at JUIT since August 2023.
6. Coordinator - Centre of Excellence in "Artificial Intelligence for Education" from August 2023.
7. Coordinator – MOOC Courses from CSE&IT since July 2020.
8. Member, Anti-Ragging Committee since January 2024.
9. Member BOS (CSE & IT) since August 2018.
10. Minor-Project Coordinator (CSE&IT) since Jan 2021 to August 2024.
11. Conference General Chair, 2022 7th IEEE International Conference on Parallel, Distributed, and Grid Computing (PDGC), organized by the CSE & IT Department of JUIT, Waknaghat on 25-27 November 2022
12. Conference Chair, 2020 6th IEEE International Conference (PDGC-2020) organized by CSE & IT department on November 06-08, 2020 at JUIT, Waknaghat.

- ➤ **Professional bodies membership**
1. Member IEEE till December 2020 (Membership No.: 95126726)
2. Reviewer and member of IEEE Access since September 2018, P-ISSN:02655012 (Scopus Indexed Journal).
3. Member Computer Society of India, Special Interest Group on Innovation and Entrepreneurship (CSI SIG-IE) since July 2016. This group promotes entrepreneurship and assist in creating and incubating entrepreneurs.
4. Lifetime membership LM 59598 of "The Indian Society for Technical Education (**ISTE)**" since 2008.
5. Membership No. I1504052 of "Computer Society of India **(CSI)**" (valid from 16/3/2016 to 15/3/2020) **.**

- ➤ **PhD Supervision:** 01 Awarded and 03 in Progress

- ➤ **M.Tech Dissertations/Projects Supervision:** 13 Awarded and 01 in Progress

(Dr. Hari Singh)