

RAHUL HANS

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Marital Status: Married | DOB: January 13, 1986

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SUMMARY

- At present, I am working as Associate Professor in the Department of Computer Science and Engineering at DAV University, Jalandhar, India.
- I completed my Ph.D. at Guru Nanak Dev University, Amritsar, India specializing in designing innovative Nature-Inspired Metaheuristic Algorithms for Feature Selection in Machine Learning.
- One of my most recent works was in collaboration with Prof. Uwe Aickelin from the University of Melbourne and we made a substantial contribution in Optimizing Diabetic Retinopathy Diagnoses.
- I am looking for Teaching and Research Opportunities in Machine Learning and Deep Learning focused on the precise Diagnosis of Diseases in Medical Images.

Education

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| 2017-2021 | <i>Doctor of Philosophy(Ph.D.), Computer Science</i> Guru Nanak Dev University, Amritsar, Punjab, India <i>Thesis Title:</i> Study and Design of Improved Nature-Inspired Metaheuristic Algorithms for Feature Selection <i>Supervisor:</i> Dr. Harjot Kaur, Assistant Professor, Department of Computer Science and Engineering, Guru Nanak Dev University, Regional Campus, Gurdaspur, Punjab, India <i>Scored 9.60 CGPA in Pre Ph.D. Course in Computer Science</i> |
| | <i>Guru Nanak Dev University, Amritsar, Punjab, India</i> <i>Thesis Title:</i> Integrating Check pointing with Dynamic Shadow Approach for Fault Tolerance in Mobile Agents System <i>Supervisor:</i> Er. Ramandeep Kaur, Assistant Professor, Department of Computer Science and Engineering, Guru Nanak Dev University, Amritsar, Punjab, India |
| | <i>2010-2012</i> |
| 2005-2009 | <i>Bachelor of Technology (B. Tech.), Computer Science & Engineering</i> Punjab Technical University, Jalandhar, Punjab, India |

Teaching Experience

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| <i>July 2022 to till date</i> | Associate Professor, Department of Computer Science and Engineering, DAV University, Jalandhar, Punjab, India. |
| <i>August 2014 to July 2022</i> | Assistant Professor, Department of Computer Science and Engineering, DAV University, Jalandhar, Punjab, India. |
| <i>July 2013 to April 2014</i> | Assistant Professor, Department of Information and Technology, DAV Institute of Engineering and Technology, Jalandhar, Punjab, India. |

July 2012 to May
2013

Assistant Professor Department of Information and Technology, DAV
Institute of Engineering and Technology, Jalandhar, Punjab, India

Research Summary

Publications

- SCI/SCIE Indexed Journals: 11 papers
- ESCI/Scopus Indexed Journals: 03 papers
- International Conference Proceedings: 13 papers
- Cumulative Journal Impact Factor: 63.2

Research Impact

- Total Citations (Google Scholar): 689
- H-index: 12

Research Supervision

- M.Tech Dissertations Guided: 12
 - Ph.D. Scholars Currently Under Supervision: 03
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Research Interests and Technical Expertise

- **Deep Learning:** MATLAB, PyTorch, Keras
 - **Machine Learning:** MATLAB, TensorFlow
 - **Nature-Inspired Metaheuristics:** Algorithm Design & Optimization
 - **Medical Image Analysis:** Diagnostic model development using MATLAB
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Selected Journal Publications

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| 1. | International Journal of Computational Intelligence Systems | Transfer Learning for Cancer Diagnosis in Medical Images: A Compendious Study. Navreet Kaur, Rahul Hans 2025 Springer Impact Factor: 3.0 https://doi.org/10.1007/s44196-025-00772-0 |
| 2. | Health Information Science and Systems | <i>Optimized deep k-nearest neighbour's based diabetic retinopathy diagnosis (ODeep-NN) using retinal images</i> Rahul Hans, Sanjeev Kumar Sharma, Uwe Aickelin 2024 Springer Impact Factor: 3.4 https://doi.org/10.1007/s13755-024-00282-x |
| 3. | Scientific Reports | <i>An augmentation aided concise CNN based architecture for COVID-19 diagnosis in real time</i> Balraj Preet Kaur, Harpreet Singh, Rahul Hans, Sanjeev Kumar Sharma, Chetna Kaushal, Md. Mehedi Hassan & Mohd Asif Shah 2024 Nature Portfolio Impact Factor: 4.6 https://doi.org/10.1038/s41598-024-51317-y |
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| | | <i>A Genetic algorithm aided hyper parameter optimization based ensemble model for respiratory disease prediction with Explainable AI</i> Balraj Preet Kaur, Harpreet Singh, Rahul Hans, Sanjeev Kumar Sharma, Chetna Sharma, Md. Mehedi Hassan 2024 Plos One https://doi.org/10.1371/journal.pone.0308015 |
| 4. | PLOS ONE | |
| 5. | International Journal of Image and Graphics | <i>Hybrid Biogeography-Based Optimization and Genetic Algorithm for Feature Selection in Mammographic Breast Density Classification.</i> Rahul Hans and Harjot Kaur 2021 World Scientific Scopus and ESCI https://doi.org/10.1142/S0219467821400076 |
| 6. | International Journal of Computational Materials Science and Engineering | <i>Hybrid binary Sine Cosine Algorithm and Ant Lion Optimization (SCALO) approaches for feature selection problem.</i> Rahul Hans and Harjot Kaur 2020 World Scientific Scopus and ESCI https://doi.org/10.1142/S2047684119500210 |
| 7. | International Journal of Interactive Multimedia and Artificial Intelligence | <i>Binary Multi-Verse Optimization (BMVO) Approaches for Feature Selection.</i> Rahul Hans and Harjot Kaur 2020 UNIR Impact Factor: 3.4 10.9781/ijimai.2019.07.004 |
| 8. | Journal of Interdisciplinary Mathematics | <i>Opposition-based Harris Hawks optimization algorithm for feature selection in breast mass classification</i> Rahul Hans, Harjot Kaur and Navreet Kaur 2020 Taylor and Francis Scopus and ESCI https://doi.org/10.1080/09720502.2020.1721670 |
| 9. | International Journal of Machine Learning and Computing | <i>Opposition-Based Enhanced Grey Wolf Optimization Algorithm for Feature Selection in Breast Density Classification.</i> Rahul Hans and Harjot Kaur 10.18178/ijmlc.2020.10.3.957 |
| 10. | International Journal of Interactive Multimedia and Artificial Intelligence | <i>N-grams Based Supervised Machine Learning Model for Mobile Agent Platform Protection against Unknown Malicious Mobile Agents.</i> Pallavi Bagga, Rahul Hans and Vipul Sharma 2017 UNIR Impact Factor: 3.4 10.9781/ijimai.2017.03.013 |

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| 11. | Expert Systems with Applications | <i>A Biological Immune System (BIS) inspired Mobile Agent Platform (MAP) security architecture</i> Pallavi Bagga, Rahul Hans and Vipul Sharma 2017 Elsevier Impact Factor: 8.5 https://doi.org/10.1016/j.eswa.2016.10.062 |
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Selected Conference Publications

1. Navreet Kaur and Rahul Hans
Harnessing Machine Learning Classifiers as Fitness Functions in Metaheuristic-Based Feature Selection for Mammographic Breast Cancer Classification
International Conference on Innovations in Communication, Computing and Sciences (ICCS-2025)
Accepted
 2. Bindu Goyal, **Rahul Hans**, Sanjeev Kumar Sharma
Noise Reduction in Brain MRI Images: A Gaussian Filtering Approach to Enhance Deep Learning Models for Classification
International Conference on Electronics, AI and Computing (EAIC 2025)
Published
 3. Rahul Hans and Navreet Kaur
Breast Mass Pattern Classification using Vision Transformers (ViTs) with varied Optimizers.
The International Conference on Healthcare Innovation and Smart Systems (ICHISS 2024)
Accepted for Publication
 4. Balraj Preet Kaur, Harpreet Singh, Rahul Hans & Sanjeev Kumar Sharma
Machine Learning Algorithms for Prediction of COVID-19 in Early Stages Using Explainable AI Approach
WCAIAA: World Conference on Artificial Intelligence: Advances and Applications,(WCAIAA 2024)
Published
 5. Rahul Hans and Harjot Kaur
Performance Evaluation of Various Nature-Inspired Metaheuristic Algorithms for Feature Selection in Breast Mass Classification
International Conference on Contemporary Issues in Engineering and Technology, (CIET-2021).
Presented and Published
 6. Rahul Hans and Harjot Kaur
Improved Local Search Based Grey Wolf Optimization for Feature Selection.
International Conference on Industrial and Manufacturing Systems (CIMS-2020), **Springer**, Cham.
Presented and Published
 7. Rahul Hans and Harjot Kaur
Quasi-opposition-based multi-verse optimization algorithm for feature selection.
International Conference on Computing, Communications, and Cyber-Security (IC4S-2019) **Springer**.
Published
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8. Rahul Hans and Harjot Kaur
Feature Selection Using Metaheuristic Algorithms: Concept, Applications and Population Based Comparison.
International Conference on Computational Performance Evaluation (ComPE-2020). **IEEE**.
Published
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Patent Publication

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- VOICE BASED CODING PLATFORM FOR VISUALLY AND PHYSICALLY IMPAIRED
Application No.202211064276 A, Publication Date : 25/11/2022
*Harpreet Singh, Parminder Kaur, **Rahul Hans**, Harjot Kaur, Sanjeev Kumar Sharma*
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On-Going Research

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1. *Development of Enhanced Equilibrium Optimization Algorithms for Feature Selection in Breast Mass Classification using Mammogram Images*
 2. *Enhancement of Predictive Accuracy in Transfer Learning Models for Disease Classification in Medical Imaging*
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Roles and Responsibilities:

Teaching

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- Preparation and delivery of the subject matter to the students.
 - Providing career guidance to the students and preparing them for campus placements.
 - Preparing lecture delivery plan.
 - Confirming the completion of the syllabus within the given time.
 - Taking feedback from the students to improve teaching methodologies.
 - Updating the course content from time to time.
 - Taking remedial classes and counseling sessions for slow learners of the class.
 - Preparing question papers and evaluation of student's answer sheets.
 - Preparing the mid semester exam analysis report of the students of the class.
 - Preparing course outcome and program outcome attainment reports.
 - Carry out research and publish research articles in various journals.
 - Supervise PG and PhD research scholars.
 - Organize various workshops and seminars.
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Department Coordinator

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- Ensure the efficient and effective functioning of the department.
 - Oversee the timely preparation of the departmental timetable and examination date sheets.
 - Maintain the smooth and uninterrupted conduct of classes.
 - Organize regular meetings with faculty members to discuss relevant academic and administrative matters.
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- Provide leadership to the department with the goal of achieving excellence in all departmental activities and securing top positions.
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Deputy Director Internal Quality Assurance Cell (IQAC)

- To Work closely with faculty members, students and administrative authorities for the development and continuous assessment of the best possible strategies for quality enhancement.
 - Facilitating the creation of a student-centric teaching learning environment conducive for quality education.
 - Arrangement for feedback responses from students, parents and other stakeholders on quality related institutional processes.
 - Dissemination of information on the various quality parameters of higher education. Organization of inter and intra institutional workshops, seminars on quality related themes.
 - Documentation of the various programmes/activities of the University, leading to quality improvement.
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REFERENCES

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| Dr. (Mrs.) Parminder Kaur | Professor Department of Computer Science Guru Nanak Dev University, Amritsar, Punjab, India. Email: parminder.dcse@gndu.ac.in Phone No.- +919914010452 |
| | Assistant Professor Department of Engineering & Technology Guru Nanak Dev University, Regional Campus, Gurdaspur, Punjab, India. Email: harjotkaursohal@rediffmail.com Phone No.- +919872477145 |

DECLARATION

I hereby declare that all the details provided above are true to the best of my knowledge.

Rahul Hans