**RAHUL HANS**

B.Tech.| M.Tech.| Ph.D.

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Marital Status: Married | DOB: January 13, 1986

**SUMMARY**

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

**Teaching Experience**

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| ***July 2022 to till date*** | Associate Professor, Department of Computer Science and Engineering, DAV University, Jalandhar, Punjab, India. |
| ***August 2014 to July 2022*** | Assistant Professor, Department of Computer Science and Engineering, DAV University, Jalandhar, Punjab, India. |
| ***July 2013 to April 2014*** | 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**

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| **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 |

**Research Interests and Technical Expertise**

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

**Publications in SCI, SCIE, ESCI, and Scopus-indexed journals**

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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 | [***Optimized deep k-nearest neighbour’s based diabetic retinopathy diagnosis (ODeep-NN) using retinal images***](https://scholar.google.co.in/citations?view_op=view_citation&hl=en&user=2Tx04IcAAAAJ&sortby=pubdate&citation_for_view=2Tx04IcAAAAJ:MXK_kJrjxJIC)  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 | ***An augmentation aided concise CNN based architecture for COVID-19 diagnosis in real time***  *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 |
| 4. | PLOS ONE | ***A Genetic algorithm aided hyper parameter optimization based ensemble model for respiratory disease prediction with Explainable AI***  *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 |
| 5. | International Journal of Image and Graphics | ***Hybrid Biogeography-Based Optimization and Genetic Algorithm for Feature Selection in Mammographic Breast Density Classification.***  *Rahul Hans and Harjot Kaur*  2021 |World Scientific | **Scopus and ESCI**  [*https://doi.org/10.1142/S0219467821400076*](https://doi.org/10.1142/S0219467821400076) |
| 6. | International Journal of Computational Materials Science and Engineering | ***Hybrid binary Sine Cosine Algorithm and Ant Lion Optimization (SCALO) approaches for feature selection problem*.**  *Rahul Hans and Harjot Kaur*  2020 |World Scientific | **Scopus and ESCI**  [*https://doi.org/10.1142/S2047684119500210*](https://doi.org/10.1142/S2047684119500210) |
| 7. | International Journal of Interactive Multimedia and Artificial Intelligence | ***Binary Multi-Verse Optimization (BMVO) Approaches for Feature Selection*.**  *Rahul Hans and Harjot Kaur*  2020 |UNIR | **Impact Factor: 3.4**  [*10.9781/ijimai.2019.07.004*](file:///C:\Users\Welcome\Desktop\my%20personal%20and%20cann\pdoc%20surrey\New%20surrey\10.9781\ijimai.2019.07.004) |
| 8. | Journal of Interdisciplinary Mathematics | ***Opposition-based Harris Hawks optimization algorithm for feature selection in breast mass classification***  *Rahul Hans, Harjot Kaur and Navreet Kaur*  2020 |Taylor and Francis | **Scopus and ESCI**  [*https://doi.org/10.1080/09720502.2020.1721670*](https://doi.org/10.1080/09720502.2020.1721670) |
| 9. | International Journal of Machine Learning and Computing | ***Opposition-Based Enhanced Grey Wolf Optimization Algorithm for Feature Selection in Breast Density Classification*.**  *Rahul Hans and Harjot Kaur*  [*10.18178/ijmlc.2020.10.3.957*](file:///C:\Users\Welcome\Desktop\my%20personal%20and%20cann\pdoc%20surrey\New%20surrey\10.18178\ijmlc.2020.10.3.957) |
| 10. | International Journal of Interactive Multimedia and Artificial Intelligence | ***N-grams Based Supervised Machine Learning Model for Mobile Agent Platform Protection against Unknown Malicious Mobile Agents.***  *Pallavi Bagga, Rahul Hans and Vipul Sharma*  2017 |UNIR |**Impact Factor: 3.4**  [*10.9781/ijimai.2017.03.013*](file:///C:\Users\Welcome\Desktop\my%20personal%20and%20cann\pdoc%20surrey\New%20surrey\10.9781\ijimai.2017.03.013) |
| 11. | Expert Systems with Applications | ***A Biological Immune System (BIS) inspired Mobile Agent Platform (*MAP) security architecture**  Pallavi Bagga, Rahul Hans and Vipul Sharma  2017 |Elsevier| **Impact Factor: 8.5**  [*https://doi.org/10.1016/j.eswa.2016.10.062*](https://doi.org/10.1016/j.eswa.2016.10.062) |

**Conference Articles**

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| 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***   * 1. 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***   * 1. 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***   * 1. 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***   * 1. 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***   * 1. 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***   * 1. 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*** |

**Patent Publication**

* 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*

**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* |

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