
Dr. Nishtha Hooda



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Research Interests

Data Science, Machine Learning, Big Data Analytics, Graph Theory, Healthcare Analytics

Education

2015-2019	Ph.D (Thapar University, Patiala) Thesis Title: <i>Ensemble Machine Learning Framework for Big Data Analytics</i>	90.00%
2012-2014	M.E in Software Engineering (Thapar University, Patiala)	88.3%
2007-2011	Bachelor in Information Technology (Kurukshetra University, Haryana)	74.2%
2006-2007	Senior Secondary Examination Bal Vikas School (Central Board of Secondary Examination)	79.4%
2004-2005	Secondary Examination Bal Vikas School (Central Board of Secondary Examination)	88.4%

Teaching Experience

July 2012- Jun 2014	GATE Teaching Assistant	Thapar University, Patiala
July 2014- Jan 2015	Assistant Professor	Chandigarh University, Punjab
Jan-2015-2018	Senior Research Fellow (MIETY Project, Govt. of India)	Thapar University, Patiala
Aug 2018-July 2020	Assistant Professor	Chandigarh University, Punjab
Oct 2020-Dec 2020	Visiting Faculty	IIITM, Gwalior
July 2020-Present	Assistant Professor	IIIT, Una

Certification

ISTQB CERTIFICATION (CTFL 2013) with 82.5 %

GATE CERTIFICATION (GATE 2012): 97 percentiles in Computer Science

Workshops Attended

May 2019	Design Thinking 5 days Certification, CU, Mohali
April 2019	CME on Cancer Registries, PGI, Chandigarh
April 2019	Machine Learning in Healthcare at R Systems, Noida
June 2019	Scientific Writing using LaTeX, TIET, Patiala
July 2020	Optimization using Nature Inspired Algorithm using Python, TIET, Patiala
April 2021	Arogya, CIBIOD, PGI, Chandigarh
July 2021	ATAL FDP on Leadership Excellence in Academics, NITK, Suratkal

Workshops Conducted

October 2018	Big Data Analytics and Machine Learning at S.D. College, Chandigarh.
November 2019	Hands-on Weka Tool for Machine Learning at Chandigarh
January 2020	AR/VR/MR Symposium at UCRD, Chandigarh University.
July 2021	Assistant Coordinator at ATAL DATA SCIENCE FDP at IIIT Una.

Conference Publications

- i. **Nishtha Hooda** and Vinod K. Bhalla, "Exploratory Testing: A Review and Questionnaire Investigation" at International Conference on Mathematics and Engineering Sciences -2014 (ICMES-2014).
- ii. **Nishtha Hooda** and Vinod K. Bhalla, " 2014 Testing Trend Is Not Purely Ad hoc: Exploratory Testing Algorithmic Design and Metrics Implementation" International Conference on "Emerging Research in Computing, Information, Communication and Applications" (ERCICA-2014)".
- iii. **Nishtha Hooda**, Seema Bawa, Prashant Singh Rana, "T-Ensemble Approach for Drug Toxicity Prediction," at International Conference on Science, Engineering, Law and Management, Kuala Lumpur, Malaysia Security, Jan. 2017.
- iv. **Nishtha Hooda**, Seema Bawa, Prashant Singh Rana "Multi Criteria Model Reduct Ensemble for Wireless Sensor Network : A Case Study of Routing Protocol Prediction" at IEEE ICCCS Conference. Kathmandu, Nepal. 2018.
- v. Sujay, **Nishtha Hooda**, Predicting Risk of Cervical Cancer: A Case Study of Machine Learning, ICETCE- Conference. Jaipur, India. 2019.
- vi. Harvinder Singh, **Nishtha Hooda**, " Prediction of Underwater Surface Target through SONAR: A Case Study of Machine Learning," ICETCE International Conference, Jaipur, India. 2019.
- vii. Sankalp Sharma, **Nishtha Hooda**, "Big Data Machine Learning Framework for Drug Toxicity Prediction," at ICETCE International Conference, Jaipur, India. 2019.
- viii. Karan Jakhar, **Nishtha Hooda**, Big Data Deep Learning Framework using Keras: A Case Study of Pneumonia Prediction, IEEE International Conference on Computing Communication and Automation, Noida, India. 2019.
- ix. Raghvi Bhardhwaj, **Nishtha Hooda**, Neural Network Ensemble based Prediction System for Chemotherapy Pathological Response: A Case study at ICACCT-2019, NIT Kurukshetra. 2019.
- x. Akriti Sharma, **Nishtha Hooda**, Ruchika Gupta, Breast Cancer Recurrence Prediction in Biopsy using Machine Learning Framework at ICACCT-2019, NIT Kurukshetra. 2019.
- xi. Akriti Sharma, **Nishtha Hooda**, Nidhi Rani, Impact of COVID-19 Lockdown on the Risk of Breast Cancer: A Case Study" at AEES 2022, NIT Raipur. 2022.

- i. Harmandeep Kaur, **Nishtha Hooda**, Efficient k-anonymization of Social Network Data using Ensemble Machine Learning, Journal of Information Security and Applications, 2022.
(**SCI Indexed, Impact Factor 3.872**) [Accepted]
- ii. Gurpreet Singh, **Nishtha Hooda**, Prediction of Musculoskeletal Abnormalities of Finger using CombNET-512 Deep Neural Network, Scientific Reports, 2022.
(**SCI-Indexed IF: 4.38**) [Accepted]
- iii. Gagandeep, Ruchika Gupta, Nishtha Hooda, Nidhi Rani, "Machine Learning Techniques and Breast Cancer Prediction: A Review". Wireless Personal Communication International Journal, 2022
(**SCI Indexed, Impact Factor: 1.7**). [**Published**]
- iv. Monika, **Nishtha Hooda**, Meena Malik, Review on Neuro-Fuzzy System, SSRN Journal, 2022.
(**Scopus Indexed**). [**Published**]
- v. **Nishtha Hooda**, Ruchika Gupta, Nidhi Rani Gupta, Prediction of Malignant Breast Cancer Cases using Ensemble Machine Learning: A Case Study of Pesticides Prone Area, IEEE/ACM Transactions of Computational Biology and Bioinformatics, 2020.
(**SCI Indexed, Impact Factor: 3.71**) [Published]
- vi. **Nishtha Hooda**, Jasgurpreet Singh Chauhan, Ruchika Gupta, Raman Kumar, Deposition angle prediction of Fused Deposition Modeling process using ensemble machine learning, ISA Transactions, 2021
(**SCI Indexed, Impact Factor 5.4**) [Published]
- vii. Chopra, Hetarth, Harsh Singh, Manpreet Singh Bamrah, Faleah Mahbubani, Ashish Verma, **Nishtha Hooda**, Prashant Singh Rana, Rohit Kumar Singla, and Anant Kumar Singh. "Efficient Fruit Grading System using Spectrophotometry and Machine Learning Approaches." IEEE Sensors Journal, 2021.
(**SCI Indexed, Impact Factor 3.3**) [Published]
- viii. Magoo, R., Singh, H., Jindal, N., **Hooda, N.** and Rana, P.S. Deep learning-based bird eye view social distancing monitoring using surveillance video for curbing the COVID-19 spread. Neural Computing and Applications, pp.1-8, 2021.
(**SCI Indexed, Impact Factor 5.6**) [Published]
- ix. **Nishtha Hooda**, Seema Bawa, Prashant Singh Rana, "Optimizing Fraudulent Firm Prediction Using Ensemble Machine Learning: A Case Study of an External Audit." Applied Artificial Intelligence 34.1 (2020): 20-30, 2019.
(**SCI Indexed, Impact Factor 1.5**) [Published]
- x. Raghvi Bhardwaj and **Nishtha Hooda**. "Prediction of Pathological Complete Response after Neoadjuvant Chemotherapy for breast cancer using ensemble machine learning." Informatics in Medicine Unlocked 16, 2019 (**Scopus Indexed**).
- xi. Rohit Sharma, **Nishtha Hooda**, "Optimized Ensemble Machine Learning Framework for High Dimensional Imbalanced Bio Assays." Revue d'Intelligence Artificielle, 387-392, 2019.
(**Scopus Indexed**).
- xii. Rishith Rayal, Divya Khanna, Jasminder Kaur, **Nishtha Hooda**, Prashant Singh Rana, " Nsemble: neural network based ensemble approach". International Journal of Machine Learning & Cybernetics, 2018.
(**SCI Indexed Impact Factor 4.012**)
- xiii. **Nishtha Hooda**, Seema Bawa, Prashant Singh Rana "B2FSE Framework for High Dimensional Imbalanced Data: A Case Study for Drug Toxicity Prediction" in Elsevier Neurocomputing Journal, Special Issue on Computational Biology and Bio computing in Biological Complex and Big Data". 2018.
(**SCI Indexed Impact Factor: 5.72**)
- xiv. **Nishtha Hooda**, Seema Bawa, Prashant Singh Rana, "Fraudulent Firm Classification: A Case Study of an External Audit". Applied Artificial Intelligence, 32(1), 48-64, 2018
(**SCI Indexed Impact Factor 1.5**)

Manuscript Under Review

- i. Neha Sood, **Nishtha Hooda**, Multidimensional Health Assessment during COVID-19 Outbreak using Socially Aware Intelligent Clinical Decision Support System, Health Information Science and Systems (**SCI Indexed, Impact Factor: 4.5**) [Under Review]
- ii. Mahak Kapoor, **Nishtha Hooda**, Epi-Alert: Epileptic Seizure Prediction with EEGs using Ensemble Machine Learning, IEEE Transactions on Cognitive and Developmental Systems (**SCI Indexed Impact Factor 2.7**) [Under Review]

ME Thesis Guided

- i. Title: *Ensemble Machine Learning Framework for the Prediction of Pathological Complete Response after Neoadjuvant Chemotherapy for Breast Cancer* (2018).
- ii. Title: *Efficient Ensemble Learning Framework for the Prediction of Active and Inactive Compounds of Bioassays* (2019).

Projects Submitted

- A project titled “Cow Wellness Tracking Device” has been submitted to DST, under Device Development Programme at the cost of Rs. 23,46,680/- [File No. TPN / 57490]
- A project titled “Breast Cancer Risk Prediction: A Machine Learning based Health Care Solution” has been submitted to SERB, under POWER Research Grant at the cost of Rs. 20,91,680 /- [File No : SPG/2020/000250]
- A project titled “Mansa Pramash: Predictive Modelling of Severity of Depression using Machine Learning and Artificial Intelligence Approach” has been submitted to DST, under Swarna Jayanti Fellowship Scheme at the cost of Rs. 21,90,800/- [File No. DST/SJF/ET/2021/378]
- A project titled “SAHARA : Smart Wheelchair using Artificial Intelligence” has been submitted to DST, under Cognitive Science Research Initiative (CSRI) in collaboration with *IIT, Jammu* at the cost of Rs. 50,31,049/-

Patent

- i. Portable Hand Acupressure Device (Application Number: 202011043141, Status: Published on 23/10/2020).
- ii. Indoor Air Filtration Device (Application Number: 202111000131, Status Published on 08/01/2021).
- iii. Predictive Performance Evaluation System (Application Number 202011009162, Status Published on 10/9/2021).
- iv. Epiderma (Patent Application under Review).

Membership/ Associations

- IEEE
- Visvesvaraya PhD scheme for Electronics and IT
- Heartfulness