Law Kumar Singh
Assistant Professor, Dy. HOD
Hindustan College of Science and Technology-
MATHURA-281122
Contact:9760386496
Email: law.singh.hcst@sgei.org

Qualification	:	B-Tech(CSE), M-Tech(CSE), Ph.D.(CSE) (Thesis Submitted)
Department	:	Computer Science and Engineering
Experience (Academics/Industry/Research)	:	14 Years
Research Interest	:	Image Processing, Computer Vision, Machine Learning ,Deep Learning
Ph.D. Supervising	:	
BTech/MTech/MPhil Dissertation supervised		B.Tech.:30+
Research Publications	:	Journal: 21 Conference: 6 Book Chapter: 3 Patents**:**2

Journals:

1. **Law Kumar Singh, Pooja , Hitendra Garg, Munish Khanna,** An IoT based Predictive Modeling for Glaucoma Detection in Optical Coherence Tomography Images Using Hybrid Genetic Algorithm, ***Multimedia Tools Application*** (2022). (**Accepted**) **(Impact Factor: 2.757) (SCI)**

2. **Law Kumar Singh, Munish Khanna, Shankar Thawkar ,** A novel hybrid robust architecture for automatic screening of glaucoma using fundus photos, built on feature selection and machine learning-nature driven computing (2022).**Expert System,** Article DOI: 10.1111/exsy.13069 **https://doi.org/10.1111/exsy.13069** (**Impact Factor :2.587**) **(SCI)**

3. **Law Kumar Singh**, Pooja, Garg, H. *et al.* Performance evaluation of various deep learning based models for effective glaucoma evaluation using optical coherence tomography images. ***Multimedia Tools Application*** (2022). https://doi.org/10.1007/s11042-022-12826-y**(Impact Factor: 2.757) (SCI)**

4. **Law Kumar Singh, Pooja, Hitendra Garg and Munish Khanna,** Deep Learning System Applicability for Rapid Glaucoma Prediction from fundus images across various data sets ,**Evolving Systems** , springer **(Impact Factor: 1.908) (SCI)**

5. **Law Kumar Singh**, Khanna, M. & Pooja (2022). A novel multimodality based dual fusion integrated approach for efficient and early prediction of glaucoma. **Biomedical Signal Processing and Control**, 73, 103468**(Impact Factor :3.88)(SCI)**

6. **Law Kumar Singh**, Pooja, Garg, H. *et al.* An enhanced deep image model for glaucoma diagnosis using feature-based detection in retinal fundus. ***Medical and Biological Engineering and Computing*** **(MBEC) ,59,** 333–353 (2021). https://doi.org/10.1007/s11517-020-02307-5 **(SCI,SCIE) (Impact Factor : 2.602) (SCI)**

7. Khanna, M., Agarwal, A., **Law Kumar Singh**, Thawkar, S., Khanna, A., & Gupta, D. (2021). Radiologist-Level Two Novel and Robust Automated Computer-Aided Prediction Models for Early Detection of COVID-19 Infection from Chest X-ray Images. ***Arabian Journal for Science and Engineering*****, 1-33.** https://doi.org/10.1007/s13369-021-05880-5 **(Impact Factor : 2.334) (SCIE)**

8. Shankar Thawkar, Satish Sharma, Munish Khanna, **Law kumar Singh**, Breast cancer prediction using a hybrid method based on Butterfly Optimization Algorithm and Ant Lion Optimizer, **Computers in Biology and Medicine**, Volume 139,2021, 104968, ISSN 0010-4825, https://doi.org/10.1016/j.compbiomed.2021.104968. **(Impact Factor : 4.589) (SCI)**

9. Thawkar, Shankar**, Singh, Law Kumar,** and Khanna, Munish. 'Multi-objective Techniques for Feature Selection and Classification in Digital Mammography'. Intelligent Decision Technologies, vol. 15, no. 1, pp. 115-125, 2021 , DOI: 10.3233/IDT-200049 **(ESCI, SCOPUS)**

10. ***LAW KUMAR SINGH****, Pooja and Garg Hitendra and Khanna Munish* ,Histogram of Oriented Gradients (HOG) Based Artificial Neural Network (ANN) Classifier for Glaucoma Detection , **International Journal of Swarm Intelligence Research(IJSIR)** Emerging Sources Citation Index (2020),Volume 13, Issue 4 ,Article 9. **(ESCI, SCOPUS)**

11. ***LAW KUMAR SINGH****, Khanna Munish, Shankar Thawakar and Prof. Jagadeesh Go*pal "**Robustness for authentication of the Human using Face, Ear, and Gait multimodal biometric system", IGI** Global, International Journal of Information System Modeling and Design (IJISMD), **(2021) Volume 12, Issue 1, Article 5. (ESCI, SCOPUS)**

12. ***LAW KUMAR SINGH****, Khanna Munish and Garg Hitendra* ,"Multimodal Biometric based on Fusion of ridge features with minutiae features and face features", **IGI Global, International Journal of Information System Modeling and Design (IJISMD)**, (2020) IJISMD: Volume 11, Issue 1, Article 3 DOI: 10.4018/IJISMD.2020010103 **(ESCI, SCOPUS)**

13. *Khanna Munish*., Kulshreshtha Mohak., **Law Kumar Singh,** Performance Evaluation of Machine Learning Algorithms for Stock Price and Stock Index Movement Prediction Using Trend Deterministic Data Prediction, **IJAMC**: **IGI Global** Volume 13, Issue 1, Article 36. **(ESCI, SCOPUS)**

14. *Khanna Munish, Chauhan Naresh , Sharma Dilip and* ***LAW KUMAR SINGH***, "A multi-objective approach for test suite reduction during testing of Web Applications: A Search Based Approach" ,IGI GLOBAL, International Journal of Applied Metaheuristic Computing(IJAMC), (2020): Volume 12, Issue 3, Article 4. **(ESCI, SCOPUS)**

15. ***Law Kumar Singh,*** Pooja and Garg Hitendra "A Novel Deep Learning approach for Detection of Glaucoma" Journal of Advanced Research in Dynamical and Control Systems,(2019) ISSN Number:1943023X **(SCOPUS)**

16. ***Law Kumar Singh,*** Pooja and Garg Hitendra, "Multiobjective approach based on detection of Glaucoma in retinal images", IGI GLOBAL, International Journal of Applied Evolutionary Computation (IJAEC), (2019) ISSN: 1942-3594, Volume 11, Issue 2, Article 2. **(DBLP)**

17. ***Law Kumar Singh,*** *Hitendra Garg, Pooja, Munish Khanna* ,Performance analysis of machine learning technique for glaucoma detection based on textural and intensity features", International Journal of Innovative Computing and Applications (IJICA) **INDERSCIENCE. (**2020) **(SCOPUS)**

18. ***Law Kumar Singh***, "Hair Pattern Biometric Detection: Review" International Journal of Embedded Systems and Emerging Technologies (2017) eISSN : 2456-723X

19. ***Law Kumar Singh***,"Security of User's Private attributes" in International Journal of Engineering Research and Technology, Volume 3, Issue. 04 April-2014 ISSN: 2278- 0181.

20. ***Law Kumar Singh***, chaudhary Deepak and varshney gopalji, "A Novel approach of 3D watermarking algorithm using vertex normal" in International Journal of Computer application, New York (USA) number-5 Volume-60, (2012) .ISBN: 973-93-80871-85-2.

21. ***Law Kumar Singh*** and Gupta Praveen, "Personal Authentication Based on Iris Recognition" in International Journal of Science and Research,Volume-5 ,Issue-2,(2014), ISSN : 2319-7064

International Conferences:

1. SINGH LAW KUMAR, Pooja, Garg Hitendra" Detection of Glaucoma in Retinal Fundus Images Using Fast Fuzzy C means clustering approach", In Proc. Of International Conference on Computing,

Communication and Intelligent Systems (ICCCIS-2019) (IEEE Conference) (ISBN No: 978-1-7281-4826-7.) DOI: 10.1109/ICCCIS48478.2019.8974539

2. SINGH LAW KUMAR, Garg Hitendra and Pooja," Detection of Glaucoma Disease in Retinal Images using Machine Learning: An Analysis", International Conference on Advances in Systems, Control and Computing (AISCC-2020) to be held at Malaviya National Institute of Technology Jaipur (MNIT Jaipur) during February 27-28, 2020.(Accepted)(will be published in Algorithms for Intelligence Systems, Springer.)

3. SINGH LAW KUMAR, "Analyzing the Total Order Broadcast algorithms" Organized by Jiwaji University, Gwalior, June 10 th – 11 th , 2011 sponsored by Computer Society of India and Institute of Electronics and Telecommunication Engineers, Gwalior.

4. SINGH LAW KUMAR ,"Analysis the classification of 3D object watermarking "in International Conference on Recent Trends in Engineering & Technology (ICRTET 2012) Proceeding ISBN: 978-81-925922-0-6 Organized by: Subharti Institute of Technology & Engineering(SITE) Swami Vivekananda Subharti University.

5. SINGH LAW KUMAR,AGARWAL RISHABH,GOYAL SHUBHAM,PUNJABI SONAM and SURUCHI SINGH "Comprehensive Study Of Personal Authentication Based On Iris Recognition" National Conference on Advances in Information and Communication Technology-2015(NCAICT-2015) Department of CSE & IT Madhav Institute of Technology & Science Gwalior- 474 005 (M.P.) India

6. SINGH LAW KUMAR,VERMA ARCHANA ,GUPTA CHANDANI,SHARMA HARSHITA and SONI HEMANT "Comprehensive Study of Drowsiness Detection System" National Conference on Advances in Information and Communication Technology-2015(NCAICT-2015) Department of CSE & IT Madhav Institute of Technology & Science Gwalior- 474 005 (M.P.) India

Certifications:

1. NPTEL Elite certification "12 week course" on Compiler Design, IIT Kharagpur (2019)
2. NPTEL certification "12 week course on Machine Learning for Engineering and Application, IIT Madras(2019)
3. NPTEL certification 'Deep Learning"(2020)
4. NPTEL certification "Machine Learning"(2020)
5. NVIDIA Deep Learning Institute Certificate of Competency on "Fundamental of Deep Learning for Computer vision"
6. Certified Oracle Academy instructors for JAVA Fundamental and Programming on 14 June2013.

Book Chapter	:	1. SINGH LAW KUMAR, Garg Hitendra and Pooja, "Automated glaucoma type identification using Machine learning or Deep Learning techniques" In Advancement of Machine Intelligence in Interactive Medical Image Analysis", (pp. 241- 263),Springer, Singapore(2020) Chapter DOI. 10.1007/978-981-15-1100-4_12 2. Singh Law Kumar, Pooja, Hitendra Garg, Munish Khanna, Robin Bhadoria, "**An Analytical Study on Machine Learning Techniques", BooK Name Multidiscipinary Functions of Bockchain Technoogy in AI and IoT Application,**

		ISBN13: 9781799858768|ISBN10: 1799858766|EISBN13: 978179985 8775|DOI: 10.4018/978-1-7998-5876-8 **3.** Law Kumar Singh , Munish Khanna Chapter Title: "Introduction to Artificial Intelligence" Edited Book Title: "Innovations in Artificial Intelligence and Human Computer Interaction In the Digital Era" , **Elsevier (Accepted)**
STTP/FDP/ Workshop		**1.** Attended 4th One Week Online Faculty Development Program "Recent Advances in Computer Science and Allied Domains(RACSAD-2022)" 20th – 25th JUNE 2022 organized by Department of CSE ,Sharda University Greater Noida. **2.** Participated two weeks (40 hours) online Faculty Development Program on Machine Learning for Computer Vision "Jointly Organized by Electronics and ICT Academics at IIT Rorkee, MNIT Jaipur, NIT Patna, NIT Warangal and PDPM IIITDM Jabalpur during Feb 21-Mar 4, 2022 under the scheme offinancial assistance for setting up of Electronics and ICT Academics of the Ministry of Electronics and Information Technology (MeitY), Government of India. The Program is recognized by AICTE/UGC. **3.** Participated and completed successfully AICTE training and Learning (ATAL) Academy online elementary FDP on Bio-Inspired Computing for Data Analytics from 08 Feb to 12 Feb 2022, at LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING **4.** Participated and completed successfully AICTE training and Learning (ATAL) Academy online elementary FDP on Artificial Intelligence in contemporary Biomedical & Healthcare Applications: Fundamentals & Hands on MATLAB from 21 Jan to 25 Jan 2022, at Gautam Buddha University ,Greater Noida **5.** Participated two weeks (40 hours) online Faculty Development Program on Deep Learning & Applications (Parallel Architectures) Jointly Organized by Electronics and ICT Academics at IIT Guwahati, IIT Kanpur, IIT Rorkee, MNIT Jaipur, NIT Patna, NIT Warangal and PDPM IIITDM Jabalpur during Aug 23-Sept 3, 2021 under the scheme of financial assistance for setting up of Electronics and ICT Academics of the Ministry of Electronics and Information Technology (MeitY), Government of India. The Program is recognized by AICTE/UGC. **6.** Successfully Completed online Faculty Development Program on Advanced Optimization Techniques and hands on with MATLAB/SCILAB jointly organized by MNIT Jaipur, NIT Patna, PDPM IIITDM Jabalpur and IIT Guwahati during 6th September to 17th September 2021.This program is endorsed by NBA/AICTE/UGC. **7.** Attended Five days online Artificial Intelligence, 04 Jan to 09 Jan 2021, GSSS INSTITUTE OF ENGINEERING AND TECHNOLOGY FOR WOMEN **8.** Attended One Week STTP Internet of things and Data Analytics

		Conducted by Department of Information Technology , 02nd to 08th December 2020, JSS Academy of Technical Education, NOIDA **9.** Attended Five Days FDP Information Security and Privacy, 26 May – 30,2020, MNIT, Allahabad, Prayagraj, Uttar Pradesh, India **10.** Five Days FDP Machine Learning and Deep Learning from 27 - 31, 2020, Department of Electronics and Instrumentation Engineering, SRM institute of Science and Technology, Kattankulathur **11.** Attended one Week FDP from 24 Nov to 29 Nov, 2019**,"AICTE Sponsored One Week Short Term Training Program on Deep Learning, Machine Learning and Pattern Recognition"** at SCET, Surat. **12.** Attended training program on **Microsoft Cloud and AI at the Digital Governance Tech Summit on 27th August 2019.** **13.** Attended one day Workshop cum Brainstorming Session on Sunrising Technologies held at **Dr. A.P.J. Abdul Kalam Technical University Uttar Pradesh Lucknow** on 18th March **2019**. **14.** Attended workshop on Machine Learning held at **AICTE HQ,New Delhi** during 7-8 February **2019.** **15.** Attended Short term course on Deep Learning: Theory and practice at Department of Computer Science and Engineering **IIT (BHU)** Varanasi sponsored by AICTE QIP from December 12-17, **2018**(6 Days) **16.** Attended Short Term Course (5 Days) on Faculty Development Program on High Performance Computing and Deep Learning from (21-25 October) **2018** at **EICT IIT Roorkee.** **17.** Attended Short Term Course (5 Days) on Image Processing Algorithm and Application at **IIT (DHANBAD**) (13-17 JUNE) **2016**. **18.** Faculty Development programmed Organized by BMAS Engineering College from January 01 through 05,**2007** sponsored by AICTE at BMAS, Agra **19.** Faculty development program on Teaching Learning strategies from 15-05-**2006** to 27-05-**2006** at Hindustan college of science and Technology, Farah (Mathura) **20.** National Seminar on Artificial Intelligence(NSAI,07),April 28-29,2007 at Department of Computer Science, Hindustan college of Science and Technology, Farah(Mathura) **21.** Scientific Computing in Biomedical Engineering" organized by department of Computer Science and engineering and Bio Tech Department sponsored by DST,DIT,DBT, August 30-31,2008 at Hindustan college of science and Technology, Mathura. **22.** Workshop on "Application of MATLAB in Teaching and Research" Organized by Department of Electronic and Telecommunication from April 29-30, 2006 at CSE, Hindustan College of science and

		Technology. **23.** Workshop on Latex: The language of Scientific Writing [LaTex-2012] from March 17-18, 2012 at Department of Computer Science and Information Technology, HITM Agra. **24.** Successfully completed the training in IBM SEED program from 12-Dec-12 to 16-Dec-12,Technology used: RATIONAL SOFTWARE ARCHITECT at HCST **25.** One Week Interdisciplinary National Workshop on Computer Skill Development and Training programme(CSDTP-2014) March 06-10,2014 at Department of Computer Science and Application Govt. Maharaja Autonomous College, Chhatarpur(M.P.) **26.** Participated in the Technology Conclave delhi 2011 at Siri Fort, New Delhi on December 2011 **27.** National Workshop on "Emerging Trends in Information Retrieval" (ETIR-2014)September 27,2014 at Department of Computer Engineering and Application, GLA University, Mathura(U.P.) INDIA **28.** Participated in the 10th All India Students Conference on Science and Spiritual Quest(AISSQ)2016 **29.** Participated in the workshop on "How to Teach C:Fundamental and Advance of C" Held on 22nd October 2010 at CSE,HCST **30.** Participated in the workshop on Understanding Data Structure using C held on the 26th of September 2011 at CSE,HCST
Patents		2
Achievements		
International Journal Reviewer	:	Computers in biology and medicine, IMA IMAGING SYSTEMS AND TECHNOLOGY WILEY, Neural Processing Letter
Award	:	
Membership in Professional Bodies	:	• Corporate Member of IETE • IAENG • IEEE