



MAHARAJA SURAJMAL INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

TECHBYTE

NEWSLETTER

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What's Inside ?

- Research Publications
- Patents Published
- Books Published
- Book Chapters
- Projects Undertaken
- Faculty Achievements
- Student Achievements
- FDPs Attended
- Events Organised

Maharaja Surajmal Institute of Technology was established in 2001 with the approval of AICTE for conducting B.Tech courses in IT, CSE, ECE, and EEE, and is affiliated to Guru Gobind Singh Indraprastha University, New Delhi. Ours is a NAAC and NBA accredited Institution. It is ranked in 250-300 block by NIRF. We are a team of 25 full-time faculty members, 01 ad-hoc faculty member, 05 technical assistants and more than 800 undergraduate students. This Newsletter highlights the remarkable accomplishments of the IT Department. From a myriad of research papers, patents and books covering diverse subjects, to engaging and enriching events orchestrated by faculty, students, and societies, it offers a comprehensive glimpse into the IT Departments endeavours. We have devoted ourselves to surmounting all challenges to impart and inculcate the best principles, processes, and practices in learning, teaching and research work in IT.

Research Publications



Journals



1. Enhancing COVID-19 Diagnosis Accuracy and Transparency with Explainable Artificial Intelligence (XAI) Techniques"

Malik, S., Rathee, P.

SN COMPUTERS 5, 806 (2024). Scopus

2. "Machine Learning-based Energy Optimization and Anomaly Detection for Heterogeneous Wireless Sensor Network"

T. Sharma, A. Balyan, A. K. Singh

SN COMPUTERS 5(6), 751 (2024). Scopus

3. "Conditional Spatial Biased Intuitionistic Clustering Technique for Brain MRI Image Segmentation"

J. Arora, T. Sharma

Frontiers in Computational Neuroscience, 18: 1425008 (2024). SCIE

4. "GreenConnect: A Cutting-Edge Optical Sensor Based Gardening Automation System"

T. Sharma et al.

Eng Proc, Vol 6. Scopus

5. "Contextual Embedded Text Summarizer System: A Hybrid Approach"

J. Arora, T. Sharma

Expert Systems, Wiley, 2024, ISSN- 1468-0394, SCIE

6. "An Enhanced Integrated Method for Healthcare Data Classification with Incompleteness"

J. Arora, T. Sharma

Computers, Materials and Continua, 81(2), 3125-3145, 2024, SCIE

7. "NeuArt- Style Transfer Using VGG19 & RESNET50 – A Comparison"

Tripti Sharma, Mamta Gahlan

International Journal of Research Publication and Reviews, Vol 5, no 1, pp 2246-2251, January 2024. Google Scholar

8. "Comparison of Various Youtube Transcript Summarizer Techniques"

Tripti Sharma, Neetu Anand

International Journal of Progressive Research in Engineering Management and Science, Vol.4(1), 53-56, 2024, ISSN 2583-1962. Google Scholar

9. "Fuzzy Clustering Based Noisy Image Segmentation of MRI/CT Scan Brain Tumor Images Using Different Distance Metrics as Similarity Measure"

Jyotsna Rathee, Prabhjot Kaur, Ajmer Singh

SN Computers, Vol. 5, pp 1-25, ISSN: 2661-8907. SCOPUS

10. "Recent Trends on Data Flow Testing: A Review"

Preeti Rathee et al.

Journal of Information and Optimization Sciences, 45:4, 1189-1197, 2024

Journals



11. "Advancing Brain MRI Segmentation using Segment Anything Model"

P. Kaur et al.

RTIP2R 2024, 19–20 December 2024, Bhopal, India, Procedia Computer Science, Elsevier

12. "Utilizing Quantum Enhanced Dynamic Clustering for Optimized Path Selection in WBAN Featuring Optical Biosensors Technology"

P. Sharma, K. S. Saini, P. K. Sidhu

Proceedings of Engineering Science (PES), Vol. 6, No. 4, pp. 1929–1946, ISSN: 2620–2832. SCOPUS

13. "Air Pulse – An Air Quality Status Analysis Model"

Prabhjot Kaur Sidhu, Kavya Jain, Inika

International Research Journal of Scientific Studies, Vol. 1, No. 3, pp. 1–7. Google Scholar

14. "SENSE: Software Effort Estimation Using Novel Stacking Ensemble Learning"

Anupama Kaushik et al.

Innovations in Systems and Software Engineering

15. "Advanced Epileptic Seizure Detection Using Deep Learning and Bayesian Optimization"

Yadav Amita, Kumar Parveen et al.

SN Computers Journal, Volume 5, Article 854, (2024). Scopus

16. "A Novel Method for Prediction and Analysis of COVID-19 Transmission Using Machine Learning-Based Time Series Models"

Mann, Suman, Deepshikha Yadav, Suresh Muthusamy, Dhruv Rathee, Om Prava Mishra

Wireless Personal Communications 133, No. 3, 1935–1961. SCIE

17. "Customer Retention Modeling Over the OTT Platform Using Machine Learning"

Singh, U., Singh, S., Rathee, T., & Vaish, M.

Indian Journal of Science and Technology, 17(42), 4365–4371, 2024

18. "FL-XGBTC: Federated Learning Inspired with XG-Boost Tuned Classifier for YouTube Spam Content Detection"

Sharma, V., Sinha, A., Alkhayyat, A. et al.

International Journal of System Assurance Engineering and Management, 2024

19. "Enhancing Real-Time Object Detection for Autonomous Driving Using YOLO-NAS Algorithm with CLEO Optimizer"

Nandal, P., Pahal, Sunesh Malik, S. et al.

International Journal of Information Technology (2024)

20. "Leveraging AdaBoost and CatBoost to Classify the Likelihood of Brain Stroke"

Nandal, P., S. Malik

Journal of Scientific Research 16.3 (2024): 637–646

21. "CNN-Enabled Detection System for Agricultural Anomaly Anticipation"

Sandeep Kumar, Vikrant, Amit Sharma, Sangeeta, Sitender

Proceedings on Engineering Sciences, Vol. 6, No. 4, pp. 1947–1956, 2024

Conferences



1. P. Sharma, K. S. Saini, P. K. Sidhu, "Lightweight, Secure, and Authenticated Blockchain-Optimized Network Routing Protocol for WBANs," 2nd WCONF, India, July 12-14, 2024.

2. J. Rathee, P. Kaur, A. Singh, "Noisy Digital Image Segmentation via Clustering," 2nd ICAIA, MSIT, Delhi, March 19-20, 2024 (Springer Indexed).

3. T. Sharma, P. Dalal, "Anomaly Detection in WSNs: Performance Metrics & Model Accuracy," ICDC, Nov. 29-30, 2024.

4. T. Sharma et al., "ML-Based Energy Optimization & Anomaly Detection for Heterogeneous WSNs," 2nd ICAIA, MSIT, March 19-20, 2024.

5. P. Dalal, T. Sharma, "Peer-to-Peer File Storage Using Blockchain & IPFS," National Conf. on "Kartavya Kaal," May 15, 2024.

6. J. Arora, "Emotional Intelligence & Semantic Analysis in Voice Assistants for Elderly Well-being," NCRTCES, Nov. 11-12, 2024.

7. M. Siwach, "AI-Based Student Visual Engagement in Virtual Learning," NCRTCES, Nov. 11-12, 2024.

8. M. Siwach, "Automated Attendance System Using AWS Rekognition," NCRTCES, Nov. 11-12, 2024.

9. A. Kumari, "Analytical Analysis of Clustering in Ad Hoc Networks: A Systematic Review," ICAN, Sep. 24-25, 2024.

10. P. Dalal, "Overview of Metaheuristic Algorithms for Optimization," NCRTCES, Nov. 11-12, 2024.

11. A. Kaushik, S. Malik, "DeVote: Blockchain-Based E-Voting with Voter Anonymity," NCRTCES, Nov. 11-12, 2024.

12. S. Malik et al., "ML & Memory Forensics for IoT-Enabled Energy System Cybersecurity," NCRTCES, Nov. 11-12, 2024.

13. D. Yadav, "Mathematical Model on Global Warming & Polar Bear Survival," NCRTCES, Nov. 11-12, 2024.

14. D. Yadav, "Green Finance & Renewable Energy Investments: Tech for Sustainability," NCRTCES, Nov. 11-12, 2024.

15. D. Yadav, "Wireless Channel Performance Improvement via ANFIS," NCRTCES, Nov. 11-12, 2024.

16. D. Yadav, "Survey on Green Data Centers: A Comprehensive Review," NCRTCES, Nov. 11-12, 2024.

17. D. Yadav, "Road Condition Monitoring System," NCRTCES, Nov. 11-12, 2024.

18. S. Khanum, "Multimodal Digital Accessibility for Disabilities (Voice, Hand, Eye Control)," NCRTCES, Nov. 11-12, 2024.

19. R. Dwivedi et al., "Deep Learning-Based Deblurring for Optical Medical Imaging," NCRTCES, 2024.



Patents Published



1. Dr. Prabhjot Kaur Sidhu, Dr. Anupama Kaushik et al., "ARTIFICIAL INTELLIGENCE BASED BRAIN TUMOR DETECTION DEVICE" (Design Patent filed on 26/08/2024 & Published on 4/10/2024, Application No: 428202-001)

2. Dr. Jyoti Khurana, Dr. Tripti Sharma et.al "UNIFIED EXAMINATION KIOSK FOR SECURE COMPUTER-BASED ASSESSMENT. filed on 22/09/2024 & Published on 11/10/2024, Application No. 2209240002517)

BOOKS PUBLISHED



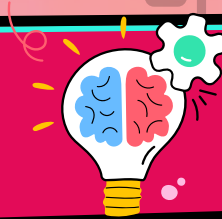
1. T. Sharma and P. Dalal, Sustainable IoT: Green Technologies and Applications. Alpha Int. Publ. (AIP), ISBN: 978-93-5762-975-1.
2. S. Khanum and T. Rathee, Principles management for Engineers, I I P Iterative International Publishers, ISBN-978-9362520838.
3. Dr. Minakshi Tomer, "Fundamentals of Programming with Python", Notion Press, ISBN979889186727.

BOOK CHAPTERS



Sonika Malik, Preeti Rathee, "Enhancing Wireless Communication in Education through a Novel Text-to-image Generation System", Wireless Communication Networks and Applications, IIP Series, Volume 3, May, 2024, Page no.169-179, e-ISBN: 978-93-6252-188-0, DOI/Link: <https://www.doi.org/10.58532/nbennurch77>

PROJECTS UNDERTAKEN



Dr. Deepshikha Yadav has set-up ONGC sponsored Centre of Excellence (CoE) Lab (based on Internet of Things (IoT), Artificial Intelligence (AI) and Machine Learning (ML))

FACULTY ACHIEVEMENTS



1. Prof. Tripti Sharma received the Research Excellence Award on 5th July 2024 by IGDTUW, New Delhi.

2. Prof. Tripti Sharma received the International Teaching Excellence Award in October 2024 by the International Institute of Organized Research(I2OR).

3. Prof. Tripti Sharma delivered an expert talk on "Parsing in Compiler Design" on October 5, 2024, in Seminar Hall No. 206 at MSIT.

4. Prof. Tripti Sharma delivered an Expert talk on Artificial Intelligence at the Institute of Innovation at Technology and Management, New Delhi on 16th August 2024.

5. Prof. Prabhjot Kaur received AD Scientific ranking award for the year 2024 in World Scientist and University Ranking 2025.

6. Prof. Prabhjot Kaur delivered an Expert Lecture for faculty on the topic "Latex for Beginners" on 26th October, 2024 in the Seminar Hall 206 of MSIT.

7. Prof. Prabhjot Kaur is working as an Guest Editor of a SCOPUS indexed journal "Proceedings of Engineering Sciences" for a special issue "Recent Developments and Applications of Fuzzy set extensions".

8. Dr. Anupama Kaushik was the Co-Session Chair in the National Conference on Recent Trends in Climate Change, Energy and Sustainability held at MSIT on 11-12 November, 2024.

9. Dr. Anupama Kaushik was an organising Committee Member (Technical Review Committee) in the National Conference on Recent Trends in Climate Change, Energy and Sustainability held at MSIT on 11-12 November, 2024.

10. Dr. Sonika Malik Delivered an Expert Lecture on the National Board of Accreditation to 2nd-year students on 30 August 2024. 11. Dr. Sonika Malik received an appreciation letter to conduct an Alumni meet on 26th October 2024.

11. Dr. Sonika Malik received an appreciation letter to conduct an Alumni meet on 26th October 2024.

12. Dr. Jyoti Khurana was an organising Committee Member (Technical Review Committee) in the National Conference on Recent Trends in Climate Change, Energy and Sustainability held at MSIT on 11-12 November, 2024.

13. Dr. Jyoti Khurana received the best paper award for the paper presented, "Leveraging Emotional Intelligence and Semantic Analysis in Voice Assistants to Foster Elderly Wellbeing." NCRTCES, 11th -12th Nov 2024.

14. Dr. Jyoti Khurana delivered an Expert Lecture on the GGSIPU Academic Scheme for B.Tech. students on 23rd August 2024.

15. Dr. Jyoti Khurana served as Co-Session Chair at the National Conference on Recent Trends in Climate Change, Energy, and Sustainability (NCRTCES), MSIT, held on 11-12 November 2024.

16. Mr. Parveen Kumar received an appreciation letter for his role in organizing NCRTCES, MSIT (11-12 November 2024).

17. Dr. Deepshikha Yadav secured a grant of Rs. 3,40,000/- from the Ministry of Earth Sciences (MoES) for hosting NCRTCES, MSIT (11-12 November 2024).

18. Dr. Deepshikha Yadav contributed as Co-Convenor, Co-Session Chair, and Technical Review Committee Member at NCRTCES, MSIT (11-12 November 2024).

19. Dr. Deepshikha Yadav received Best Paper Awards for:

- o "Mathematical Model for Estimating a Relation Between Global Warming and Polar Bear Survival."
- o "Green Finance and Renewable Energy Investments: Leveraging Technology for Sustainability."
- o "Survey on Green Data Centers: A Comprehensive Review."

20. Dr. Deepshikha Yadav delivered an Expert Lecture on the National Board of Accreditation to 3rd-year students on 5th September 2024.

21. Mr. Surender Singh was recognized with an appreciation letter for his contributions to organizing NCRTCES, MSIT (11-12 November 2024).

22. Mr. Akshay Singh received an appreciation letter for his role in organizing NCRTCES, MSIT (11-12 November 2024).

STUDENTS ACHIEVEMENTS



1. Rahul Verma (2022-26) awarded with the certificate of EMC BUSINESS BLASTER PENALTIES CERTIFICATE on 10 Oct, 2024 & also got an opportunity to win Business Blaster Coach - Govt. of Delhi opportunity on 9th Nov, 2024.

2. Mohit Arora (2022-26) won IIC Ideathon held in MSIT on 9th Nov 2024, he was Mentor in BPIT HackHazard hackathon held on 12th Nov, 2024, also got 3rd position in "Ecell DTU hackathon" which was held on 11 Dec, 2024. He is finalist of SIH 2024.

3. Aditya Bhaskar (2022-26) achieved Best Paper Award in National Conference NCRTCES in MSIT held on 12/11/2024.

4. Vivek (2022-26) awarded with the World Rank 350 CodeChefStarters 164 certificate and won Competitive Programming aka Shaastra Programming Contest, is sponsored by KLA held on 12/11/24

5. Gautam Sachdeva (2022-26) was Finalist of "SIH 2024".

6. Pratham Batra (2022-26) got 2nd position in BPIT Hackathon held on 29-30 Nov, 2024 and also got 1st @ BVCOE Project exhibition held on 25th Nov 2024.

7. Ayush Kumar, Khushi Seharawat, Preeti Singh, Krish Arya, Damanpreet Singh students of batch (2023-27) were awarded with the Best Paper Award in National Conference NCRTCES in MSIT held on 12/11/24.



FDPs ATTENDED:

1. Prof. Tripti Sharma, Dr. Anupama Kaushik, Dr. Deepshikha Yadav, Ms. Nidhi Goel, Dr. Priya Dalal, Ms. Ashish Kumari, Ms. Meena Siwach, Jyoti Khurana, Dr. Sonika Malik, Mr. Surender Singh and Mr. Akshay Singh have attended one week FDP on "Modeling and Simulation using MATLAB" organized by NITTTR at MSIT, New Delhi from 16-12-2024 to 20-12-2024.

2. Prof. Tripti Sharma, Ms. Nidhi Goel, Dr. Priya Dalal, Ms. Manju, Ms. Meena Siwach, Ms. Ashish Kumari, Dr. Jyoti Khurana, Mr. Parveen Kumar, Mr. Surender Singh and Mr. Akshay Singh have attended one week FDP on "Developing Healthy Work Culture at Workplace" organized by NITTTR at MSIT, New Delhi from 02-12-2024 to 06-12-2024.

3. Prof. Prabhjot Kaur, Dr. Anupama Kaushik, Ms. Nidhi Goel, Ms. Astha Solanki, Ms. Manju, Ms. Ashish Kumari, Ms. Meena Siwach, Jyoti Khurana, Dr. Sonika Malik, Mr. Surender Singh and Mr. Akshay Singh have attended one week FDP on "Cross-Modality Innovation: Generative AI in Language, Image Intelligence and Medical Advancements" organized by ATAL Academy from 09-12-2024 to 14-12-2024.

4. Dr. Deepshikha Yadav completed 12 weeks NPTEL-AICTE FDP on Entrepreneurship in October 2024

EVENTS ORGANISED

Seminar on GGSIPU Academic Scheme for B.Tech. Programs (23/08/2024)

The IT department, led by Prof. Prabhjot Kaur (HoD), organized an exclusive seminar where Dr. Jyoti Khurana (Assistant Professor) delivered a lecture. GGSIPU has introduced a flexible, interdisciplinary academic scheme for B.Tech programs starting from 2021-22, aligning with the NEP 2020.



Seminar on GGSIPU Academic Scheme for B.Tech. Programs (23/08/2024)

On 23rd August 2024, a guest lecture titled "UNLOCKING DOORS TO TOP MASTERS PROGRAM" was organized by Mr. Akshay Singh and Ms. Mamta Gahlan (Assistant Professors, IT Department) in collaboration with IMS Learning Resources Pvt. Ltd. It offered an overview of opportunities and challenges in pursuing education at international institutions, beginning with a discussion on global academic programs and universities.



Seminar on National Board of Accreditation (30/08/2024)

On 30th August 2024, the IT Department at Maharaja Surajmal Institute of Technology hosted a seminar on the National Board of Accreditation, led by Dr. Sonika Malik, Assistant Professor. Her insightful session covered the introduction, need, criticality, and international significance of the NBA, emphasizing its benefits and relevance from a student perspective.



Seminar on National Board of Accreditation (05/09/2024)

On 5th September 2024, the IT Department at Maharaja Surajmal Institute of Technology held a seminar on the National Board of Accreditation, led by Dr. Deepshikha Yadav, Assistant Professor. Her presentation covered the introduction, significance, and international relevance of the NBA, highlighting its benefits and advantages from a student perspective.



Expert Lecture on Latex for Beginners (26/10/2024)

An expert lecture on "LaTeX for Beginners" was organized as part of the Lecture Series by the professors of MSIT on October 26, 2024, in Room 206 from 8:30 to 9:30 AM. The session was delivered by Prof. Prabhjot Kaur, Head of the IT Department, and aimed at introducing participants to LaTeX, a powerful typesetting system widely used for academic and technical document preparation. The lecture covered basic syntax, document structuring, and formatting techniques, helping attendees understand how to create professional-looking reports, research papers, and presentations efficiently. The session concluded with an interactive Q&A discussion.



Workshop on IoT and Embedded Projects (19/09/2024)

The IoT and Embedded Projects Workshop, held on 19th September 2024 at Lab #111 from 10 AM to 12 PM, was organized by Mr. Akshay Singh and Ms. Mamta Gahlan (Assistant Professors, IT Department) and led by Mr. Devansh Raghav, CTO of JKSD InfoTech Pvt. Ltd. It focused on providing practical knowledge and insights into IoT and embedded systems, highlighting their significance in industries like healthcare, agriculture, smart cities, and manufacturing.



Seminar on Basics of AI (23/09/2024)

An exclusive and informative seminar was organized by Geek room MSIT and IT department for IT students to educate them about AI and its basics. The lecture was delivered by Mayank Shukla (2nd year btech , deputy head of AI/ML department of Geekroom) and Khushleen Kaur (2nd year btech , deputy head of AI/ML department of Geekroom) on topic "BASICS OF AI".



Expert Lecture on Parsing in Compiler Design (05/10/2024)

An expert lecture on the topic "Parsing in Compiler Design" is organized as a part of Lecture series by the professors of MSIT on 5th Oct., 2024 in 206 from 8.30 to 9.30 am. The speaker of the expert lecture was Prof. Tripti Sharma.



Industrial Visit to Ducat, Pitampura (21/10/2024)

On 21st October 2024, IT Department students from the 3rd and 5th semesters, guided by Assistant Professors Mr. Parveen Kumar and Dr. Preeti Sehrawat, visited DUCAT, Pitampura. The visit provided 52 students with insights into data science, machine learning, AI, and emerging technologies, offering an inspiring understanding of their role in shaping a tech-driven future.



Webinar on Resume Writing (25/10/2024)

The "Resume Writing" webinar, conducted by Mr. Parveen Kumar and Ms. Meena Siwach (Assistant Professors, IT Department) and led by Mr. Amit Podder (Senior Regional Head, T.I.M.E), provided valuable insights into crafting compelling resumes. It covered essential aspects such as formatting, content structuring, and optimization for applicant tracking systems (ATS), along with tips on tailoring resumes for specific job roles. The session also highlighted common mistakes and best practices to enhance professional appeal. An interactive Q&A session allowed participants to seek expert advice on addressing employment gaps, showcasing skills effectively, and improving LinkedIn profiles, equipping them with strategies to create impactful resumes that boost their chances of securing interviews and career growth.



Industrial Visit to Atal Incubation Centre (AIC), GGSIPU (09/09/2024)

On 9th September 2024, 60 IT Department students from the 3rd and 5th semesters, guided by Assistant Professors Mr. Akshay Singh and Ms. Manju Dhull, visited the Atal Incubation Centre (AIC) at GGSIPU to gain insights into startups, entrepreneurship, and the incubation process. The session, conducted by AIC experts, introduced students to startup ecosystems, funding opportunities, and mentorship programs, followed by an interactive Q&A where they discussed business challenges and innovation strategies. A guided tour of the facility allowed students to witness real-world startup projects, helping them understand how ideas evolve into businesses. The visit provided practical exposure to entrepreneurship, bridging the gap between academic learning and industry practices. Students left with enhanced knowledge and inspiration, considering technology-driven and entrepreneurial career paths.



Patron:
Prof. Archana Balyan
(Director, MSIT)

Chief Editors:
Prof. Prabhjot Kaur &
Dr Sunesh Malik
(Head of Department, IT M & IT E)

Editors:
Mr Akshay Singh
(Assistant professor, IT)



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(BATCH 2023-2027 STUDENTS, IT)