TECHBYTE

NEWSLETTER

DEPARTMENT OF
INFORMATION TECHNOLOGY

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 accredited institution where all the departments are NBA accredited. It is ranked in 250-300 band by NIRF.

The Department of Information Technology is a team of 20 full time faculty members, 6 technical assistants and more than 800 undergraduate students. We have devoted ourselves to surmount all challenges to impart and inculcate the best principles, processes, and practices in learning, teaching and research work in IT.

Our journey of thousand miles has to begin with a first step, where we must put our best foot forward. In this direction, we have launched the first edition (Jan-Oct 2021) of our IT Department Newsletter, "TECHBYTE" It elucidates the events held in the Department and throws light upon the research work that is constantly being accomplished by the faculty members and students. It also documents the highlights of the greatly cherished guest lectures and sessions with renowned scholars and industrialists.

Research Publications

1. Prabhjot Kaur et al., "A Review on Data Level Approaches to Address the Class Imbalance Problem", Recent Challenges in Engineering Science and Technology, ISSN 978-93-90214-20-4, 2021.

2. Sakshi Hooda, Suman Mann, "Review on Predicting Disease Severity – Learning Algorithms as Classifiers for Data Warehouse Environments", Information Technology in Industry, Vol 9, no 1 2021.

3. Drishti Agarwal, Preeti Nagrath, Jyoti Arora, "Game Theory and its Applications in Cyber Security", Journal of Multidisciplinary Engineering Technologies, Vol 15, no. 1 2021.

4. Jyoti Arora, Muskan Mahajan, Mayank Grover, Smriti Rout, "Comparative Analysis of Generative Adversarial Network.", International Journal of Information, Communication and Computing Technology, Vol. IX, Issue-1, 2021.

5. Tripti Sharma, Anmol Ashri, Navin Kumar, Shubham Pal, Rajat "Evaluation of Python Text Summarization Libraries", International Journal of Engineering Development and Research, Vol 9, 2021.

6. Tripti Sharma, A.K. Mohapatra, Geetam Singh Tomar, "A review of soft computing based cluster-heads selection algorithms in wireless sensor networks", Materials Today Proceedings, Available online 28 March 2021.

7. Rumi Iqbal Doewes, Rajit Nair, Tripti Sharma, "Diagnosis of COVID-19 through blood sample using Ensemble Genetic Algorithms and Machine Learning Classifiers", World Journal of Engineering, Available online 1 July 2021.

8. Sonika Malik, Sarika Jain, "Sup_Ont: An Upper Ontology", International Journal of Web Based Learning and Teaching Technologies,ISSN 1548-1093, 2021.

9. Upadhay K., Kaur, P. and Prasad SVAV, "State of the Art on Data level methods to address Class Imbalance Problem in Binary Classification", GIS Science Journal, ISSN 1869-9391.

10. Sonika Malik, Sarika Jain "Semantic Ontology-Based Approach to Enhance Text Classification", International Semantic Conference, ISSN 1613-0073,2021.

11. Suyash Kumar, Prabhjot Kaur, Anjana Gosain, "Comparative Study of Bagging Ensemble and ARIMA model for prediction of Covid-19 in India", GCAIA2021, 8-10 September 2021, Tayler and Francis, CRC press.

12. Attia, M.E.H., Kaliyaperumal, S., Thangamuthu, G., Ilango Rengaraju, Suman Mann, Santhakumar Jayakumar, Suma Christal Mary Sundararajan, "Impact of water depth on thermal efficiency, exergy efficiency, and exergy losses of finned acrylic solar still: an experimental study", Environmental Science and Pollution Research, 2021.

13. Deepa Gupta, Shambhu Kumar Jha, Suman Mann, "Internet Crimes-It's Analysis and Prevention Approaches", IEEE 9th International conference on Reliability, infocom technologies and optimization (ICRITO-2021) Sep 2021.

14. M. Tomer and M. Kumar, "Multi-document extractive text summarization based on firefly algorithm", J. King Saud Univ. - Comput. Inf. Sci., 2021. SCI Indexed (IF:13) ISSN: 1319-1578.

15. T. Rathee and P. Singh, "A systematic literature mapping on secure identity management using blockchain technology", J. King Saud Univ. - Comput. Inf. Sci., 2021. SCI Indexed (IF:13) ISSN: 1319-1578.

16. T. Rathee and P. Singh, "Secure data sharing using Merkle hash digest based blockchain identity management", Peer Peer Netw. Appl., 2021 SCI Indexed (IF: 3.044) ISSN ISSN:1936-6450.

17. Sangeeta, Sitender, K. Sharma, and M. Bala, "New failure rate model for iterative software development life cycle process", Autom. Softw. Eng., vol. 28, no. 2, 2021. SCIE Indexed (IF: 1.59) ISSN 1573-7535.

18. Sitender and S. Bawa, "A Sanskrit-to-English machine translation using hybridization of direct and rule-based approach", Neural Comput. Appl., vol. 33, no. 7, pp. 2819–2838, 2021. SCIE Indexed (IF: 5.606) ISSN: 1433-3058.

19. S. Malik and R. K. Reddlapalli, "Neural network and pixel position shuffling-based digital image watermarking", Computational Methods and Data Engineering, Singapore: Springer Singapore, 2021, pp. 67–78.ISSN:2194-5357.

20. Manoj Malik, "Improved round robin algorithm under cloud computing", International Journal of Scientific Research in Engineering and Management, Vol.5, Issue-7, July 2021.

21. Bharti Sharma, "CCTV Footage Summarization", International Journal of New Innovations in Engineering and Technology, Vol.17, Issue-2, July 2021.

22. Bharti Sharma, "Benchmarking geospatial database on Kubernetes cluster", EURASIP Journal on Advances in Signal Processing, SCIE Journal, ISSN: 1687-6180, vol. 43, 2021.

23. Sitender, "A comprehensive survey on machine translation for English, Hindi and Sanskrit languages", Journal of Ambient Intelligence and Humanized Computing, SCI Journal, ISSN: 1868-5137, September 2021.

24. Sitender, "New failure rate model for iterative software development life cycle process", Automated Software Engineering, SCI Journal, ISSN: 1573-7535, June 2021.

25. Tripti Rathee, "A Self-Sovereign Identity Management System using Blockchain", Cyber Security and Digital Forensics: Proceedings of ICCSDF 2021.

26. J. Khurana, A.Ashri, "COVID-19 India Outbreak Trend Analysis and Predictions using Multi Time Series Models", International Journal of Computer Applications (0975 – 8887), Volume 174 – No. 22, February 2021.

27. J. Khurana, V. Aggarwal, H. Singh, "A Comparative Study of Deep Learning Models for Network Intrusion Detection", International Journal of Computer Applications (0975 – 8887), Volume 174 – No. 23, March 2021.

Patents Published

1. Dr. Prabhjot Kaur, Mr. Ronish Singh, Dr. Anupama Kaushik, Dr. Puneet Azad, Dr. Kavita Sheoron, Dr. Kamaljit Singh, Dr. K. P. Chaudhary, "IOT based Smart Complaint Box", published on 22 Jan, 2021 with application no 202111001925.

2. Dr. Naresh Kumar, Dr. Adeel Hashmi, Dr. Neeru Rathee, Dr. Sudesh Pahal, Dr. Prabhjot Kaur Sidhu, Dr. Jyoti Yadav, "Point to Point Regression Analysis-Based Big Data Processing using Machine Learning", published on 21 May, 2021 with application no. 202111017897.

3. Dr. Tripti Sharma et al., "Development of Renewable Solar PV inverter with Grid Tie for Utility Power based on IOT", published on 5 March, 2021 with application no. 202121008396.

4. Prof. Poonam Bansal, Prof. Meena Tushir, Ms. Shefali Dhingra, Ms. Sonia Goel, Ms. Jyoti Arora, Ms. Pooja Kherwa, "Web application based Intelligent & Secured Image Retrieval Model", published on 5 March, 2021 with application no. 202111008414.

5. Dr. Suman Mann, Dr. Archana Balyan, Deepshikha, Ms. Meena Siwach, Shivam, Sparsh, "Wi-Fi based home automation system using Google assistance", published on 26 Feb, 2021 with application no. 202111007809.

6. Dr. Suman Mann et al., "Areca leaf Shredding machine", published on 5 March, 2021 with application no. 202141007807.

7. Dr. Tripti Sharma, Dr. Rinky Dwivedi, Dr. Koyel Datta Gupta, Dr. Rekha Tripathi, Dr. Archana Balyan, Dr. Meena Rao, "Method for authenticating and validating quick response code", published on 9 April,2021 with application no. 202121010704 A.

8. Dr. Suresh Kumar, Dr. S.Prasath, Dr. Sanjay, Dr. Bharti Sharma, Dr. Tripti Sharma, Ms. Gunjan, Jnamenjay J. Chitade,Praveen Math, Mrs.G.Neelima, Dr. V.LakshmiPrasanna, "IOT based Autonomous Post Pandemic Health Care Monitoring System", published on 12 Feb, 2021 with application no. 202131006190.

9. Ms. Tripti Rathee, Dr. Parvinder Singh, "A Block Chain-based System For Personal Data Verification", published on 27 July, 2021 with application no. 2021103403.

10. Dr. Bharti Sharma et al., "Development of AI Based intelligence based traffic management system for emergency vehicles", published on 5 Feb, 2021 with application no. 202141004191.

11. Dr. Sangeeta and Dr. Sitender, "System and Method for estimating reliability of software developed under latest software development lifecycle", published on 5 March, 2021 with application no. 202111008557.

12. Dr. Sangeeta, Dr. Sitender et al., "IOT based smart voting system for pandemic spread mitigation", published on 26 Feb, 2021 with application no. 202141006912.

13. Ms. Saba Khanum et al., "Decentralized Blockchain based Multi-chain data synchronization for IOT smart manufacturing", published on 21 May, 2021 with application no. 202121020458.

14. Ms.Tripti Rathee et al., "A Block Chain-based System For Personal Data Verification", published on 27 July, 2021 with application no. 2021103403.

15. Dr. Prabhjot Kaur, Dr. Anupama Kaushik, Mr. Surender Singh, Ms. Sonika Malik, Ms. Preeti Rathee et al., "Method for Translating Sign Language using Convolutional Neural Networks", published on 15 Sept, 2021 with application no. 202111041578.

16. Dr. Prabhjot Kaur, Dr. Anupama Kaushik et al., "Iot Based Smart Shoes For Child Health Monitoring", published on 26 March, 2021 with application no. 202111011966.

17. Dr. Prabhjot Kaur, Dr. Anupama Kaushik et al., "Method And Electronic Device For Monitoring User In Work Site", published on 26 March, 2021 with application no. 202111011965.

18. Dr. Prabhjot Kaur, Dr. Anupama Kaushik et al., "Method And Electronic Device For Personalizing User Activity In Virtual", published on 26 March, 2021 wih application no. 202111011967.

19. Dr. Prabhjot Kaur, Dr. Anupama Kaushik et al., "An Edge Computing Based Automation System For Dental Services", published on 18 June, 2021 with application no. 202111024736.

20. Ms. Ashish Kumari et. al., "Reduce, Re-Cycle and Reuse (RRR) IoT Intelligence Waste Management System", published on 15 Jan, 2021 with application no. 202111001043.

Book Chapters Published

1. Anupama Kaushik, "Role of ANN in Functionality and Designing of Solar Photovoltaic Cell: A Review", Recent Advances in Mechanical Engineering RAME2020,1SBN: 978-981-15-9678-0, Springer, 2021.

2. Suman Mann, Deepa Gupta, Yukti Arora, Shivanka Priyanka Chugh, Akash Gupta, "Smart Hospitals Using Artificial Intelligence and Internet of Things for COVID-19 Pandemic", Smart Healthcare Monitoring Using IoT with 5G Challenges, Directions, and Future Predictions, CRC Press, 2021.

3. Jyoti Arora and Meena Tushir, "Digital Twin: Towards Internet of Drones", Digital Twin Technology, CRC Press, 2021.

4. Sharma P., Kaur P., Saini K., "Secure Protocols for Biomedical Smart Devices", Kumar, Singh, Saini (eds) Cybersecurity: Ambient Technologies, IoT, and Industry Implications, Tayler and Francis, ISBN 9781003145042, CRC Press.

Faculty members of IT Department have attended various Faculty Development Programs (FDPs) for the year 2021 conducted by AICTE, NITTTR, UGC & other reputed institutes.

A seminar was organised by IT Department (2nd Shift) on Research, Innovation & Ranking : A Part Of New Education Policy 2021 on 9th Aug 2021.

A seminar was organised by IT Department (1st Shift) on Use of Technology in Education : A Part of New Education Policy 2021 on 10th Aug 2021.

Dr. Sitender & Dr. Sangeeta published a book titled "Practices toward Future Software Reliability Growth Model Evolution" AKN Learning Publications (International), ISBN: 978-8194217183, 2021
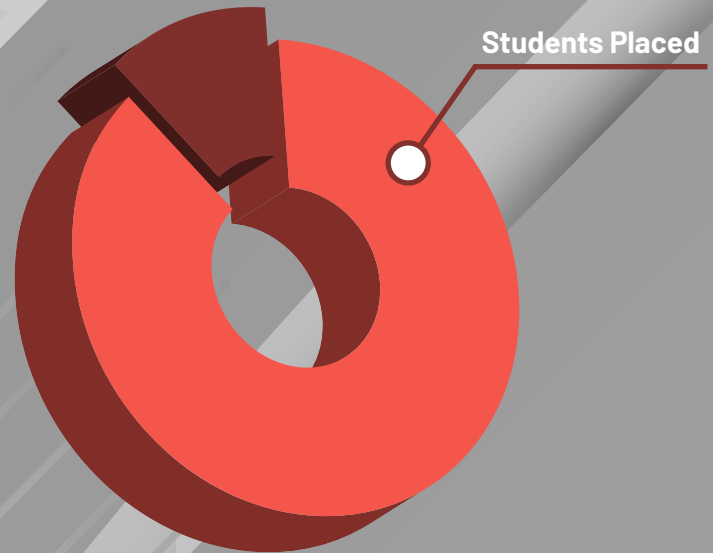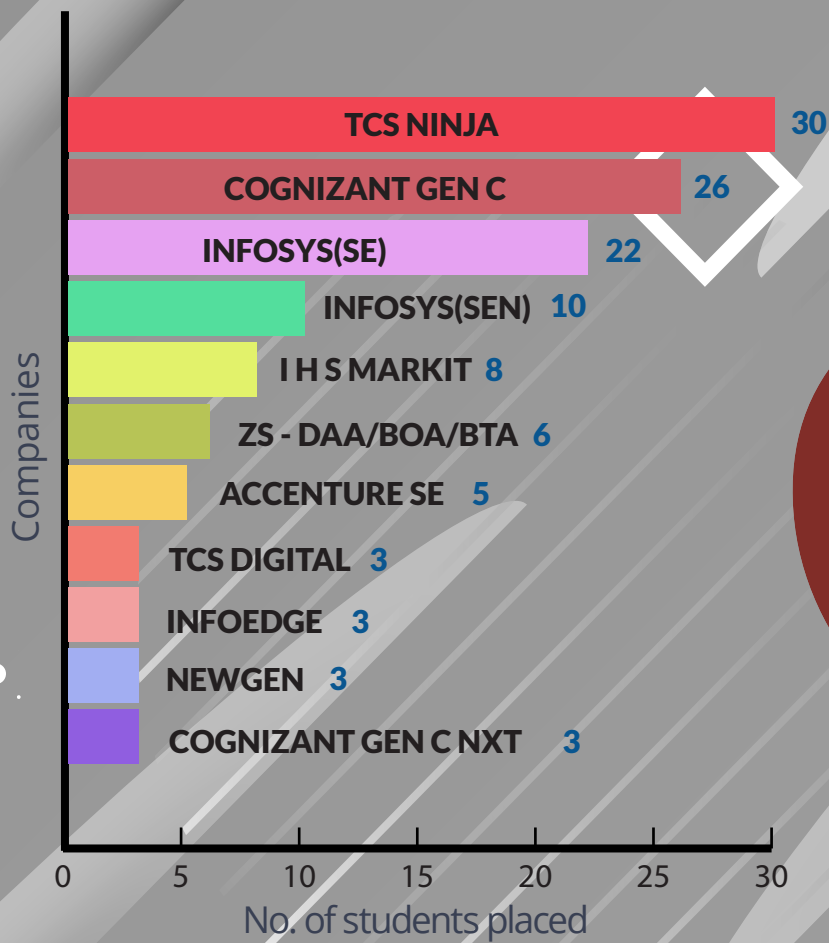
Harsh S Malkani & Prinshu Dahiya (B.Tech IT Student) registered a Copyright titled "Timeout Parallelization - Software (Algorithm)"

Harsh S Malkani & Prinshu Dahiya (B.Tech IT Student) filed a Patent titled "System and Method for Execution Time Optimization"

Projects Undertaken

Faculty Name	Title of Project	Sponsoring Agency/ Sanctioned Amount	Duration/Status
Mr. Surender Singh (Co-coordinator)	MODROB-2020(Up-gra-dation of Soft computing / Multimedia lab.)	AICTE / Rs 10,33,000/-	2 years / Completed (March, 2021)
Dr. Prabhjot Kaur (Co- ordinator)	IOT: A Practical Approach(ATAL FDP)	AICTE / RS 93,000/-	1 Week (6th to 10th Dec 2021)

Student Achievements

Company	No. of students placed
TCS NINJA	30
COGNIZANT GEN C	26
INFOSYS(SE)	22
INFOSYS(SEN)	10
I H S MARKIT	8
ZS - DAA/BOA/BTA	6
ACCENTURE SE	5
TCS DIGITAL	3
INFOEDGE	3
NEWGEN	3
COGNIZANT GEN C NXT	3

Companies

No. of students placed

0   5   10   15   20   25   30

Students Placed

176/200 STUDENTS GOT PLACED (BATCH 2021) !

Star Performers

PREETI BIDHAN
Full time offers from **Microsoft, Amazon & Nasdaq**
6 Month Internship offers from
Paypal & Bank of New York Mellon
Batch: 2017-21
Branch: IT - Morning
Company: Microsoft
Package: 42 LPA CTC
Profile: Software Engineer

YASH PREET
Full time offers from **Microsoft, Cognizant, Infosys & TCS**
6 Month Internship offers from
Amazon & ShareChat
Batch: 2017-21
Branch: IT - Morning
Company: Microsoft
Package: 42 LPA CTC
Profile: Software Engineer

Scholarships

TANAY AGGARWAL
3RD YEAR IT STUDENT

- Designated by GNCT of Delhi and The Japan Science and Technology Agency, as a delegate to Fukuoka, Japan for research & development.
- Accepted as a delegate by The Harvard Project for Asian and International Relations for Harvard College Conference 2021.
- Developed plasma donation app in collaboration with AIIMS, New Delhi.
- Currently he's serving his research visiting period at The Open University, Milton Keynes, England working as data-science research intern.
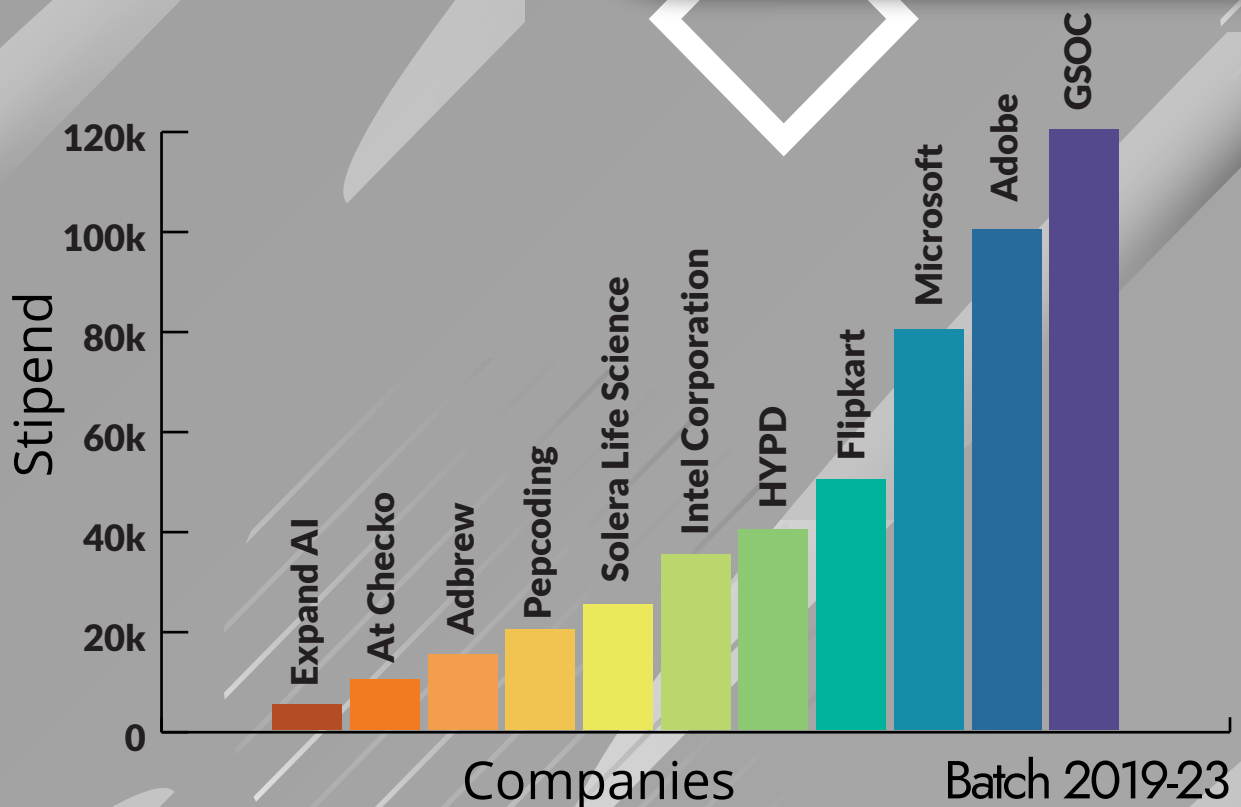- Today he leads (as founder and CEO) MyDevClub's (an infotech startup).

MONALIKA KAPOOR
3RD YEAR IT STUDENT

- Selected as the Generation Google Scholarship APAC Recipient'21 (One of the 70 scholars selected across 16 countries of the APAC region).
- Selected as Nutanix Women In Technology Scholarship Recipient'21 (One of the 12 girls selected from the US, France, Netherland, India & Serbia).
- Selected as Grace Hopper Celebration Scholar 2021.

HARSHITA CHOPRA
4TH YEAR IT STUDENT

- Bagged summer internship offers from United Health Group and Adobe.
- Worked as a Research Intern at Adobe for three months during the summer of 2021, in the field of Machine Learning.
- Won the student Scholarship to attend the 2021 Grace Hopper Celebration as a GHC Scholar.

Internships

Bar chart — X axis: Companies (Expand AI, At Checko, Adbrew, Pepcoding, Solera Life Science, Intel Corporation, HYPD, Flipkart, Microsoft, Adobe, GSOC); Y axis: Stipend (0 to 120k). Batch 2019-23

Penultimate year students acquired internships with stipend ranging from Rs. 5K to 120K per month

Faculty Achievements

Dr. Prabhjot Kaur

Associate Professor, IT Department

Ranked Among the Top 2% Researchers in the world by the **Stanford University Global Ranking**

1 Dr. Anupama Kaushik, Associate Professor, Department of IT, received Outstanding Branch Counsellor Award on 4th July, 2021.

Dr. Prabhjot Kaur was awarded Best Researcher of the Year 2021 by CEGR (Center of Education Growth and Research) for outstanding and exemplary contribution towards education, skill development and Research. **2**

3 Dr. Suman Mann was invited as a keynote speaker in the 9th International conference on Reliability, Infocom Technologies and Optimization (ICRITO-2021) in Amity University, Noida on 3rd Sept, 2021.

Dr. Prabhjot Kaur delivered Expert Lecture on "Role of IoT in Medical Sector" in 5 days Online FDP "IOT innovations and Implications for IT environment" organized by Amity University, Noida from 23rd – 27th August, 2021. **4**

Events Organized

FDP on "Recent Advancements & Challenges in IT"

Participants- 72
Dated: March 8th - March 12th, 2021

The objective of this FDP was to foster the level of technical teaching and research aptitude of the young faculty members, either doing research or planning to undertake research work under the domain of Computer Science and IT.

Webinar on "Journey of Cracking Top Giant Companies"

Participants- 87
Dated: June 12th, 2021

The webinar focused on preparation journey for the interviews. The speakers shared their experiences from how they came to know about programming, participating in online coding contests, solving questions & how to face difficulties in various interview rounds for different companies.

Webinar on "The Power of Positive Thinking"

Participants- 64
Dated: June 13th, 2021

We provided our students an opportunity to teach about "The Power of Positive Thinking". BK Kamala Ji discussed the essence and cosmic definition of "MANN KI SHAKTI," the Centre of our forehead, the Centre of all our thoughts.

Webinar on "Roadmap to Big Tech Companies"

Participants- 161
Dated: June 19th, 2021

The speakers emphasized on learning data structures and algorithms and practicing on platforms like CodeChef and CodeForces. They shared their overall experiences and tried to cover the doubts of each attendee.

Webinar on "Time Management"

Participants- 98
Dated: Oct 13th, 2021

A seminar was organized by the Times Management group online for IT 5th and 3rd semester students. The students got to know about how they can manage the time effectively. They also explained why proper sleep is necessary for being productive in our daily life.

Gallery Of
Events

PLANTATION DRIVE

RAUNAKH

S P O R T I F Y

DEPARTMENT OF INFORMATION TECHNOLOGY

IIIrd FLOOR

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