



October-December 2022

CLAIRVOYANCE

E-NEWSLETTER OF IT DEPARTMENT

MADHAV INSTITUTE OF TECHNOLOGY
& SCIENCE, GWALIOR

Editorial Board Contents

- Dr. Akhilesh Tiwari,
Prof. & Head of Department
- Dr. Saumil Maheshwari
- Dr. Ashish Soni

Students

- Sakshi Talreja (0901IT191052)

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Award/Prize/ Recognition by Faculty Members

- **Dr. Tej Singh**, served as Session Chair in the IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation – IATMSI-2022 (21-23 Dec. 2022), at ABV-IIITM Gwalior, Madhya Pradesh, India.
- **Dr. Tej Singh**, is recognized as ‘NPTEL BELIEVER’ for July to Decemeber 2022, from NPTEL Cooridantor IIT Madras, India.
- **Dr. Saumil Maheshwari**, served as Session Chair in the IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation – IATMSI-2022 (21-23 Dec. 2022), at ABV-IIITM Gwalior, Madhya Pradesh, India.

Publications SCI/UGC/SCOPUS with DOI number

- **Rahul Dubey, Vikram Rajpoot, Ankur Chaturvedi, Abhishek Dixit ,Saumil Maheshwari** Ball-Bearing Fault Classification Using Comparative Analysis of Wavelet Coefficient based on Entropy Measurement IETE Journal of Research <https://doi.org/10.1080/03772063.2022.2142685>
- **Bhagat Singh Raghuwanshi**. "Class-specific extreme learning machine based on overall distribution for addressing binary imbalance problem. Soft computing. doi.org/10.1007/s00500-022-07705-5

PhD awarded

- **Mr. Abhishek Dixit** has been declared eligible for the award of the degree of Doctor of Philosophy (Ph.D.) in Computer Science & Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal.
- **Mr. Punit K. Johari** has been declared eligible for the award of the degree of Doctor of Philosophy (Ph.D.) in Information Technology from Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal.

FDP/STC Attended (Outside the institute)

- **Dr. Tej Singh** has participated in NAAC Sponsored Two Days Online National Workshop on “Curriculum Development for the Effective Implementation of NEP-2020”, under IQAC conducted during September 03-04, 2022 at Madhav Institute of Technology & Science, Gwalior, MP, India.
- **Dr. Vikram Rajpoot** attended an online one week Faculty Enablement Program(FEP) on Java Programming using Infosys Springboard platform from Nov 2nd - Nov 9th 2022.
- **Dr. Abhishek Dixit** has participated in NAAC Sponsored Two Days Online National Workshop on “Curriculum Development for the Effective Implementation of NEP-2020”, under IQAC conducted during September 03-04, 2022 at Madhav Institute of Technology & Science, Gwalior, MP, India.
- **Dr. Dhananjay Bisen** attended an online one-week Faculty Enablement Program(FEP) on Python Programming under Infosys Springboard platform from 17th oct to 21st oct 2022.
- **Dr. Bhagat Singh** Raghuwansi attended an online one-week Faculty Enablement Program(FEP) on Introduction to Artificial Intelligence under Infosys Springboard platform from 14 Nov to 18 Nov 2022.

Patent filed

- **Rahul Dubey , Dheraj K Agrawal, Dr. Vivek Tiwari, Dr. Vikram Rajpoot,Ritu Shukla** SMART NECKLACE AND WRIST BAND WITH MACHINE LEARNING BASED IMAGE PROCESSING AND GPS Indian Patent Granted with Patent Number 412649 and Grant Date 28/11/2022

NPTEL/ATAL/COURSERA/INTERNSHALA course attended by the faculty

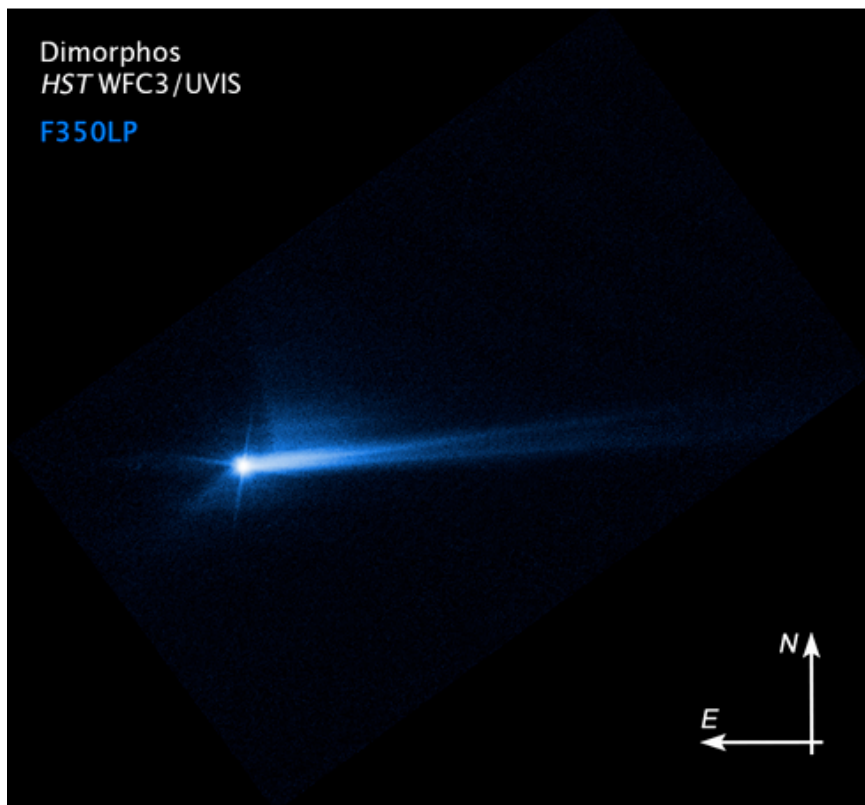
- **Dr. Tej Singh** , has successfully completing the Swayam NPTEL courses on the subjects: Data Science with Python (Elite+Silver), Accreditation And Outcome Based Learning (Elite), Digital Circuits (Elite) and Embedded System Design With ARM (Elite).
- **Abhilash Sonker** has NPTEL Online Certification for successfully completing the course “ Cryptography and Network Security ” July-Oct 2022.
- **Dr. Vikram Rajpoot** has NPTEL Online Certification for successfully completing the course “ Theory of Computation ” July-Oct 2022.
- **Dr. Dhananjay Bisen** has successfully completed Python Foundation Certification under Infosys Springboard platform.
- **Dr. Bhagat Singh Raghuwansi** has successfully completed Artificial Intelligence Premier Certification under Infosys Springboard platform.anks for the mail.

Latest Technologies

Movies comes to Reality

Most of you've watched Armageddon or Deep Impact or some other movie about an asteroid threatening to wipe out life on Earth, relax. NASA this year proved with its Double Asteroid Redirection Test (DART) mission that it has the ability to deflect a giant space rock off a collision course with our planet. NASA sent the 1,100-pound DART spacecraft slamming into a 525-foot-diameter asteroid, Dimorphos, at 14,000 miles per hour to see whether the impact force would be enough to change its trajectory.

Dimorphos, which didn't actually threaten Earth, was orbiting around a larger parent asteroid, Didymos, every 11 hours and 55 minutes before the crash. After DART slammed into Dimorphos on Sept. 26, astronomers clocked its orbit time at 11 hours and 23 minutes, 32 minutes shorter than before, signaling a significant change in its path. "All of us have a responsibility to protect our home planet. After all, it's the only one we have," said NASA Administrator Bill Nelson. "This mission shows that NASA is trying to be ready for whatever the universe throws at us."



This imagery from NASA's Hubble Space Telescope from Oct. 8, 2022, shows the debris blasted from the surface of Dimorphos 285 hours after the asteroid was intentionally impacted by NASA's DART spacecraft on Sept. 26. The shape of that tail has changed over time. Scientists are continuing to study this material and how it moves in space, in order to better understand the asteroid.
Credits: NASA/ESA/STScI/Hubble

“If there has been any success in my life, that was built on the unshakable foundation of failure...” J. C. Bose

Extended Reality:

Extended reality comprises all the technologies that simulate reality, from Virtual Reality, Augmented Reality to Mixed Reality and everything else in-between. It is a significant technology trend right now as all of us are craving to break away from the so-called real boundaries of the world. By creating a reality without any tangible presence, this technology is massively popular amongst gamers, medical specialists, and retail and modeling. To understand the technical aspect of Extended Reality (XR), we need to understand the technologies which are used to create Extended Reality (XR) :

1. AI for Artist: Artificial Intelligence artwork refers to art generated with the assistance of AI. For the uninitiated, AI is a field of computer science focused on building machines that simulate human cognition and learning. AI generated art can range from autonomous creations (e.g. Ahmed Elgammal's work) to improvisational partnerships co-created in real-time (e.g. Sougwen Chung's work). AI artists vary widely in their mediums, from the artificial intelligence paintings of Pindar Van Arman to the AI created music of Taryn Southern to the AI poetry of Ross Goodwin.

2. ChatGPT: ChatGPT (Generative Pre-trained Transformer)[1] is a chatbot launched by OpenAI in November 2022. It is built on top of OpenAI's GPT-3 family of large language models, and is fine-tuned (an approach to transfer learning) with both supervised and reinforcement learning techniques.