

Fourth Newsletter

April 2024

About Us

The TIH at IIT Jodhpur, named iHub Drishti, focuses on building cyber-physical systems for computer vision, AR and VR. It is a Section-8, Not-for-profit Organization promoted by and at the Indian Institute of Technology Jodhpur under an NM-ICPS of the Government of India. The hub, steered by the Hub Governing body and the Board of Directors of TIH, will host teams of faculty members, research scholars, developers and scientists who will work towards developing the technologies. The TIH envisions creating an ecosystem in and around the thematic areas and building collaborations with other TIHs to foster CPS technologies' overall growth and development. The facility would include a mix of office and laboratory spaces with state-of-the-art infrastructure facilities that will cater to the collaborating institutions. The TIH will also build a network of researchers and developers, both externally hired and from the student body.

Chairman's Message

"I am delighted to present to you the 4th edition of the iHub Drishti newsletter, where we share latest developments and achievements of the Technology Innovation Hub (TIH) at IIT Jodhpur. iHub Drishti has been creating an ecosystem in and around the thematic areas of Computer Vision (CV), Augmented Reality (AR) and Virtual Reality (VR) and collaborated with researchers from partner Institutions and Industries. In recent times we have started some skill development program in AR VR domain, where students from different domains can learn and enhance their skills in the area of AR and VR. We have also signed MOU and collaborated with IIT Jammu, Hyperreality and IGNCa for collaborative research on different areas. This time we have funded good startups not only from main land of the country but from Islands like Andaman & Nicobar too."



Prof. Santanu Chaudhury
Chairman



Prof. Gaurav Bhatnagar
Project Director

Project Director's Message

"I am delighted to announce the fourth edition of iHub Drishti newsletter. I wanted to announce that we have created 1300+ jobs in different domains. With these manpower support and with the help of Principal Investigator of different verticals and Horizontals we have developed latest technologies, trained U.G/P.G/PhD students with the help of fellowships. Now we have also started some skill development certification programs for Students & Working professionals."

Products and Services

Vision-Based online Defect Detection System for Quality assurance and Testing

It is an Automated inspection system with an image acquisition and processing system designed and placed to capture the component critically. It uses different image processing algorithms and machine vision techniques, and the captured data will be used to identify and quantify the defects. The product can be customized and detect defects for any surface. This has been primarily designed for the Manufacturing Industry, especially Tapered Cylindrical Bearing Rollers. It can potentially revolutionize the manufacturing sector because of the socio-economic benefits it adds. It can potentially increase productivity, decrease rejected components being supplied to OEMs, and increase revenue.



ASI Vadnagar Site Game



Creation of a 2D side-scrolling single-player platformer game for the Archeological Survey of India (ASI) excavation site at Vadnagar, Gujarat. The concept of the game is to tell stories about the rich heritage of the Vadnagar site.

Game puzzle designing that will appeal to the average Indian youth and keep them engaged. Artifacts and history of the Vadnagar site are showcased in an interactive way where a player can seamlessly learn through in-game mechanics.

TIH iHub Drishti Omniverse and DGX A100

TIH iHub Drishti established the Omniverse Nucleus for Mixed Reality Lab and Digital Gaming Lab. It includes a Hypervisor Server, Ove Node, and Nucleus Server with NVIDIA A40 GPU and Intel Xeon Processor. Key features include real-time simulation and visualization, AI integration, remote collaboration capabilities, and a powerful Omniverse Kit for customization. It also boasts Omniverse Holodeck for immersive simulation and a growing ecosystem of extensions.

Omniverse caters to making it an invaluable tool for real-time 3D content creation, simulation, and collaboration across diverse sectors. Including Omniverse Holodeck in these labs takes immersive simulation to the next level. It provides an unparalleled level of immersion and realism, making it an ideal platform for testing, training, and exploration in a variety of fields.



Pragatii Hackathon 2023



Winner:

Team DRISHYA: Smart Glasses for the Visually Impaired

The curtains have fallen on the Pragatii Hackathon, hosted by iHub-Drishti, and we are thrilled to share the exciting results. The event, inaugurated by Shri Alkesh Kumar Sharma and Prof. Santanu Chaudhury, took place on August 1, 2023. As part of the Programme for Acceleration and Growth in Artificial Intelligence and Virtual Reality Fusion Technology Development for Innovative Ideas, the hackathon witnessed remarkable participation from over 100 teams.

Creative Challenges for Game Enthusiasts

The iHub Drishti Game Jam 2023 was an exciting event that brought together game developers, designers, and enthusiasts to create innovative and engaging games. Held at iHub in collaboration with Prometeo, IIT Jodhpur, the event aimed to foster creativity and collaboration within the gaming community. Participants had the opportunity to showcase their skills, learn from industry experts, and network with like-minded individuals. The Game Jam provided a platform for individuals to explore new ideas, experiment with different game development techniques, and ultimately, create fun and entertaining games.

Jobs

1300+

Project

46

**Technology
Developed**

12

Publication

23

IP

9

Fellowship

206

Startup

12



NICORNIZ

OncoSphera
DEVELOPS INNOVATIONS



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JOHARI



Algorithmic
Biologies



SAPIO
ANALYTICS

Merkel Haptic Systems



Empowering your business



HYPERREALITY
SOLUTIONS

Outreach Activities

CVIP 2023



IIT Jammu: Prof. Santanu Chaudhury, Director of IIT Jodhpur and Chairman of iHub-Drishti, graced the 8th International Conference on Computer Vision & Image Processing (CVIP-2023) at IIT Jammu with his illuminating keynote address. iHub-Drishti's stall at IIT Jammu showcased cutting-edge innovations, impactful research, and transformative products. Visitors explored technologies that redefine boundaries – from vision-based defect detection systems to immersive augmented reality experiences.

ICVGIP 2023



IIT Ropar: TIH, iHub Drishti was a Silver sponsor for 14th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP) 2023, organized by IIT Ropar in association with the Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI). iHub Drishti CEO Mr. Manas Bairagi delivered industry talk at this conference related to ARVR technologies. Also the achievements latest research and development of iHub Drishti explained in this event.

Hastship Utsav 2024



Hastshilp Mela: During the Paschimi Rajasthan Hastshilp Utsav 2024, organised by Laghu Udyog Bharti in Jodhpur. IIT Jodhpur with TIH, iHub Drishti jointly exhibited AR/VR technologies developed by researchers. The event was inaugurated by Rajasthan Chief Minister Shri Bhajan Lal Sharma, who visited the stall and interacted with Prof. Santanu Chaudhury, Director IIT Jodhpur and Chairman, iHub Drishti.

Winter School 2023



Winter School: The Department of Computer Science and Engineering, IIT Jodhpur in association with TIH iHub Drishti at IIT Jodhpur, organized its second winter school (in-person) on Artificial Intelligence and Theoretical Computer Science - a bouquet of two schools. This year the School focused on Computation in Social choice and Economics and 3D vision.

IISF 2023



India International Science Festival (IISF) 2023: Numerous students and common public experienced the Clock Tower of Jodhpur through HoloLens Augmented Reality (AR), Kalaanubav (a 3-D virtual marketplace for arts and crafts by Jodhpur City Knowledge and Innovation Foundation) and many other AR VR based technologies with TIH iHub Drishti.

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