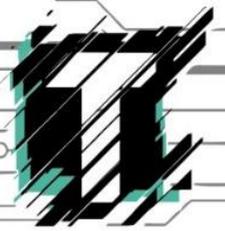




# TECHKRITI'17

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## PRE CONDUCTION REPORT

IIT Kanpur has always believed in and practiced the philosophy of inculcating complete education including personality and leadership development among the youth. In accordance with this culture, the Students Gymkhana of IIT Kanpur has been organizing an annual All India competition on Innovation in Technology and Entrepreneurship, acronym Techkriti, among engineering students of this country for the last 22 years. Sustained efforts have now elevated Techkriti to a global platform for promoting innovation and creativity. The festival is a much awaited event in the technical and business calendar of the student community, and attracts participation from India as well as abroad.

### **THEME: FACTUALISING FICTIONS**

Humanity has gone a long way from the discovery of the use of fire to the advent of modern technology like wireless internet. All these leaps in the fabric of human history have originated from a fictional idea and transformed into reality. Factualising Fictions is a tribute to this endearing spirit of humanity that makes progress possible.

Techkriti'17 will be organized from **23<sup>rd</sup>-26<sup>th</sup> March**.

The core team specially thanks for the efforts of the following people, without whom Techkriti, as is now, would not have been possible.

- Dr. A.R. Harish (DOSA, IIT Kanpur)
- Dr. J Ram Kumar (ADSA, IIT Kanpur)
- Dr. Deepu Philip (FAC Chairman, Techkriti)
- Dr. Mainik Das (Member, FAC)
- Dr. Nitin Saxena (Member, FAC)
- Mr. Anivesh Agrawal
- Mr. Om Prakash Ghuniyal
- Mr. Ashwani
- Mr. Raj Kumar Meena
- Mr. Akshat Srivastava
- Mr. Akshay Vaidya
- Mr. Ayush Shakya
- Mr. Vedant Goenka
- Mr. Ashutosh Ranka

We are also grateful for the support provided to us by the Senate, Professors, Staff, IIT Kanpur Administration and all the students of IIT Kanpur.



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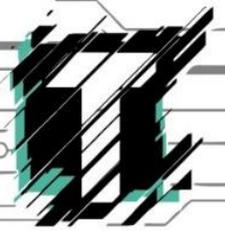
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## INITIATIVES

### HOPE:

Handing Opportunities by Promoting Education (HOPE) is the social initiative taken by Techkriti to bring educational opportunities to students who cannot access these facilities otherwise. The various activities under the umbrella of HOPE were:

- **Science Workshop-cum-Road Trip:** Techkriti partnered with the NGOs Sarthak Foundation and Jagriti Bal Vikas Samiti to conduct experiment-based science workshops in Lucknow and Kanpur, respectively. These were attended by scores of young students who learnt and enjoyed in equal measures.
- **Mega Bike-a-Thon:** On January 29, 2017, Techkriti conducted a Bike-A-Thon under its social initiative HOPE in the city of Kanpur. This athletic event was conducted in association with Jagran and it saw a high turnout of about thousand people. There were people of all age groups, ranging from children to senior citizens. The route of the Bike-A-Thon started at Green Park stadium and ended at 'Some' chauraha, while spanning a distance of 10 km.
- **Poster Making Competition:** In collaboration with Prayas where children made posters for their dreams of the future.

## Pre-Festival Activities

### Talk by Dr. Richard Muller:

Dr. Richard Muller gave a talk on 6<sup>th</sup> March in the Auditorium. His talk covered climate change and the nature of time. The audience had an enthusiastic response and many questions were asked.

### Holi Celebration:

In association with Cultural, Sports, Films & Media and Science and Technology Councils and various Clubs of IIT Kanpur, Techkriti organized the Holi Celebrations, called 'Rang Jama De' held in the swimming pool parking lot. Rain Dance and colours, followed by a DJ and thandai, the entire event received warm response from students.

### Techkriti Nostalgia:

Techkriti '17 created this innovative section for the Techkriti website where the highlights and workings of the previous editions of Techkriti are documented.



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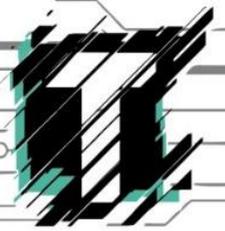
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## MAJOR EVENTS

- **IARC:** This event is about solving a maze via line following autonomous bots, emphasis on the basics of robotics. Participants have to prepare 2 autonomous robots which can communicate with each other so as to simultaneously solve 2 mazes via line –This event has participation from India as well as following International Teams. Participants are from Sri-Lanka, UAE, Bangladesh and Nepal.
- **Multirotor:** In this event, participants will be judged in both the aspects of a multirotor that is on the expertise of flying skill and the stability of your bot. These fascinating aircrafts combine the flight characteristics of both a plane and a helicopter.
- **IORC:** Indian Open Rubik's Cube is the first ever official Rubik's Cube competition in India started in IIT Kanpur. IORC is conducted under the patronage of WCA- World Cube Association. This event has twelve sub-events. Participants have advantage of competing among the cubers throughout the world.
- **IOPC:** IOPC is the annual International Online Programming Contest of IIT Kanpur, organized by the Techkriti team. It is a prestigious programming contest where each coder whacks his brain to code solutions to the given problems. It is the place where optimization and proficiency matters, skills matter, hard work matters.
- **IRGT:** The International Robot's Got Talent does not restrict participant's creativity to a pre-defined problem statement. Any admirable work/bot/machine can be presented in IRGT. Participants from various countries would participate in a country specific qualifying round, and the winning teams from the countries would be given entry to the Grand Finale of the International Robot's Got Talent to be held during Techkriti '17.
- **Robowars:** The ultimate test of engineering excellence, teamwork, strategy and gaming is here! Techkriti brings to you its flagship event, Robowars. Witness the brightest engineers in India build the mightiest monsters which shall unleash Armageddon on the battle turf!
- **Sky Sparks:** The competition involves RC aircraft with electric motors. The competition provides a platform to compete different flyers through a series of different rounds doing different manoeuvres and showing their talent in flying like payload dropping, limbo flying and on spot landing.



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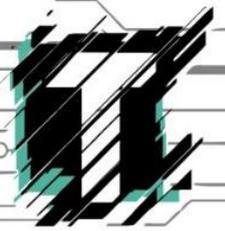
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- **INAE-IIT Kanpur National Competition “Innovation in Manufacturing Practices 2017”**

This event is organized by Mechanical Engineering Department of IIT Kanpur in collaboration with INAE to provide great opportunity to showcase their talent in Design and Manufacturing practices. Contestants design an effective and innovative model and give a final working shape as a product.

- **TGP:**

Techkriti Grand Prix, brings a heart-pounding challenge for your engineering skills in building a remote controlled vehicle which performs via Taking sharp bends, zigzag curves on a rough road and jumping over planks, powered by a powerful internal combustion engine.

- **IOT: Internet Of Things**

Internet of Things is a competition where participants get a platform to present their business plans related to internet of things. Here start-ups get guidance from India's finest mentors and also an opportunity for networking, team creation and to raise seed funding.

- **Embedded:**

This Event poses challenge to the students of electronics community, to create a device which sends real-time data of the body parameters to the physician through Internet, through the help of embedded systems. Embedded systems design is a productive synergy between hardware and software design.

- **Entrepreneurial Events:**

- Upstart Pioneer
- Pitch Premier
- Social Track
- Elevator Pitch
- The Viral Voices



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## ALL EVENTS:

CATEGORY	COMPETITION
ROBOGAMES	<ul style="list-style-type: none"><li>• Robowars</li><li>• IARC</li><li>• Manoeuvre</li><li>• IRGT</li></ul>
ECDC	<ul style="list-style-type: none"><li>• Electromania</li><li>• Electrade</li><li>• Embedded</li><li>• Measure it- 3D</li></ul>
Entrepreneurial	<ul style="list-style-type: none"><li>• Upstart Pioneer</li><li>• Pitch Premier</li><li>• The Viral Voices</li><li>• Social Track</li><li>• Elevator Pitch</li></ul>
Buizkriti	<ul style="list-style-type: none"><li>• Battlefield</li><li>• Marketing Villa</li><li>• Auction War</li><li>• Countdown</li><li>• Stockism</li><li>• Best Manager</li></ul>
Social: Presentation	<ul style="list-style-type: none"><li>• Soccon</li><li>• 29 States</li><li>• Techkriti Innovation Challenge</li><li>• Industry Institute Interaction</li></ul>
Design Event	<ul style="list-style-type: none"><li>• Bridge Design Challenge</li><li>• Egg Drop Challenge</li><li>• Scientoon</li><li>• Concatenate</li></ul>
Software Corner	<ul style="list-style-type: none"><li>• Capture The Flag</li><li>• Chaos</li><li>• IOPC</li><li>• Blockchain Hackathon</li><li>• Crypto</li><li>• IHPC</li><li>• Techkriti Open Source Programming</li></ul>

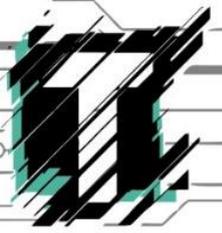




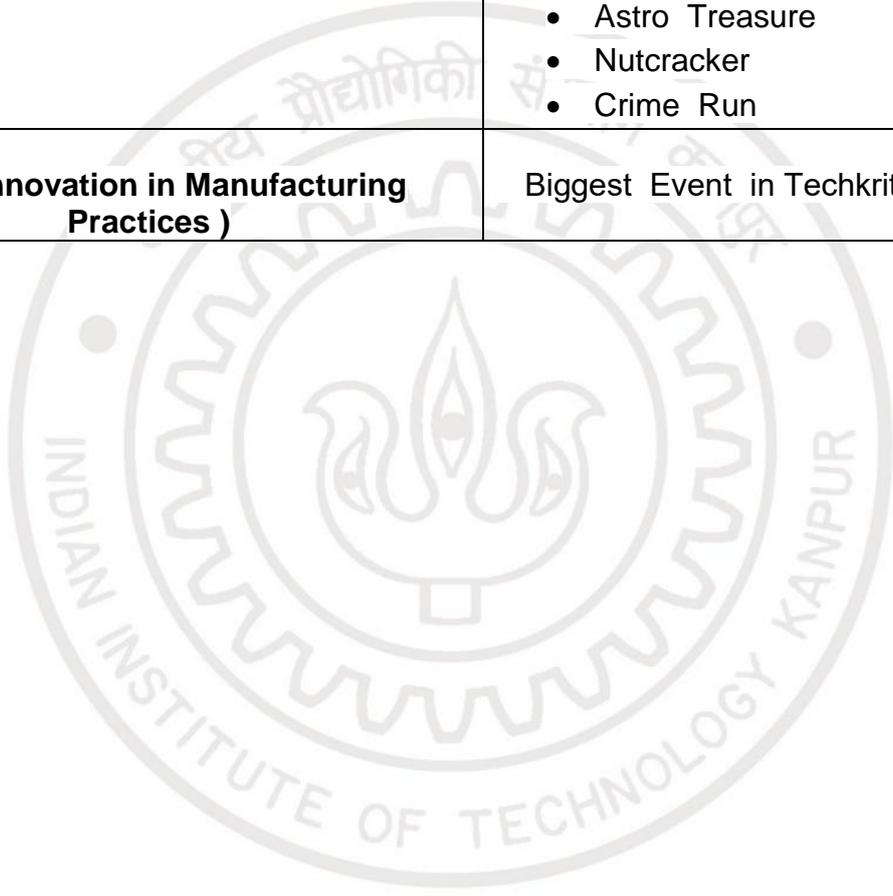
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<b>Take Off</b>	<ul style="list-style-type: none"><li>• Hover Rugby</li><li>• Multicopter</li><li>• Rule The Sky</li><li>• Sky Sparks</li></ul>
<b>Mixed Bowl</b>	<ul style="list-style-type: none"><li>• IORC</li><li>• Whatsup</li><li>• Astro Quiz</li><li>• Astro Treasure</li><li>• Nutcracker</li><li>• Crime Run</li></ul>
<b>IMP ( Innovation in Manufacturing Practices )</b>	Biggest Event in Techkriti '17



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## **TECHNOCRUISE**

Technocruise is the zonal round of Techkriti. This year Techkriti organized Technocruise in 8 cities across India. The main motive of Technocruise is to increase the reach of Techkriti among college students and provide opportunity to those students who are not able to attend Techkriti. Technocruise this year contained of prelims of events, talks and workshops.

### **PRELIMS City:**

1. Bhopal
2. Jaipur
3. Noida
4. Ahmedabad
5. Lucknow
6. Ujjain
7. Kolkata

### **ZONALS CITY:**

1. Banda
2. Jodhpur
3. Vadodara
4. Gwalior
5. Agra
6. Bangalore
7. Dehradun
8. Raipur
9. Allahabad
10. Hyderabad

### **Events:**

1. IARC
2. Manoeuvre
3. Rule The Sky
4. Soccon

### **Workshops:**

1. Android App Development
2. Ethical Hacking
3. Internet of Things
4. Sixth Sense Robotics
5. Flying Wing

### **Talks:**

1. Dr Deepak Motwani in Bhopal
2. Anand Singh Shekhawat in Jaipur
3. Yash Shah in Ahmedabad



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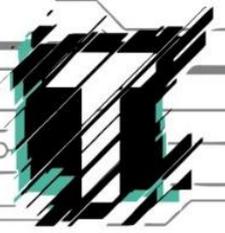
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## TECHKRITI OPEN SCHOOL CHAMPIONSHIP

Aptitude and presentation competition for school students of class 9<sup>th</sup>-12<sup>th</sup>, organized in 22 cities of the country. Techkriti Open School Championship is an initiative taken by Techkriti'17 to bring a core spirit of innovation to the grassroots level. TOSC aims at strengthening mental aptitude, logic and scrutiny and providing a platform to build fundamental experience and knowledge. It also encourages students to exercise coordination skills and to think out of the box while providing solutions to practical problems. Unlike other competitive examinations, TOSC focuses on innovation and pragmatism while dealing with real life problems instead of just academic aptitude.

Round 1: Around 6200 students participated in the first round of TOSC

Round 2: Online abstract submissions

Round 3: Final 110 participants were called to IIT Kanpur for the final round presentations.

### **Cities:**

- 1) Kanpur
- 2) Lucknow
- 3) Indore
- 4) Ujjain
- 5) Kota
- 6) Nagpur
- 7) Sikar
- 8) Bhopal
- 9) Bengaluru
- 10) Varanasi
- 11) Jaipur
- 12) Patna
- 13) Gwalior
- 14) Delhi
- 15) Kolkata
- 16) Ranchi
- 17) Kannur
- 18) Kottayam
- 19) Pala
- 20) Kanjirapally
- 21) Thiruvananthapuram



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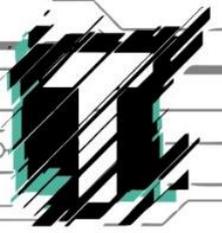
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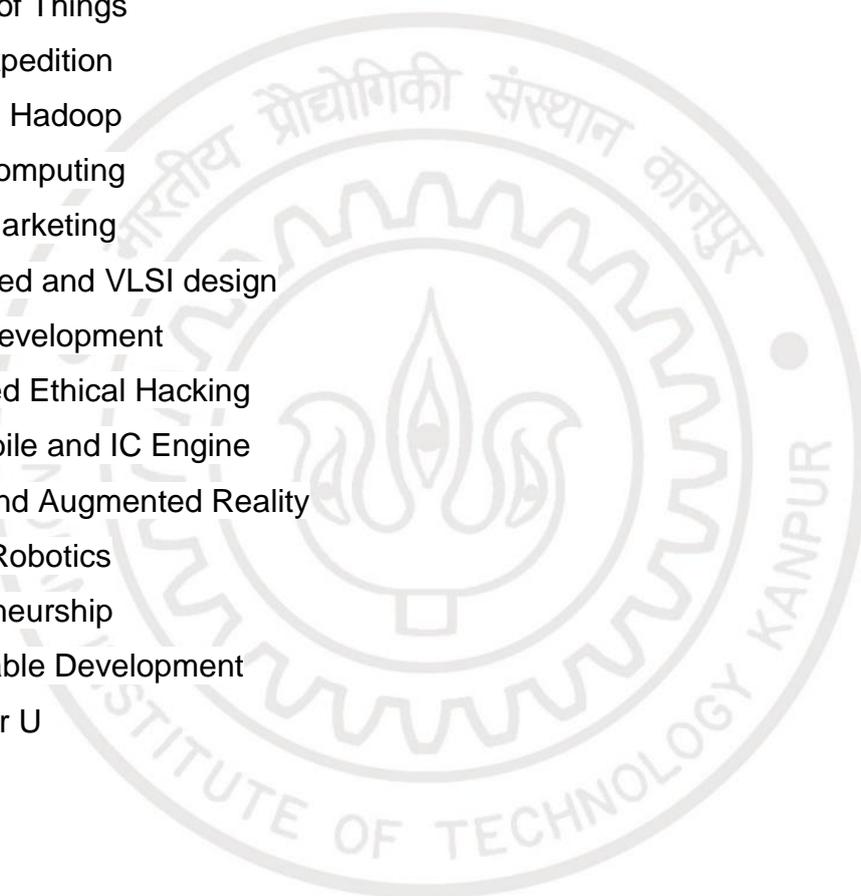
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## WORKSHOP

1. Bridge Design Challenge
2. Sixth Sense Robotics
3. Android App Development
4. Internet of Things
5. Robo Expedition
6. Big Data Hadoop
7. Cloud Computing
8. Digital Marketing
9. Embedded and VLSI design
10. Game Development
11. Advanced Ethical Hacking
12. Automobile and IC Engine
13. Touch and Augmented Reality
14. Swarm Robotics
15. Webpreneurship
16. Sustainable Development
17. Tricopter U



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## TALKS

<b>PROF K. C. NICOLAOU</b>	Kyriacos Costa Nicolaou is a Cypriot-American chemist known for his research in the area of natural products total synthesis. He is currently Professor of Chemistry at Rice University, having previously held academic positions at The Scripps Research Institute/UC San Diego and the University of Pennsylvania.
<b>PROF RICHARD A. MULLER</b>	Richard A. Muller is an American physicist and professor of physics at the University of California, Berkeley. He is also a faculty senior scientist at the Lawrence Berkeley National Laboratory.
<b>GEOFFREY BEATTIE ( VIDEO CONFERENCE )</b>	Geoff Beattie is an academic psychologist, writer and broadcaster. He is Professor of Psychology at Edge Hill University and a Masters supervisor on the Sustainability Leadership Programme at the University of Cambridge. He was Professor of Psychology at the University of Manchester from 1994 until 2012, Head of the Department of Psychology from 2000 to 2004 and Head of the School of Psychological Sciences from 2004 to 2011.
<b>MEINOLF SELLMANN</b>	Meinolf Sellmann, born in Germany, is a computer scientist, best known for algorithmic research, with a special focus on self-improving algorithms, automatic algorithm configuration and algorithm portfolios based on artificial intelligence, combinatorial optimization, and the hybridization thereof. He received a doctorate degree in 2002 from Paderborn University (Germany) and is now senior manager for data curation in the cognitive computing department at IBM Research.





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<b>HENRY "FRITZ" SCHAEFER</b>	<p>Henry "Fritz" Schaefer III is a computational and theoretical chemist. He is one of the most highly cited scientists in the world, with a Thomson Reuters H-Index of 114. He is the Graham Perdue Professor of Chemistry and Director of the Center for Computational Chemistry at the University of Georgia. Schaefer is a prominent proponent of intelligent design.</p>
<b>DEVIKA SIROHI</b>	<p>Devika Sirohi is an Indian scientist and the youngest member of the team that successfully decoded the Zika virus.</p>
<b>VIJAY PRASAD DIMRI</b>	<p>Vijay Prasad Dimri is an Indian geophysical scientist, known for his contributions in opening up a new research area in Earth sciences by establishing a parallelism between deconvolution and inversion, the two vital geophysical signal processing tools deployed in minerals and oil and gas exploration. The Government of India honoured him, in 2010, with the award of Padma Shri, the fourth highest civilian award, for his contributions to the fields of science and technology.</p>
<b>IAN ANGELL</b>	<p>Ian Angell is the Professor at Department of Management, London School of Economics. His growing reputation comes as the culmination of twenty years work developing a new perspective on information systems, which stresses that the social, economic and organizational issues are more important than the technological ones: even the very best investment in new technology can be a source of commercial risk, if the societal aspects are not managed properly.</p>

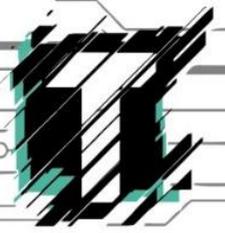




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<b>DAVID REITZE</b>	<p>David Reitze (born in Washington, Pennsylvania) is an American laser physicist who is Professor of Physics at the University of Florida and served as the scientific spokesman of the Laser Interferometer Gravitational-Wave Observatory (LIGO) experiment in 2007-2011. In August 2011, he took a leave of absence from the University of Florida to be the Executive Director of LIGO, stationed at the California Institute of Technology, Pasadena, California.</p>
<b>ASHISH CHAUHAN</b>	<p>Asish Chauhan was a member of the core team that founded the NSE. He moved into a permanent role at the NSE in 1993, and stayed till 2000 when he left as the Vice President. At NSE, Chauhan set up the first successful screen-based trading framework in equities in India which has grown to be the largest equities market in India, created NSE-50 (Nifty) Index and established India's first commercial satellite telecom network. After leaving NSE, Chauhan joined Reliance Industries as the Chief Information Officer (CIO). Chauhan left Reliance and joined the Bombay Stock Exchange in 2009 as the Deputy CEO.[6] He was made the MD and CEO on November 2, 2012.</p>
<b>RAJAT SHARMA</b>	<p>Sharma is the chairman and editor in chief of an Indian Hindi news channel, India TV. He is one of India's most prominent journalists. Sharma is currently the chairman and editor-in-chief of India TV, as well as host of "Aap Ki Adalat" news bulletin. He is said to be "close to Finance Minister Arun Jaitley".</p>
<b>ANDREA MOCELLIN</b>	<p>Andrea Mocellin is a premier vehicle designer for brands of high repute. They have been exhibited in various shows such as the Beijing Motor show.</p>





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<b>A.S. KIRAN KUMAR</b>	A.S. Kiran Kumar is an Indian Space scientist and chairman of the Indian Space Research Organization.
<b>BALAJI VISHWANATHAN</b>	Balaji Vishwanathan is a founder of a robotics company called Invento and a pioneer in AI enabled hardware. He is the most followed writer on Quora.
<b>ARSH SHAH DILBAGI</b>	Arsh Singh Dilbagi is popularly known for his product 'TALK' which converts breath into speech
<b>NITIN KUMAR</b>	Nitin Kumar is the Vice President of Juniper Fellow. He is a software architecture for embedded systems with a focus on networking systems.
<b>AMIT DAYAL</b>	Amit Dayal is a senior Vice President and Division Head at Samsung Research Institute, Bangalore.
<b>SANJEEV PRASAD</b>	Sanjeev Prasad is the Vice President HR of Samsung

## Panel Discussions:

### Futuristic Warfare:

1. Lt Gen P Ravi Shankar
2. Air Marshall Padmajit Singh Ahluwalia
3. Rituraj Dwivedi
4. Rifat Jawaid (Moderator)

### Networking Operations:

1. Sriram Subramanian
2. Kannan Ramamurthy
3. Mohan Satyaranjan
4. Sriram A G (Moderator)



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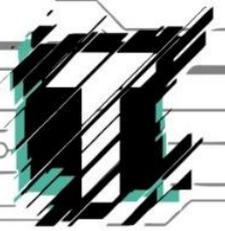
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## Exhibitions

Techkriti was first held in 1995 with the aim of developing interest and encouraging innovation in technology among students. It has since grown into one of the largest technical festivals in Asia. Exhibitions in Techkriti have shown a tremendous level of innovation and inspirational exhibits from all over the world. Significance of technological innovation on humans is tremendous because technology helps them adapt to the environment and Techkriti provides the platform, Tech-expo for this showcase of innovations and talents.

### 1. Hyperloop:

The Hyperloop is a unique mode of transport that combines the speed of an airplane, the capacity of a train and the convenience of a car. Designed for speed and safety, it incorporates economy into its considerations too.

### 2. OTO, Germany:

A musical instrument and a controller that allows users to touch the shape of sound. You can use it to play various types of music ranging from DJ to Electronica.

### 3. INDRO:

INDRO is the tallest humanoid robot created by Mr Hulawale and has fascinating features such as ten functional fingers and complete autonomy.

### 4. Holus, USA:

The world's first table-top holographic display that converts any digital content from a computer, tablet or smartphone into a 3D holographic experience.

### 5. LIGO:

LIGO stand for Laser Interferometer Gravitational-Wave Observatory and will showcase you gravitational waves in action.

### 6. Puzzlebox Orbit:

The Puzzlebox Orbit is a brain-controlled helicopter. Operated with an EEG headset, users can fly the Orbit by focusing their concentration and clearing their mind. Colorful visuals and physical feedback help provide positive reinforcement while developing skills of attention and mental relaxation.

### 7. Wall-E and others, Bangladesh:

An exhibit centring on the lovable fictional character called Wall-E.

### 8. Indian Army Expo:

An expo of tanks and field guns from the Indian Army.

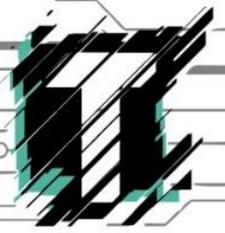




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## 9. DRDO:

An educational exhibition brought to us by DRDO.

## 10. Vintage Car Expo:

An attraction beloved by all, this vintage cars expo promises to quench the thirst of automobiles in a classy fashion.

## 11. Harley Davidson Expo:

Yet another vehicular expo, this one is for the lovers of thrill and speed in the form of bikes.

## 12. AAMI Smart Reader:

Wearable technology that enables blind and dyslexic people to read books.

## 13. Drone Aviation

For the aero fanatics a chance to see the real-life applications of the field.

## Shows:

SHOWS	DESCRIPTION
Vilas Nayak	Asia's lead speed painter
OAT Night with Sapan Verma and Vineeth Vincent	Be prepared to be enthralled by a mixture of comedy and beatboxing
EDM Night with Zephyrtone and MorganJ	Be ready to dance your feet off with this EDM night
Sonu Nigam Live	A live show by Sonu Nigam and his band
Jai Vijay	A hearty round of mimicry and standup comedy
Dhruv Visvanath	Finger Style Guitarist
Vera Bugatti	3D street painter
Karan Singh	A mixture of magic and logic to tantalize your sense





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## FUN @ TECHKRITI

**FUN -T:** A Fun Zone where you can enjoy with your wingies and friends! It has different games in which you can have a friendly competition with them.

- 1) **Human Foosball** – Reality added to a favourite game
- 2) **Paint Ball** – Shoot your friends with color balls
- 3) **Zorb Football** – Enjoy football while zorbing in balloons.
- 4) **Gun Shooting**- A way to experience Counter Strike in real life
- 5) **Sumo Wrestling** – Enjoy traditional Japanese art form
- 6) **ATV Bikes** – For the bike enthusiasts
- 7) **Archery** – Check out your aim by participating in it
- 8) **Ball Zorbing** – Experience floating in air
- 9) **Football Dart**- A fun mixture of darts and football
- 10) **Bull Ride**- A fun way to live like a cowboy.



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