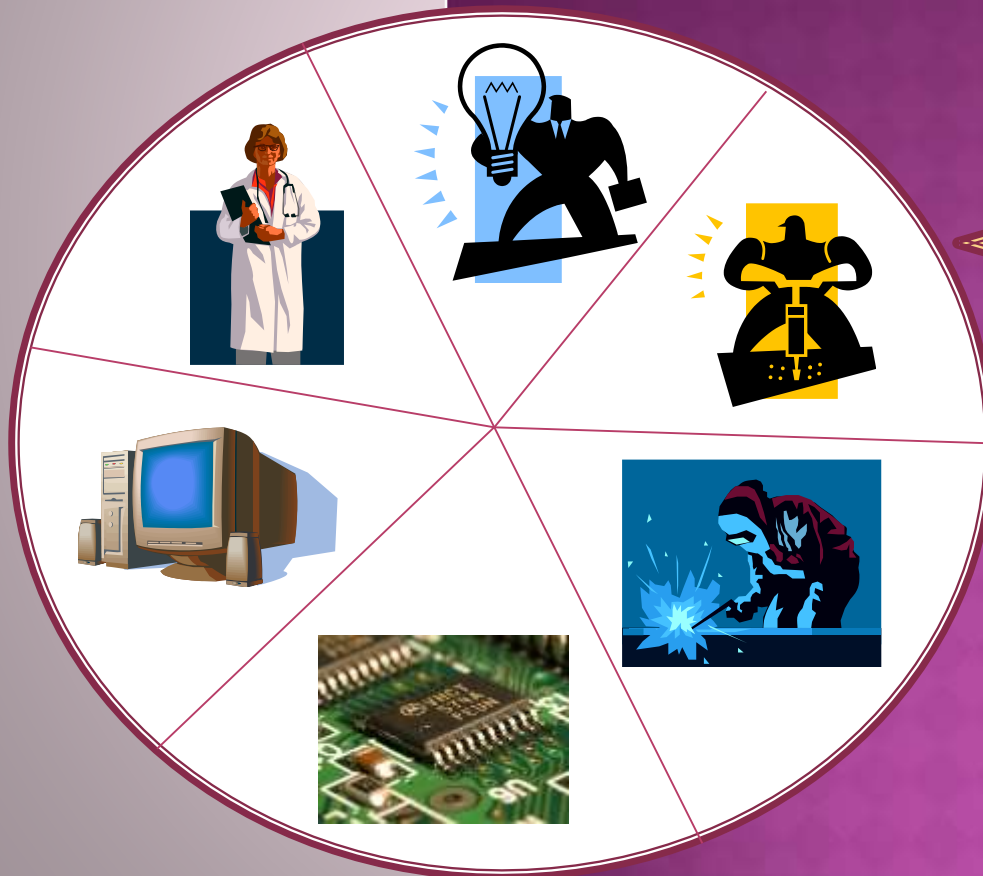


# "SATYADARPAN"

E-Magazine



**One  
college  
for all  
dreams**

**SEPTEMBER-2023**

# Mission

**The MISSION of the institute is to offer quality and professional education to all strata of the society that meets the personal career goals and to cope with the demand of the quality technical professionals in diversified nationals and international organizations and to make the student competent enough to face all types of challenges.**

# Vision

**The VISION of the institute is to build future of its students by providing highest value of the education to satisfy the needs of society and industry to help nation in enhancing capabilities in Technology/ Management, Scientific Research and Education.**

# Direct from our Chairman's Heart



**DR.H.K. CHILLAR**

**Sat Kabir College has become premier institute in shape of quality education, conducive study environment, discipline and placement. We have cherished very long vision and very clear mission to provide high level opportunity and facilities to our students.**

**SKITM and Sat Kabir college of pharmacy focus in building brilliant professionalits, having all moral and social values of dedication, sincerity and nationality to serve any organization.**

# From the Editor's Desk

Chief Editor: Er. Sumiran Daiya

Dept. of Electronics and Communication

Board of Editors: Er. Meenakshi

Dept of Computer Science and Engineering

Mr. Giriraj

Dept of Pharmacy

Students; Editor: Rohit (B.Tech CSE 3<sup>rd</sup> year)

**The** E-magazine of Sat Kabir College is a monthly magazine which covers the achievements by our students and faculty members in the past month which boosts them in increasing confidence.

It provides a platform to all the students of SKITM and Sat Kabir College of Pharmacy to know about all the happenings in the college.

We would like to thank our Chairman Sir, Dr. H.K. Chillar, Director Sir, Dr. K.K. Saini and Principal Pharmacy, Dr. Jitesh Katewa for providing this opportunity.

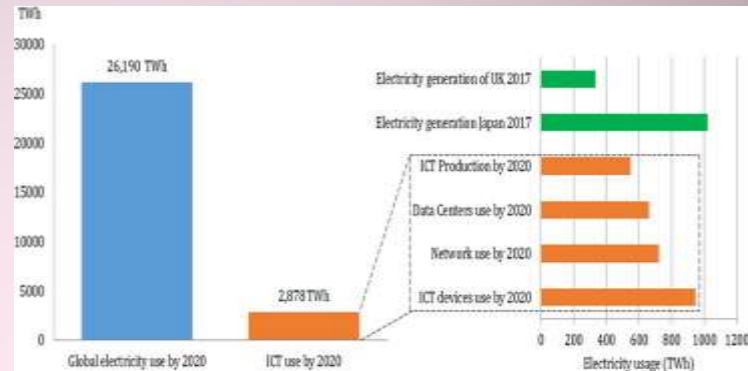


# FACULTY SECTION

# SPINTRONICS DEVICES FOR ENERGY-EFFICIENT DATA STORAGE AND ENERGY HARVESTING

By Er. Sumit Dalal (HOD, ECE Dept)

Data storage capacity in our society has drastically increased so to keep up with ever-increasing data generation. Simultaneously, memory devices have reduced in size. This increase in data storage capacity at reduced dimensions in part facilitates the carrying of information such as images and music in mobile phones, and allows exchanging them online. Part of this technological advancement has been enabled by manipulating the spin degree of freedom of electrons in electronics, and this field of research and technology is therefore often called spintronics. A crucial milestone in the development of spintronics was the discovery of giant magnetoresistance<sup>1,2</sup>. The giant magnetoresistance mechanism enabled replacing the core operation concept of memory devices, the collective magnetisation of localized spins in ferromagnetic layers, with electronic conduction depending on the electron spin state. Digital information is recorded following a binary state of 0 and 1 formed by two different spin configurations.



This increase in data storage capacity has come with a significant increase in energy consumption. Cloud data storage and sharing information online are powered by big data centres, which in 2010 were estimated to consume 1-1.5% of the global electricity usage, with predictions of increment from 3 to 13% consumption by 2030, depending on the measures taken to reduce electricity expenditure<sup>3</sup>. For example, electricity consumption associated with the information and communication sector is predicted to represent 11% of the global electricity consumption in 2020 (see Fig. 1).

# ROBOTICS IN MECHANICAL ENGINEERING

By Er. Bhupender Sharma (HOD, ME Dept)

Robotics is becoming increasingly important in mechanical engineering. They are becoming increasingly sophisticated and capable of performing complex tasks, and they have a major impact on the accuracy and efficiency of building machines.

Robotics can be used to automate tasks, as well as to create new materials and components.

Robotics can also be used to improve existing processes and components.

Robotics can be used to explore hazardous environments, perform surgery, provide companionship. They can learn and adapt to their environment, making them more efficient and effective.

Robotic surgery is becoming increasingly common, and robots assist doctors in complex operations. For example, The Da Vinci Surgical System provides sophisticated equipment for performing invasive robotic surgery.



For aspiring engineers, a career in robots can be immensely gratifying. The field provides various fascinating professions for robotics engineers due to the daily introduction of newer, quicker, and more intelligent robots. Join the rapidly expanding field today and take part in the revolution.

The scope of robotics engineering in the Department of mechanical engineering is vast and has the potential to revolutionize the industry. Mechanical engineers play a crucial role in the field of robotics by designing, developing, manufacturing, and maintaining robots and robotic systems.

# BIM IN CIVIL ENGINEERING

By Er. Shiv Rohilla (HOD, CE Dept)

BIM is an acronym for Building Information Modeling or Building Information Management. It is a highly collaborative process that allows architects, engineers, real estate developers, contractors, manufacturers, and other construction professionals to plan, design, and construct a structure or building within one 3D model. Using a level 3 BIM model for digital clash detection— one of the primary uses cases for BIM.

It can also span into the operation and management of buildings using data that building or structure owners have access to (hence the Building Information Management). This data allows governments, municipalities, and property managers to make informed decisions based on information derived from the model— even after the building is constructed.

## From Blueprints to CAD to BIM

In the past, blueprints and drawings were used to express information about a particular building plan. This 2D approach made it very difficult to visualize dimensions and requirements. Next came CAD (Computer Aided Design), which helped drafters see the benefit of plans in a digital environment. Later on, CAD turned 3D, which brought more realistic visuals to blueprints. Now, BIM (Building Information Modeling) is the standard— but it is much more than just a 3D model.

## The Future of BIM

Because of the clear benefits, BIM is here to stay.

It has defined goals and objectives that are clearly beneficial to all those who work their way through the levels. Undoubtedly, the future of construction will be even more highly collaborative and digital. As BIM becomes increasingly more sophisticated, 4D, 5D, and even 6D BIM will start to play a part in the process.



Furthermore, around the globe, there is an attempt to reduce waste in construction. Much of this is attributed to supply chain inefficiencies, clashes, and reworking. By working collaboratively in a BIM environment, all of this becomes much less likely, setting the stage for a better tomorrow.

As we look to the future, we see tremendous potential. BIM is only the beginning of what's possible with modern construction tools and technology. When BIM is layered with the principles of Connected Construction, the dream of BIM becomes an achievable reality.



# STUDENTS' CORNER

# HOW CHATGPT CAN HELP YOU DO MORE WITH PDFS

BY ROHIT (CSE 3RD YR)



The AI chatbot can search, summarize, and create PDF documents with a few handy plug-ins

**THE GENERATIVE AI** bot ChatGPT has been busy helping writers, debating issues, generating codes, and more—and now that developer OpenAI has opened the door to third-party plug-ins, a ton of new functionality is available.

These plug-ins can look up information on the web, draw diagrams, manage travel plans, interrogate Wikipedia, and more. To access the various plug-ins, you need an active, \$20-per-month subscription to Chat GPT plus. Here we'll focus on one particular type of extension: PDF plug-ins.

## Ai PDF

Ai PDF promises “super-fast, interactive chats,” and all you need to do to get its assistance is to give ChatGPT the URL of a PDF on the web. If that's not possible, the plug-in comes with a PDF upload option, so you can review documents stored on your computer too.

From there it's simply a question of letting the plug-in analyze the PDF you've provided and then asking ChatGPT questions about it—its premise, its conclusions, or specific pieces of information. You can even ask about the style the PDF is written in or the details that it omits.

# ASK YOUR PDF

The name of this plug-in shows you the sort of natural, conversational relationship it wants to facilitate between you and your PDFs—and it says it'll “unlock the power of your PDFs” by giving ChatGPT access to any PDF you give it.

If your PDFs aren't hosted online, then AskYourPDF can upload them for you, and you can then submit queries through ChatGPT. You can ask for specific details from specific sections, get overviews and summaries, get certain sections rewritten, and generally do anything ChatGPT can do with standard blocks of text.

## Key Points:

1. **Methods for Analyzing ANNs:** The paper discusses methods useful for analyzing Artificial Neural Networks (ANNs), including optimization-based tuning analysis, fixed-point-based dynamical system analysis, and quantitative comparisons between a model and experimental data. (Page 9)
2. **Similarity Comparison:** The paper talks about high-throughput quantitative methods that compare different models at scale, such as Representational Similarity Analysis (RSA). (Page 9)
3. **Understanding Network Computation:** The paper delves into the understanding of network computation through state space and dynamical system analysis. It discusses how recurrently connected deep networks are better at predicting responses of higher visual area neurons to behaviorally challenging images. (Page 12)
4. **Analyzing Tuning Properties:** The paper discusses the tuning properties of a neural network trained to perform multiple cognitive tasks. It talks about how each unit in the network is engaged in a task. (Page 11)
5. **Neural Circuits:** The paper seeks a mechanistic understanding of ANNs after training, linking the learning problem, network

हिन्दी कविता

मेरा सच्चा साथी

मैं यादों का  
किस्सा खोलूँ तो,  
कुछ दोस्त बहुत  
याद आते हैं....  
मैं गुजरे पल को सोचूँ  
तो, कुछ दोस्त  
बहुत याद आते हैं....  
कुछ दोस्त बहुत याद आते हैं.  
सबकी जिंदगी बदल गई,  
एक नए सिरे में ढल गई,  
किसी को नौकरी से फुरसत नहीं।

# The Convergence of Artificial Intelligence and the Internet of Things

BY AKANSHA RAJPUT (M.TECH ECE 3<sup>RD</sup> SEM )

The advent of the Internet of Things (IoT) and Artificial Intelligence (AI) has brought about a transformative wave of technological innovation. These two cutting-edge fields, when combined, create what is known as AIOT, or Artificial Intelligence of Things.

## The IoT Foundation

At its core, the Internet of Things is about connectivity. IoT devices, equipped with sensors and communication capabilities, collect and transmit data from the physical world to the digital realm. These devices can range from smart thermostats in homes to industrial sensors on factory floors, creating an expansive network of interconnected "things".

## The Power of Artificial Intelligence

Artificial Intelligence, on the other hand, empowers machines to learn from data and perform tasks that typically require human intelligence. Machine learning algorithms, neural networks, and deep learning models enable AI systems to analyse vast datasets, recognize patterns, make predictions, and even take autonomous actions.

## Conclusion

AIOT represents the next frontier in technological innovation. Its ability to harness the power of AI for analysing IoT data in real-time and making informed decisions has far-reaching implications across industries.

$$\begin{array}{ccccc} \text{AI} & + & \text{IoT} & = & \text{AIoT} \\ \text{Artificial} & & \text{Internet of Things} & & \text{Artificial Intelligence of Things} \\ \text{Intelligence} & & & & \end{array}$$



# Monthly Activities



# WELCOME DAY



Left to Right: Dr. H.K. Chhillar, Naveen Khatri, Mr. Manjeet, Dr.K.K. Saini, Mr. Rajbir Dalal, Mr. Samrat Chhillar, Dr. Dheeraj Chhillar

All the new admissions of the college were welcomed by a grand celebration of **WELCOME DAY** on 16/09/2023. Our chief guests Dr. Vikas Tehlan, Swastik Hospital and Dr. Sukhpal Dheriwal, DDK Hospital supported and guided our students. Various performances were performed by college students as well as freshers. Our chairman Sir, Dr. H.K. Chhillar enlightened and encouraged all the students to grow in succeed in their life by working hard and showed full support towards them in all the ways possible.

The students showed their gratitude in form of clappings and speech by them.

There was a singing performance also prepared by students. All of them participated very enthusiastically. Our director Dr. K.K Saini enlightened the students by telling them about the obstacles they can face in their future and the ways to cope up and prepare mentally for them in advance. His views were very informative and helpful for the students present.

Faculty members were given certificates depending on their meritorious performance in the college. New faculties were introduced to the students. All the HODs were introduced and students were advised to work hard.



Left to Right: Dr. H.K. Chhillar, Rajbir Dalal, Dr. Sukhpal Dheriwal, Dr. K.K. Saini

# INDUCTION PROGRAM

Induction program was held in Sat Kabir College for 5 days after welcome day. All the students interacted with each other. There was different sessions to decrease new students' hesitation and make them feel comfortable.

The first day of induction included introduction of students and getting familiar with their seniors. All students expressed their views about the college environment and showed their keen interest in participating in different activities held in college.

On the second day different committees of colleges were set up. All the incharges were introduced to the students and students actively became of part of different committees of the college.

The third day and fourth day were dedicated to meditation and pranayam guided by our respected Chairman sir Dr. H.K. Chhillar. All the students as well faculty members took part in it with a very keen interest and expressed their gratitude to sir for this session.

He also enlightened the students by explaining the importance of medication in their day to day life and how they should practice it.

At the last day the students expresses their views about the orientation program and were very enthusiastic as they enjoyed and get to know their college in better way.

# INDUCTION PROGRAM PICTURES



**THANK YOU**