FemBit

Year 2022-23 A Technical Newsletter by Department Of Computer Engineering

Government Polytechnic for Girls , Ahmedabad Date:14/08/2023

About Institute & Department

Institute Vision

To carve a brighter prospect for the nation through excellence in technical education for fostering skills, ethical values and environmental consciousness among girls while undertaking existing and forthcoming challenges.

Institute Mission

To nurture technical and creative skills through quality education

To strengthen industries interaction

To impart real life problem solving skills.

Department Vision

To instill technical skills among students through excellence in education and develop them as computer professionals for forth coming challenges with moral values, environmental and societal consciousness.

Department Mission

To impart quality education for developing technical skills.

To create awareness on emerging trends and technologies.

To cultivate a sense of social responsibility with ethical and strong moral values.

Inside the Issue

Computer Faculties

Under the leadership of

Shri H.R Parmar

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Ms. A.I Rangrej
Ms. N.R.Sheth
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Mr. S.A. Gohel
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Ms. Z.R.Shah
Ms. C.J.Vaghela
Mr. D.M. Gohil

Technical Articles

AI News Anchors

India Today Group's Vice Chairperson Kalli Purie has launched Aaj Tak's first bot AI collaborative anchor Sana during India Today Conclave 2023.

Describing Sana, **Purie** said, *"She is bright, gorgeous, ageless, tireless, speaks in multiple languages and totally under my control."*

Sana will bring daily news updates several times a day in multiple languages, next week onwards. In a new show, she will explain one topic of relevance everyday. Sana will also do a show in which the audience can ask questions and she will answer.

Talking about constant innovation, Purie said, "*Sana does not take away from the brilliance of real life anchors, who will be mentoring her. Sana will have a human surrogate editor and hopefully company soon."*

Purie said that it is not a competition between humans and AI and that this collaboration is leading to creative magic. *"The future is fascinating and frightening and it is here,"* she said.

AI news anchors are virtual news presenters that are created using artificial intelligence technology. These anchors function by using machine learning algorithms to analyze and process vast amounts of data, including news stories, text, images, and videos.

AI news anchors use natural language processing (NLP) algorithms to convert written text into spoken words, which are then synthesized by a text-to-speech engine. They can also use computer vision technology to generate lifelike visuals, such as virtual avatars, to enhance the viewer's experience.

Once programmed with news scripts and relevant information, AI news anchors can deliver news broadcasts in real-time. They can deliver news stories 24/7, and are not limited by factors that affect human presenters, such as fatigue or time constraints.

AI news anchors can also learn and improve over time through machine learning algorithms. As they receive feedback and input from their audience, they can adjust their style and delivery to better connect with viewers.

Technical Articles

news content in a fast and efficient manner. They are a cutting-edge technology that is rapidly evolving and changing the landscape of journalism and media.

There have been several instances of AI news anchors in recent years. One notable example is the AI news anchor created by Chinese news agency Xinhua, which was unveiled in 2018. The AI anchor is designed to mimic the appearance and voice of a real human news anchor, and is able to read news reports in a natural-sounding voice.

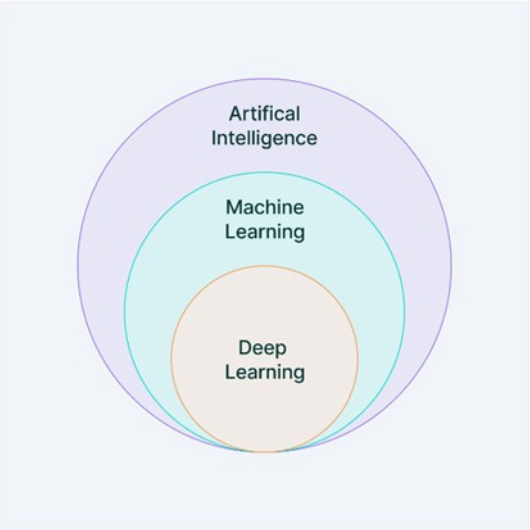
Other companies and organizations have also developed AI news anchors, including South Korean broadcaster KBS, which launched an AI anchor in 2020. The AI anchor is able to read news reports in both Korean and English, and is designed to provide a more personalized news experience for viewers.

While AI news anchors can provide certain benefits, such as 24/7 availability and the ability to quickly generate news reports, there are also concerns about their potential impact on the journalism industry and the role of human reporters. Some critics argue that AI news anchors could lead to job losses for human journalists, while others raise concerns about the potential for biased or inaccurate reporting generated by AI algorithms.

Rawal Dhruvi

(Sem 1 - 226140307___)

Deep Learning



Deep Learning is a subset of Machine Learning that uses mathematical functions to map the input to the output. These functions can extract non-redundant information or patterns from the data, which enables them to form a relationship between the input and the output.
In traditional computer programming, input and a set of rules are combined together to get the desired output. In machine learning and deep learning, input and output are correlated to the rules.
These rules—when combined with new input—yield desired results.

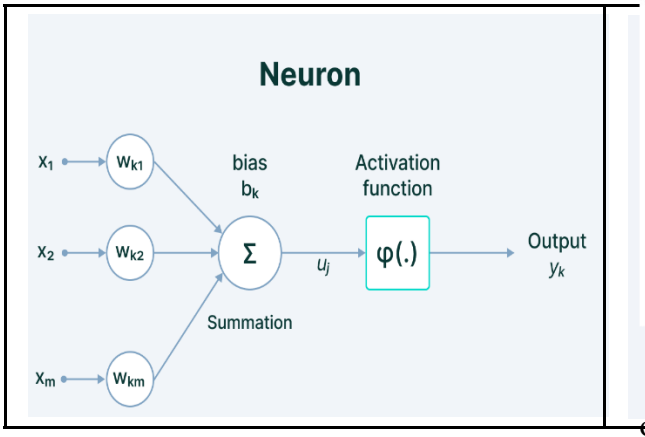
Neural Networks

The neural network is the heart of deep learning models, and it was initially designed to mimic the working of the neurons in the human brain.

How does Deep Learning work?

Deep Neural Networks have multiple layers of interconnected artificial neurons or nodes that are

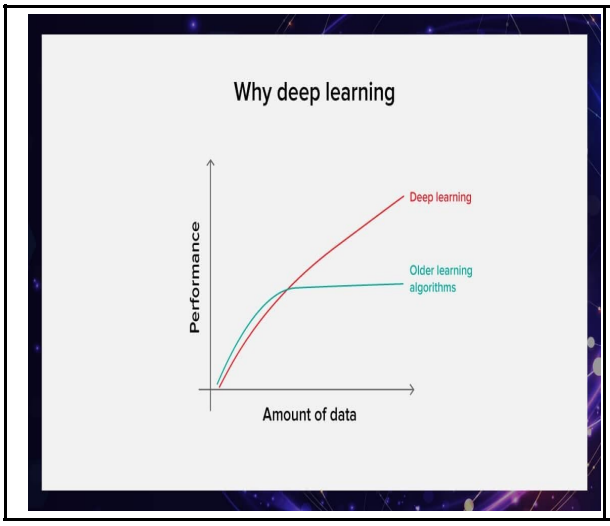
stacked together. Each of these nodes has a simple mathematical function—usually a linear function that performs extraction and mapping of information.

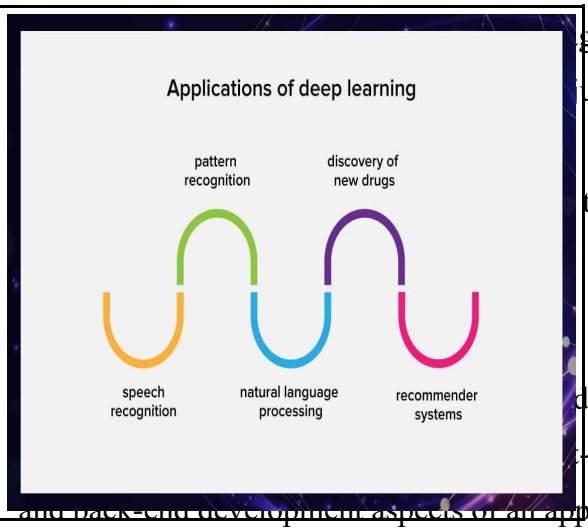


Why deep learning?

Deep learning extremely powerful when the dataset is large.

It can learn any complex patterns from the data and can draw accurate conclusions on its own. In fact, deep learning is so powerful that it can even process unstructured data—data that is not adequately arranged like text corpus, social media activity, etc.





Shah Jiya

(2161403070——)

Do you want to be a Full Stack developer?

of a Full Stack developer has gained immense popularity over the past few years. As the name suggests, a Full Stack developer is someone who can develop applications that are complete from top to bottom, meaning they have the skills to handle both the front-end and back-end development aspects of an application.

In essence, a Full Stack developer is someone who has a wide range of skills and knowledge in

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and back-end development aspects of an application. This means that you need to have knowl-

edge of programming languages like JavaScript, HTML, CSS, and frameworks like Angular, React, Vue.js, etc. Additionally, you must have expertise in programming languages such as Java, Python, PHP, Ruby, or Node.js, along with databases like MySQL, MongoDB, and PostgreSQL.

Moreover, you must have knowledge of web development principles, such as serverless architecture, cloud computing, APIs, and web services. You should also have experience in testing, debugging, and deploying web applications. Finally, excellent communication and problem-solving skills are a must for a Full Stack developer.

The Role of a Full Stack Developer

The role of a Full Stack developer can vary depending on the company and the project they are working on. However, some common responsibilities include:

Developing the front-end of web applications: A Full Stack developer can design and develop the user interface of web applications using HTML, CSS, and JavaScript. They can also use popular front-end frameworks like React or Angular to create dynamic and responsive web pages.

Developing the back-end of web applications: A Full Stack developer can develop the server-side code of web applications using languages like Java, Python, or Node.js. They can also use popular back-end frameworks like Express or Spring to build robust and scalable back-end systems.

Database design and development: A Full Stack developer can design and develop databases for web applications using SQL or NoSQL databases like MySQL, MongoDB, or PostgreSQL. They can also use ORM frameworks like Hibernate or Sequelize to simplify database operations.

Testing and Debugging: A Full Stack developer can test and debug web applications to ensure that they are free of errors and function correctly.

Deployment: A Full Stack developer can deploy web applications on cloud platforms like Amazon Web Services or Microsoft Azure.

Conclusion

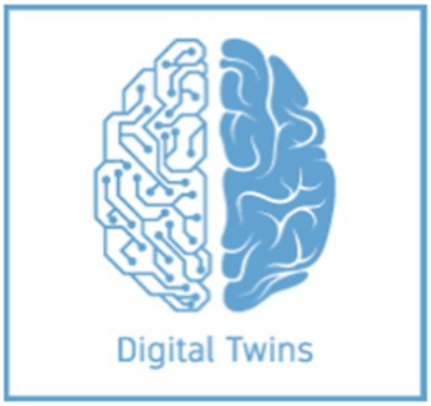
In conclusion, Full Stack developers are highly skilled professionals who can handle all aspects of web development. They have a wide range of skills and knowledge in multiple programming languages, frameworks, and technologies, making them valuable assets to any development team. If you're interested in becoming a Full Stack developer, it's essential to have a good understanding of both front-end and back-end development and to continuously learn new

technologies and frameworks to stay up-to-date with the latest trends in web development.

Shah Riya

(Sem 5, 206140307012)

Digital Twins



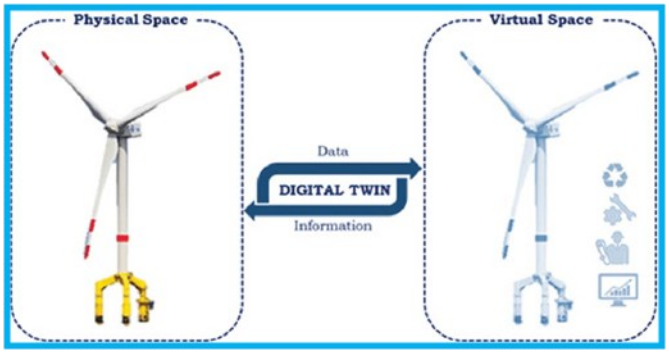
Digital Twins are virtual representations of physical objects or systems that enable real-time monitoring, analysis, and optimization of their performance. The concept of Digital Twins originated in the field of manufacturing, where it was used to simulate and optimize the performance of complex machines and systems.

Today, Digital Twins have found applications in a wide range of industries, including IT. In the IT organization, Digital Twins can be used to simulate and optimize IT processes such as network operations and application development.

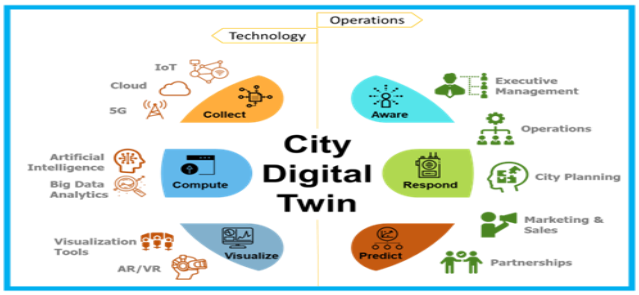
For example, a Digital Twin of a network can be created to simulate the behavior of the actual network, allowing IT teams to test and optimize different network configurations, troubleshoot problems, and identify potential issues before they occur. Similarly, a Digital Twin of an application can be used to simulate its behavior under different loads and conditions, helping developers to identify and fix performance issues before the application is deployed.

Here are some real-life examples of digital twins:

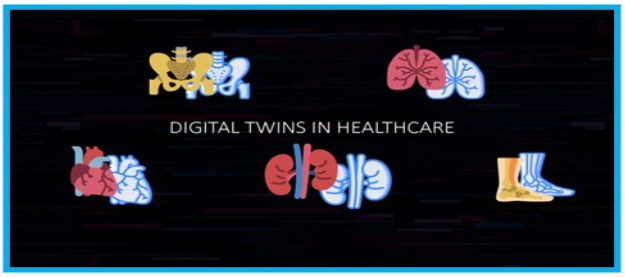
Wind Turbines: Wind farms use digital twins to simulate the behavior of their turbines in real-time. These digital models take into account environmental factors, such as wind speed and direction, and allow operators to predict potential issues and optimize performance.



Smart Cities: Digital twins can be used to model entire cities, allowing city planners to optimize traffic flow, reduce energy consumption, and improve overall livability.

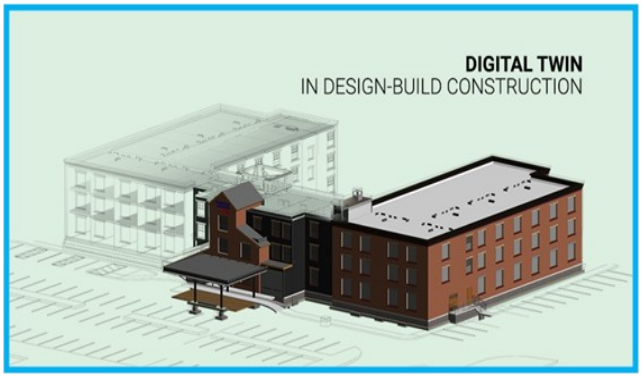


Healthcare: Digital twins can be used to create personalized models of patients, allowing doctors to simulate treatments and predict outcomes.

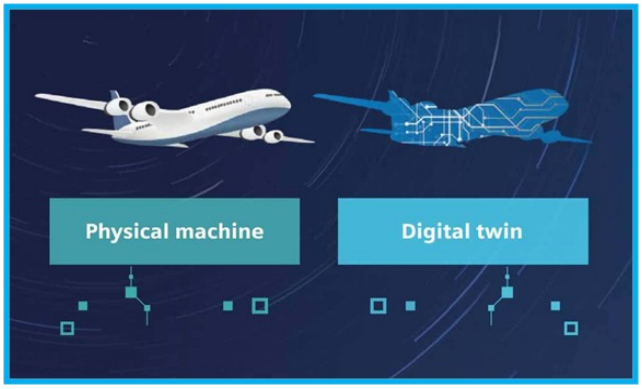


Technical Articles

Construction: Construction companies can use digital twins to simulate building designs and optimize construction processes, reducing costs and improving efficiency.

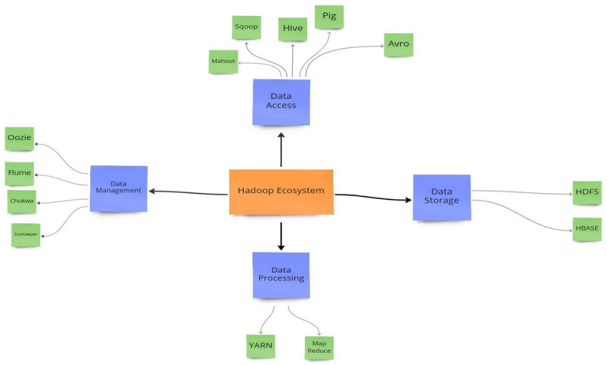


Aerospace: Digital twins are used to simulate the behavior of aircraft engines, allowing airlines to predict maintenance needs and reduce downtime.



Thakkar Mansi (206140307021, Sem 6)

HADOOP ECHOSYSTEM



Hadoop Ecosystem:

Data processing of a large dataset and distributed computing are both addressed by the open- source ecosystem known as Hadoop Ecosystem. It is maintained by the Apache Software Foundation and has several different parts, including MapReduce and HDFS. For a Hadoop implementation to be effective, these elements are crucial and are discussed below:

Hadoop Distributed File System: A distributed file system called HDFS is made to run on groups of inexpensive machines and is intended to store a lot of data. It is robust to cluster faults and optimized for read-intensive workloads. Applications that require large-scale data storage and sequential reads can benefit from the filesystem API of HDFS since it enables data to be written once and read numerous time.

MapReduce: Applications for Hadoop are created using the MapReduce programming framework. It is made up of Java functions referred to as mappers and reducers. A reducer takes the output of the mappers and aggregates the results, whereas a mapper takes a piece of data and constructs name-value pairs. A traditional approach to illustrate the MapReduce architecture is using the Wordcount example. Each word is given a name-value pair by the mapper, and the reducer adds the output of the mappers to produce a sorted list of the words in the document.

Apaara Mehta(216140307070, Semester 6)

Outstanding Students
GTU Exam Winter 2021 (Sem 1,3 ,5) & Summer 2022 (Sem 2,4,6)

1st SEMESTER

SPI OUT OF 10

226140307086	PATEL ANSHU GAURANGKUMAR	9.48
226140307116	RAVAL DHRUVI NITINKUMAR	9.19
226140307058	MANIYA NIDHIBEN MAHESHBHAI	9.14

2nd SEMESTER

SPI OUT OF 10

226140307086	PATEL ANSHU GAURANGKUMAR	10
226140307063	MEWADA RIYA DINESH	10
226140307014	CHAURASIYA RINKUKUMARI SANTRAM	9.7
226140307103	PATEL YATRI MANISHBHAI	9.7

3rd SEMESTER

SPI OUT OF 10

216140307051	VALANI KRISHA SANJAYBHAI	10
216140307066	PATEL KRISHA MANISHBHAI	10
216140307028	MAKVANA NIRALI H	9.95

4th SEMESTER

SPI 10 OUT OF 10

216140307055	BHANUSHALI PRIYANSHI K	10
216140307065	BHURIYA JANVI RAMESHBHAI	9.9
216140307053	Patel Khiloni Manishbhai	9.62

5th SEMESTER

SPI OUT OF 10

206140307008	KIKANI HELY NILESHBHAI	10
206140307006	PATEL POOJA HARSHAD	10
206140307051	Maurya Shruti Jagdish	10
206140307114	SHAIKH SADIYAH ABDULLAH	10
206140307029	DETROJA HELIBEN DHAN-RAJBHAI	10
206140307079	PATEL HELLY DIPAKBHAI	10
206140307021	THAKKAR MANSI BHAVESHKU-MAR	10
206140307070	MEHTA APAARA HEMENDRA	10
206140307049	THAKKAR ASMI CHIRAG	10

6th SEMESTER

SPI OUT OF 10

206140307008	KIKANI HELY NILESHBHAI	10
206140307051	Maurya Shruti Jagdish	10
206140307029	DETROJA HELIBEN DHAN-RAJBHAI	10
206140307021	THAKKAR MANSI BHAVESHKU-MAR	10
206140307070	MEHTA APAARA HEMENDRA	10
206140307049	THAKKAR ASMI CHIRAG	10

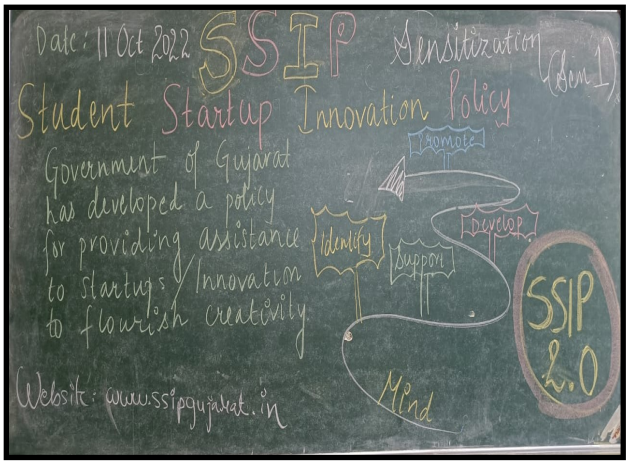
Events @ Department

Techotsav 2023

Events @ Department

Sr. No	Title	Company
1	Seminar on PHP Laravel	Tops Technologies
2	Getting Started With Internet of Things	INFOLABZ IT SERVICESPVT. LTD.
3	Expert Lecture on Emerging Trends and Technologies	INFOLABZ IT SERVICESPVT. LTD.
4	Seminar on Robotics & Automation	GTU Robotics Club
5	Seminar on Web Technology & Automation Technology	Way to Web
6	Workshop on Advance Python	Way to Web
7	SSIP 2.0 Sensitization	SSIP GTU TEAM
8	Basics of Computer Networking	IANT
9	Workshop on Python	INFOLABZ IT SERVICESPVT. LTD.

SSIP 2.0 SENSITIZATION



Event Photos

Workshop on Getting Started With Internet of Things

Seminar on Robotics & Automation

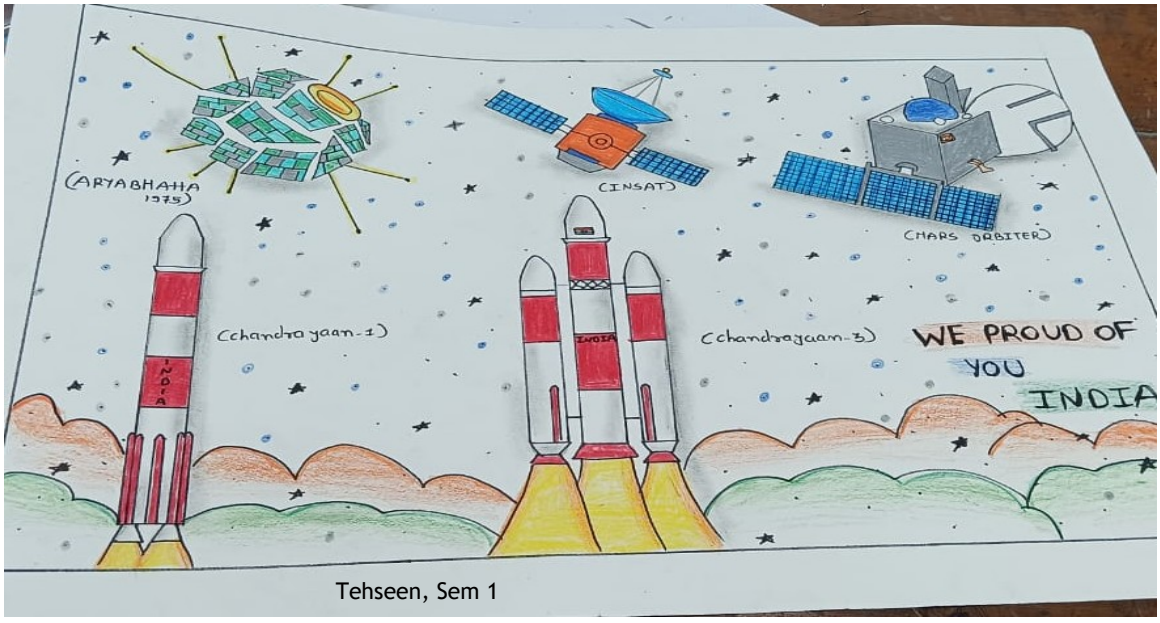
Students Achievement

Riya Shah of Sem 4 obtained a certificate from John Hopkins University for competing a course on Psychological First Aid.

One Student Kikani Helly secured ranks among top 10 students in various GTU exams.

		SPI	Remarks
206140307008	KIKANI HELY NILESHBHAI	10	4th Rank in Computer Branch GTU Top 10 in Summer 2023
206140307008	KIKANI HELY NILESHBHAI	10	8th Rank in All Branch GTU Top 10 in Summer 2023
206140307008	KIKANI HELY NILESHBHAI	10	10th Rank in All Branch GTU Top 10 in Winter 2022
206140307008	KIKANI HELY NILESHBHAI	10	6th Rank in Computer Branch GTU Top 10 in Winter 2022

Students Creativity Corner



Tehseen, Sem 1

Students Creativity Corner

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Ahmedabad.

Contact for Queries and Suggestions

Email - gpg.computer@gmail.com

Under

The Commissionerate Of Technical Education

Education Department

Government Of Gujarat

Affiliated with Gujarat Technological University

Ahmedabad

A Newsletter Of The Department Of Computer Engineering at The Government Polytechnic for Girls

Ahmedabad

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