INSPERIA
THE NEWS BULLETIN

Sakeshwar Gramin Vikas Seva Sanstha's
Adsul's Technical Campus ,
Ahmednagar
Department of Computer Engineering

Shri Aniruddha Adsul
Chairman

Dr. P.M .Patil
Principal

Dr. H.B. Jadhav
Head of Department

Vision of Institute
To be a most preferred Rural Technical Campus in the region by creating competent multifaceted Engineers and Professionals ready to serve the industry and society at large.

Mission of Institute
To establish state-of-the-art facilities and create a conducive environment for transforming the rural minds into competent, skilled, professional, researchers, technically sound, innovative aptitude, and ethics through value-based education to develop the nation for global competitiveness.

Objectives of Institute
- To provide quality education with futuristic trends in engineering and technology
- To ensure continual improvement in quality management system
- To impart innovative teaching and learning

Vision of Department
To strive for excellence in the field of Computer engineering through creative problem solving related to societal needs.

Mission of Department
M1. Establish strong fundamentals, domain knowledge and skills among the students with analytical thinking, conceptual knowledge, social awareness, expertise in the latest tools and awareness to advanced software.

M2. Establish leadership skills, team spirit and high ethical values among the students

M3. Guide students towards research and development, and a willingness to learn by connecting themselves to the global society

M4. Encourage students to become free-lancers.

Silent feature of Department

- **Supportive learning for placement:** Placement learning is immersive and iterative. Support in the form of formative tasks and activities are crucial for student success, whilst being mindful of the need to ensure parity of student workload between modules of the same credit weighting. Placement assistance can offer students professional guidance and support to help them build successful careers. Students who might feel overburdened by the job search process might greatly benefit from placement assistance services.
- **Value added courses:** Value Added courses are career and market oriented, skill-enhancing courses that empower the students beyond their domain of study. The certificate programmes enable them to enrich their capability and enhance their employability. Value added courses are conducted for one week during the semester breaks by department faculty and external trainers.
- **Career oriented Add-On Courses:** Job-oriented courses are training and academic courses that prepare professionals for a particular career field or role. A traditional academic course may provide an overview of a certain topic or area, but a job-oriented course focuses on the knowledge and skills required for a particular job.
- **Teacher as Mentor:** The role of the Mentor Teacher is a complex blend of modelling, coaching, instructing, collaborating, and encouraging as candidates build competency in program standards. Mentor Teachers are expected to support candidates in developing the skills and knowledge to meet these standards.
- **Report writing and Paper Presentation:** A report is a specific form of writing, written concisely and clearly and typically organised around identifying and examining issues, events, or findings from a research investigation. Reports often involve investigating and analysing a problem and coming up with a solution.
- **Professional Development for Industrial Engagement:** There are three types of employee engagement: **cognitive**, **emotional**, and **physical**. When employees are cognitively engaged, they're committed to their job, when they're physically engaged, they're invested in their work, and when they're emotionally engaged, they have an emotional connection to their work.
- **Personality Development and Soft Skill Training:** Personality Development teaches us how to communicate and display ourselves as having caring skills. It also emphasizes personal management, grooming, health, and nutrition, as well as soft skills. This course educates students on the numerous aspects of self-development. Soft skills comprise pleasant and appealing personality traits as self-confidence, positive attitude, emotional intelligence, social grace, flexibility, friendliness and effective communication skills. INTENDED AUDIENCE: Students, Teachers, Professionals, Trainers, Leaders, and Employers.

Program Educational Objectives (PEOs)

PEO1: To prepare globally competent graduates having strong fundamentals, domain knowledge, updated with modern technology to provide the effective solutions for engineering problems.

PEO2: To prepare the graduates to work as a committed professionals with strong professional ethics and values, sense of responsibilities, understanding of legal, safety, health, societal, cultural and environmental issues.

PEO3: To prepare committed and motivated graduates with research attitude, lifelong.

PEO4: To prepare the graduates with strong managerial and communication skills to work effectively as individual as well as in teams.

Program Outcomes (POs)

PO-1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering Programs.

PO-2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO-4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO-6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO-9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO-10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO-12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1: Professional Skills: The ability to apply knowledge of problem solving, algorithmic analysis, software Engineering, Data Structures, Networking, Database with modern recent trends to provide the effective solutions for Computer Engineering Problems.

PSO2: Problem-Solving Skills: The ability to inculcate best practices of software and hardware design for delivering quality products useful for the society.

PSO3: Successful Career: The ability to employ modern computer languages, environments, and platforms in creating innovative career paths.

Events

Rangoli Competition

Rangoli is a form of folk art that originated in the Indian subcontinent. A rangoli may be symmetrical and consist of bright colours, intricate patterns and motifs. They are commonly created around Diwali, an important Hindu religious holiday that celebrates the victory of light over darkness.

The competition develops art & creativity among students. It also gives happiness & joy to Students in their academics. These competitions help students to remain in close touch with their Culture. To enhance students' creativity in art and providing place of competition to encourage Student's ability, hence the Department of Computer Engineering organized Rangoli Competition.

- To encourage students to enhance their skills in Rangoli design.
- To enhance the creativity & imagination in the field of art.
- To boost their confidence in the art.
- To encourage students to take active part in co-curricular activities.

Rangoli is a traditional form that brightens up an occasion and is believed to be harbinger of good luck. Beautiful patterns are created on the floor using coloured rice, flowers, coloured sand or paints. In order to develop skills of aesthetics, creativity and innovation among the students, a 'Rangoli Competition' was conducted on **14th September 2023**. The criterion for judgment was the selection of the design, neatness, clarity, color combination and creativity or new ideas implemented by the students to make their design more presentable.

The competition was held for the students of classes FE/SE/TE/BE. The students had pre-planned their patterns and had come prepared with all the materials, they required for making them. The competition was held in two categories.. The students put their best foot forward and took part in the competition with zest. Innovation and creation are the words that best describe their efforts. The Rangoli Competition motivated the students to perform and outshine in their creative skills and most importantly, their teamwork brought laurels to their house.

Ganesh Festival Celebration

Ganesh Chaturthi, the festival celebrating the birth of Lord Ganesha, was observed at Adsul's Technical Campus with great devotion and enthusiasm. The entire college community, including students and staff, came together to participate in various rituals and festivities during this auspicious occasion.

The celebration began with a ceremonial puja that was initiated by our respected Principal. This marked the commencement of a spiritually significant day. The puja was conducted with traditional rituals, including the lighting of the lamp, Vedic chants, and offerings to Lord Ganesha's idol. Principal's presence added a sense of solemnity and reverence to the event.

After the puja, all students and staff members gathered to perform the 'Anjali' ritual. With folded hands and heartfelt prayers, they offered their respects and sought the blessings of Lord Ganesha. This moment of devotion allowed everyone to connect with the essence of the festival. Following the 'Anjali' ritual, 'Prasad' was distributed to all present. Sweets and fruits were shared among the attendees, symbolizing the blessings and benevolence of Lord Ganesha. This act of sharing fostered unity and a sense of community.

Lord Ganesha's idol graced our campus for a five-day stay, which allowed students and staff to continue seeking His blessings. Every morning at 9:30 AM, an 'Anjali' ceremony was conducted, where members of the college community came together to pay their respects and offer prayers to the deity.

The culmination of the Ganesh Chaturthi celebration was the 'Bisarjan' or immersion ceremony, which took place on September 19th. This ritual symbolized the return of Lord Ganesha to His celestial abode. The entire college community participated in the procession, joyfully dancing and singing hymns to bid farewell to the deity.

Fresher’s Party Program

The purpose of Fresher’s Party is to welcome new students in a friendly atmosphere and to encourage their creative impulses to boost their confidence. It is the day where seniors and juniors finally bond and unite to celebrate being part of the college. Students of First Year (batch: 2023-24) students were welcomed with the red rose to this party which was organized by Association of Computer Engineer’s in the Seminar hall at 10:00 AM on 18th Oct. 2023. The program started with lamp lightening and inaugural speech by Honorable Principal, Dr. Patil P. M and followed by the President’s speech for the freshers. The program was hosted by Mr. Arbaz Shaikh, student from Third Year Department of Computer Engineering. The cake was cut by the Principal, the HOD of all departments, President, and the Vice-President of the each fresher’s batch.

Fresher’s along with their seniors got chance to showcase their talent by a stunning Ramp walk. Later small games were organized to make the function more tricky and fun! Talking about the ramp walk, it was conducted in two rounds. In the Round 1- the participants walked on the ramp and gave poses towards the audiences.

The audiences enjoyed the fashion show and they encouraged the participants by making hooding sounds. Later in the Round 2- the shortlisted participants walked again on the ramp and they were asked to stand in the line followed by the questioning session based on which the Mr. and Ms. Freshers were finalized. There was a tough competition among the fresher’s as they all were amazing. Mr. Jaware A.R & Miss. Bhabad V.R were chosen as the Mr. and Miss Fresher, respectively.

The event was finally concluded with vote of thanks by Vishakha Rathod, Joint Secretary. Refreshments were served in after the program.

Tree Plantation

On 6th August, 2023, Department of Computer Engineering, Adsul's Technical Campus, Ahmednagar successfully completed the event of Tree Plantation . Trees are the foremost source for producing the oxygen in environment, they helps to reduce the level of CO_2 . As we all know that the whole world is facing the problem of global warming and to recover from such problem planting the trees is become one of the most important aspects today.

The event was began with the welcoming of guest Honorable Mr. Anirudha Adsul, Chairman, SGVSS, respected Principal, Dr. P. M. Patil. Welcome speech has been given by the head of the department Dr. H. B. Jadhav. At that time Principal advice to volunteers to think differently for the Society to make positive changes and to make improvement. After that department Volunteers sung a song followed by the felicitation of guest. Dr. H. B. Jadhav orients the students by notifying the importance of tree plantation for them as well as society. He shared his past experiences with students that how he got the success and what difficulties he faced while performing his role as teacher.

He said that "In society all he human beings are comprise equal importance, no matter with the Men or Women." He also said that the dedication is must to accomplish the goals and dreams in life. Ms. Yogita Suryawanshi also address the students and passed a message of kindness & being helpful to the needy people. After the inspirational words of guests and Principal we all move towards the place where tree plantation took place.

A very first tree plant by Dr. P. M. Patil, Principal in college campus. Total tree planted by all others including teachers, students was more than 15 on the day. All were happy and experience proud after the tree plantation event was finished, because it really feels great to do positive for the nature.

TREES ARE THE ROOT OF OUR EXISTENCE

Articles by Students

What is Industry 4.0?

Industry 4.0, which is synonymous with smart manufacturing, is the realization of the digital transformation of the field, delivering real-time decision making, enhanced productivity, flexibility and agility to revolutionize the way companies manufacture, improve and distribute their products.

How Industry 4.0 technologies are changing manufacturing

Manufacturers are integrating new technologies, including Internet of Things (IoT), cloud computing and analytics, and AI and machine learning into their production facilities and throughout their operations.

Smart factories are equipped with advanced sensors, embedded software and robotics that collect and analyze data and allow for better decision making. Even higher value is created when data from production operations is combined with operational data from ERP, supply chain, customer service and other enterprise systems to create whole new levels of visibility and insight from previously siloed information.

These digital technologies lead to increased automation, predictive maintenance, self-optimization of process improvements and, above all, a new level of efficiencies and responsiveness to customers not previously possible.

Developing smart factories provides an incredible opportunity for the manufacturing industry to enter the fourth industrial revolution. Analyzing the large amounts of big data collected from sensors on the factory floor ensures real-time visibility of manufacturing assets and can provide tools for performing predictive maintenance in order to minimize equipment downtime.

Using high-tech IoT devices in smart factories lead to higher productivity and improved quality. Replacing manual inspection business models with AI-powered visual insights reduces manufacturing errors and saves money and time. With minimal investment, quality control personnel can set up a smartphone connected to the cloud to monitor manufacturing processes from anywhere. By applying machine learning algorithms, manufacturers can detect errors immediately, rather than at later stages when repair work is more expensive.

Industry 4.0 concepts and technologies can be applied across all types of industrial companies, including discrete and process manufacturing, as well as oil and gas, mining and other industrial segments.

From steam to sensor: historical context for Industry 4.0

First industrial revolution

Starting in the late 18th century in Britain, the first industrial revolution helped enable mass production by using water and steam power instead of purely human and animal power. Finished goods were built with machines rather than painstakingly produced by hand.

Second industrial revolution

A century later, the second industrial revolution introduced assembly lines and the use of oil, gas and electric power. These new power sources, along with more advanced communications via telephone and telegraph, brought mass production and some degree of automation to manufacturing processes.

Third industrial revolution

The third industrial revolution, which began in the middle of the 20th century, added computers, advanced telecommunications and data analysis to manufacturing processes. The digitization of factories began by embedding programmable logic controllers (PLCs) into machinery to help automate some processes and collect and share data.

Fourth industrial revolution

We are now in the fourth industrial revolution, also referred to as Industry 4.0. Characterized by increasing automation and the employment of smart machines and smart factories, informed data helps to produce goods more efficiently and productively across the value chain. Flexibility is improved so that manufacturers can better meet customer demands using mass customization—ultimately seeking to achieve efficiency with, in many cases, a lot size of one. By transparency and better decisions.

Dhiraj Ahire
Second Year 23-24

Cloud Storage

Cloud storage is a cloud computing service in which data and files are stored offsite by a third-party provider and can be accessed through a public internet or dedicated private network connection. The cloud service provider (CSP) hosts, secures, manages and maintains the servers associated with cloud infrastructure and helps ensure that users can access the data whenever needed. The customer is responsible for securing data, applications and workloads deployed within the cloud.

Cloud storage delivers a cost-effective, scalable alternative to storing files on premises (or offline) on hard disk drives or storage networks. Computer hard disk drives can only store a finite amount of data. When users run out of storage, they need to transfer files to an external storage device. Traditionally, organizations built and maintained storage area networks (SANs) to archive data and files. However, SANs are expensive to maintain because as stored data grows, companies must invest in adding physical servers and other IT infrastructure to accommodate increased demand.

Cloud storage services provide elasticity, which allows users to scale capacity as data volumes increase or dial down capacity, if necessary. By storing data in the cloud, organizations can save by paying for storage technology and capacity as a service rather than investing in the capital costs of building and maintaining in-house storage networks. With cloud storage, you only pay for exactly the capacity you use. While your costs might increase over time to account for higher data volumes, you don't have to overprovision storage networks in anticipation of increased data volume. The COVID-19 pandemic led to a massive increase in cloud storage as businesses sought ways to support the remote workforce. A 2023 report from Fortune Market Insights details the global cloud storage market value at USD 108.69 billion.1 The study projects this market to grow from USD 132.03 billion in 2024 to USD 665 billion by 2032, with a CAGR of 22.4% during the forecast period.

How does cloud storage work?

Like on-premises storage networks, cloud storage uses servers to save data; however, the data is sent to servers offsite. Most of these servers are virtual machines (VMs) hosted on a physical server. As storage needs increase, the provider creates new virtual servers to meet demand.

Users connect to a storage cloud either through the internet or a dedicated private connection by using a web portal, website or mobile app that communicates through an application programming interface (API). The connecting server forwards data to a pool of servers located in one or more data centers, depending on the size of the cloud provider's operation. As part of the service, providers store the same data on multiple machines for redundancy. This way, users can still access data if a server is taken down for maintenance or suffers an outage.

Cloud storage is available in the following environments:

- Private cloud
- Public cloud

Public cloud storage

A public cloud model allows you to connect over the internet to storage space maintained by a cloud provider and used by other companies. Providers make these services accessible from any device (for example, smartphones, desktops) and let you scale up and down as needed.

Private cloud storage

Private cloud storage setups replicate the cloud model, but they reside within your network, using a physical server to create instances of virtual servers to increase capacity.You can choose to take full control of an on-premises private cloud or engage a cloud storage provider to build a dedicated private cloud that can be accessed with a private connection. Organizations like finance and healthcare often opt for private cloud data storage to exercise greater control over confidential client information.

Avinash Chavan
Third Year 23-24

Blockchain Technology

Over the past few years, you have consistently heard the term ‘blockchain technology,’ probably regarding cryptocurrencies, like Bitcoin. In fact, you may be asking yourself, “what is blockchain technology?” It seems like blockchain is a platitude but in a hypothetical sense, as there is no real meaning that the layman can understand easily. It is imperative to answer “what is blockchain technology, “including the technology that is used, how it works, and how it’s becoming vital in the digital world.

As blockchain continues to grow and become more user-friendly, the onus is on you to learn this evolving technology to prepare for the future. If you are new to blockchain, then this is the right platform to gain solid foundational knowledge. In this article, you learn how to answer the question, “what is blockchain technology?” You’ll also learn how blockchain works, why it’s important, and how you can use this field to advance your career.

What Is Blockchain Technology?

Blockchain is a method of recording information that makes it impossible or difficult for the system to be changed, hacked, or manipulated. A blockchain is a distributed ledger that duplicates and distributes transactions across the network of computers participating in the blockchain.

Blockchain technology is a structure that stores transactional records, also known as the block, of the public in several databases, known as the “chain,” in a network connected through peer-to-peer nodes. Typically, this storage is referred to as a ‘digital ledger.’Every transaction in this ledger is authorized by the digital signature of the owner, which authenticates the transaction and safeguards it from tampering. Hence, the information the digital ledger contains is highly secure.

In simpler words, the digital ledger is like a Google spreadsheet shared among numerous computers in a network, in which, the transactional records are stored based on actual purchases. The fascinating angle is that anybody can see the data, but they can’t corrupt it.

Dive into the transformative world of blockchain technology with our intensive Cyber security Bootcamp. Uncover the revolutionary potential of blockchain while honing your skills in safeguarding these decentralized systems. From understanding the intricacies of smart contracts to fortifying digital transactions, this bootcamp equips you to navigate the evolving landscape of cybersecurity within the blockchain domain. Don't miss this opportunity to become a proficient cybersecurity professional in the realm of blockchain.

Why is Blockchain Popular?

Suppose you are transferring money to your family or friends from your bank account. You would log in to online banking and transfer the amount to the other person using their account number. When the transaction is done, your bank updates the transaction records. It seems simple enough, right? There is a potential issue which most of us neglect. These types of transactions can be tampered with very quickly. People who are familiar with this truth are often wary of using these types of transactions, hence the evolution of third-party payment applications in recent years. But this vulnerability is essentially why Blockchain technology was created. Technologically, Blockchain is a digital ledger that is gaining a lot of attention and traction recently. But why has it become so popular? Well, let’s dig into it to fathom the whole concept.Record keeping of data and transactions are a crucial part of the business. Often, this information is handled in house or passed through a third party like brokers, bankers, or lawyers increasing time, cost, or both on the business. Fortunately, Blockchain avoids this long process and facilitates the faster movement of the transaction, thereby saving both time and money.

Most people assume Blockchain and Bitcoin can be used interchangeably, but in reality, that’s not the case. Blockchain is the technology capable of supporting various applications related to multiple industries like finance, supply chain, manufacturing, etc., but Bitcoin is a currency that relies on Blockchain technology to be secure.

Blockchain is an emerging technology with many advantages in an increasingly digital world:

Sakshi Thombare
Third Year 23-24

Srinivasa Ramanujan

Srinivasa Ramanujan (born December 22, 1887, Erode, India—died April 26, 1920, Kumbakonam) was an Indian mathematician whose contributions to the theory of numbers include pioneering discoveries of the properties of the partition function.

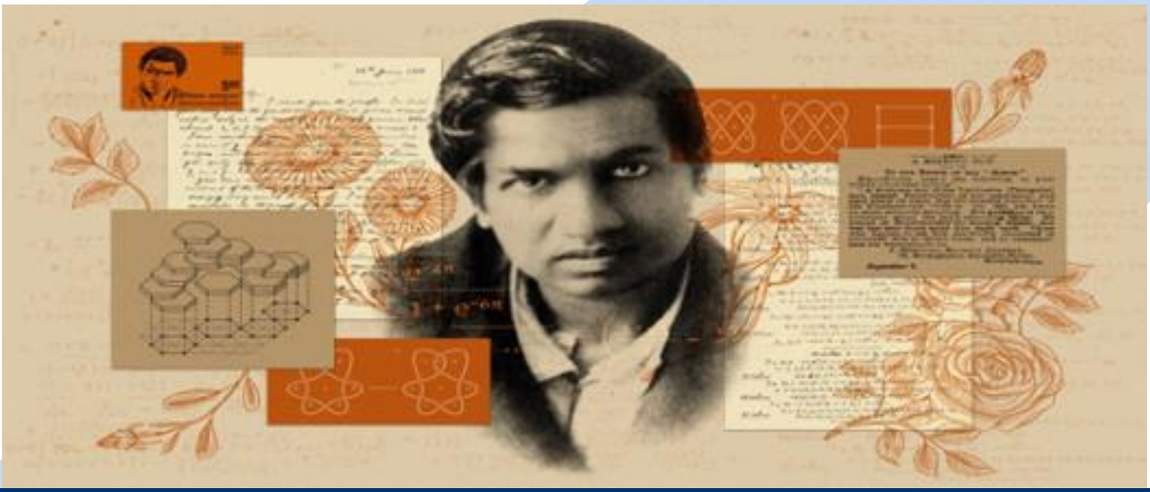
When he was 15 years old, he obtained a copy of George Shoobridge Carr's Synopsis of Elementary Results in Pure and Applied Mathematics, 2 vol. (1880–86). This collection of thousands of theorems, many presented with only the briefest of proofs and with no material newer than 1860, aroused his genius. Having verified the results in Carr's book, Ramanujan went beyond it, developing his own theorems and ideas. In 1903 he secured a scholarship to the University of Madras but lost it the following year because he neglected all other studies in pursuit of mathematics.

Ramanujan continued his work, without employment and living in the poorest circumstances. After marrying in 1909 he began a search for permanent employment that culminated in an interview with a government official, Ramachandra Rao. Impressed by Ramanujan's mathematical prowess, Rao supported his research for a time, but Ramanujan, unwilling to exist on charity, obtained a clerical post with the Madras Port Trust.

In 1911 Ramanujan published the first of his papers in the Journal of the Indian Mathematical Society. His genius slowly gained recognition, and in 1913 he began a correspondence with the British mathematician Godfrey H. Hardy that led to a special scholarship from the University of Madras and a grant from Trinity College, Cambridge. Overcoming his religious objections, Ramanujan traveled to England in 1914, where Hardy tutored him and collaborated with him in some research.

Ramanujan's knowledge of mathematics (most of which he had worked out for himself) was startling. Although he was almost completely unaware of modern developments in mathematics, his mastery of continued fractions was unequaled by any living mathematician. He worked out the Riemann series, the elliptic integrals, hypergeometric series, the functional equations of the zeta function, and his own theory of divergent series, in which he found a value for the sum of such series using a technique he invented that came to be called Ramanujan summation. On the other hand, he knew nothing of doubly periodic functions, the classical theory of quadratic forms, or Cauchy's theorem, and he had only the most nebulous idea of what constitutes a mathematical proof. Though brilliant, many of his theorems on the theory of prime numbers were wrong.

In England Ramanujan made further advances, especially in the partition of numbers (the number of ways that a positive integer can be expressed as the sum of positive integers; e.g., 4 can be expressed as 4, 3 + 1, 2 + 2, 2 + 1 + 1, and 1 + 1 + 1 + 1). His papers were published in English and European journals, and in 1918 he was elected to the Royal Society of London. In 1917 Ramanujan had contracted tuberculosis, but his condition improved sufficiently for him to return to India in 1919. He died the following year, generally unknown to the world at large but recognized by mathematicians as a phenomenal genius, without peer since Leonhard Euler (1707–83) and Carl Jacobi (1804–51). Ramanujan left behind three notebooks and a sheaf of pages (also called the "lost notebook") containing many unpublished results that mathematicians continued to verify long after his death.

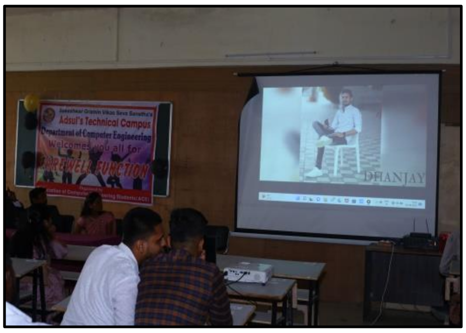


Rupali Marathe
Final Year 23-24

Picture Gallery












Staff Editor

Ms. P. M. Palwe
Assistant Professor

Student Editor

Arbaz Shaikh