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# B-SMART

We Explore We Exhibit



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## **B-SMART**

(**B**VRITian **S**tudent **M**agazine on **A**dvanced  
**R**esearch & **T**echnologies)



### **VISION**

To emerge as the best among the institutes of technology and research in the country dedicated to the cause of promoting quality technical education.

### **MISSION**

At BVRITH, we strive to

- Achieve academic excellence through innovative learning practices.
- Enhance intellectual ability and technical competency for a successful career.
- Encourage research and innovation.
- Nurture students towards holistic development with emphasis on leadership skills, life skills and human values.

**B-SMART** is here to keep the students and the faculty members informed with the latest development in the area of science, engineering & technology. It also inculcates the habit of reading among students about new trends in technology and emerging areas and to provide a platform to the student for sharing knowledge.

# Principal's Message



**Dr. K. V. N. Sunitha,**  
**Principal, BVRITH**

**"You become what you believe"**

**- Oprah Winfrey**

BVRIT HYDERABAD College of Engineering for Women believes that we can be the Best in the field of Technical Education, and already we are into that path. In the past 10 years, the college has made so many leaps into excellence in various fields. I'm very happy to announce that one of our students of 2019 Batch was awarded with Gold medal for the '**Best Outgoing Student of B. Tech IT**' within the JNTUH affiliated colleges. To add on, BVRIT HYDERABAD was ranked with grade AAAA (All India Rankings) in the category of 'India's Best Engineering Colleges' by Careers 360 during the year 2023-24.

We have some other feathers too, on our cap. BVRIT HYDERABAD College of Engineering for Women received the Best AI Lab Facility Award by AIMERS on 2<sup>nd</sup> March 2024. I'm honoured to receive the '**Lifetime Achievement award**' and three of our faculty members received the '**Best Faculty award**' by AIMERS.

BVRITH is keen in nurturing the social responsibility and commitment in the students' minds. We received Silver Certificate of Appreciation from Energy Swaraj Foundation for making the Institution's 500+ people Energy Literate. Our students had reached out to the slum areas within the city and distributed solar lamps to the needy and won lot of appreciation from the local people. And our NSS team is very enthusiastically working towards the social awareness programmes and contribute their share in the development.

I invite you all to have a scan through the 9<sup>th</sup> Volume (Issue 1) of our Technical magazine 'BSMART'. In every issue, we select one article among the student contributions as the most promising one and from the last issue, the article 'Agrist Harvesting Robot' contributed by Ms. BVS. Anjani Sukanya of III IT, has bagged this prize.

I appreciate the contributors of the articles and the dedicated faculty and student coordinators for their sincere efforts in bringing forth this edition of the magazine.

**Stay safe, Stay healthy.**

**With Best Wishes**

**Dr. K.V.N. Sunitha**

**As You Turn the pages....**

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## ‘ Name to Fame ’

### BVRIT HYDERABAD proudly introduces its star of the year and wishes her ‘The Best in Life’



Hi there! I'm Chokkarapu Snigdha, and I'm thrilled to take you on a journey through my unforgettable experiences at BVRITH. I pursued my B.Tech in the department of Information Technology, graduating in the batch of 2019-23. I am honoured to have been awarded the **Gold medal for the "Best Outgoing Student of B.Tech IT"** among all affiliated colleges of JNTUH University. Come along with me as I share my story with you!

In the realm of education, there are institutions that merely impart knowledge, and then there are those that sculpt dreams and foster innovation. Our college undoubtedly falls into the latter category. There are different programs conducted by college like WISE program which is more than

just a support system, it's a catalyst for transformation. Through its comprehensive curriculum and hands-on approach, WISE provides a nurturing environment where women can not only hone their technical skills but also gain the confidence in industries. Throughout my time here, I have been fortunate to be surrounded by a supportive community and dedicated faculty who have nurtured my growth and encouraged me to pursue my passions. From research projects to internships, the college has provided numerous avenues for me to explore my interests and develop new skills. Moreover, the vibrant campus life, filled with cultural events, sports tournaments, different clubs and academic competitions, has enriched my college experience

and fostered lifelong friendships. I am truly proud to be part of such an enriching and empowering educational institution that consistently strives to unlock the potential of its students and prepare them for success in the future.

Amidst the challenges posed by the COVID-19 pandemic, the shift to online classes served as a guiding light, ensuring continuity in education. Despite the physical distance separating students and educators, the effectiveness of online classes became evident through their teaching. Through the faculty efforts, they kept us connected, motivated, and safe, demonstrating unwavering commitment to our well-being and academic success.

Besides hitting the books, I'm also a proud member of our college volleyball team. It's been a blast representing our college and bonding with teammates. I'm also part of the Toastmasters club! It's been an incredible journey refining my public speaking skills and connecting with others who share my passion for communication.

I am immensely grateful to my parents for their constant love, support, and belief in me have been the cornerstone of my success since childhood. Your sacrifices and encouragement have inspired me to dream big and strive for excellence. I am forever grateful for the values you instilled in me and the endless opportunities you provided.

I want to express my heartfelt gratitude to respected principal, HOD and esteemed faculty for your unwavering support and guidance throughout my academic journey. Your mentorship has been instrumental in helping me achieve the remarkable milestone of winning the Gold Medal. Your dedication to fostering excellence and nurturing talent has inspired me to reach new heights, and I am deeply grateful for the invaluable lessons and opportunities you have provided. Thank you for believing in me and for your continued support as I embark on the next chapter of my life.

To my darling friends, your consistent support, encouragement and dedication during our group study sessions played a significant role in achieving this milestone. The late-night study sessions, the brainstorming sessions, and the endless cups of coffee were not just about academics; they were about friendship, companionship and mutual growth. We tackled challenges, celebrated victories, and made memories that will last a lifetime. I am deeply grateful for your friendship, your belief in me, and your invaluable contributions to my success. Your belief in my abilities and your presence during both the highs and the lows have made all the difference. Together, you have been my pillars of strength, motivating me to push boundaries, overcome challenges, and pursue my passions relentlessly. As I celebrate this achievement, I wanted to take a moment to express my deepest gratitude to each of you.

It's not just a college, it's a family where every voice is heard, every talent is celebrated, and every dream is nurtured. The Connections made here last forever, no matter where life takes us. Heartfelt thankyou everyone for inspiring me, believing me, and being an integral part of my journey!



**Chokkarapu Snigdha**  
**(IT – 2019 Batch)**



# COVER STORIES

## **COVER STORY – 1**

**AWARD WINNER AT THE ST**

**INNOVATION FAIR 2024,**

**ORGANIZED BY ST**

**MICROELECTRONICS IN NOIDA**

**Title :**

**EMPOWERING SMART  
ENVIRONMENTS: REAL-TIME  
HUMAN ACTIVITY  
RECOGNITION USING STM BL4  
IOT KIT and KINECT SENSOR**

**Team Members:**

**Ms. Ch. Nandhini**

**Ms. K. Lakshmi Durga**

**Mentor:**

**Dr. Pardhu Thottempudi,**

**Assistant Professor,**

**Department of ECE**



We are honoured to be awarded with the above-mentioned award in an exhilarating showcase of innovation and technology, the ST Innovation Fair 2024.

### **Project Genesis**

Integrating the Kinect sensor's depth-sensing prowess with the STM32L4 Discovery IoT Kit's computational efficiency is at the heart of our project. Aiming at detecting, classifying, and interpreting human activities in real time, our project opens new avenues for creating more intuitive and interactive smart environments.

### **Journey of Innovation**

Leveraging the Kinect sensor, our project captures human movement dynamics in a three-dimensional space, transforming raw skeletal data into structured feature vectors through normalization, noise reduction, and extracting key metrics like joint angles and movement trajectories.

In the subsequent data preprocessing and machine learning phase, we employed an LSTM model configured with dual LSTM layers, dropout layers for regularization, and dense layers for the classification tasks. Optimized with the Adam optimizer, this setup underwent training and validation phases to ensure accuracy across various activities.

For the firmware and hardware integration, we customized the firmware for the ST Micro electronics development board and integrated peripherals for comprehensive data acquisition and communication. This meticulous integration enables real-time activity classification, enhancing the project's innovative edge. Our system, capable of providing instant feedback on activity classifications through interfaces like Tera Term, showcases the potential of merging Kinect sensors and STM32L4 Discovery IoT Kits to create intelligent environments.

## **COVER STORY – 2**

**SECOND RUNNER-UP in  
TECHEQUINOX NATIONAL  
LEVEL TECHNICAL EVENT IOT  
HACKATHON IEEE- GITAM  
HYDERABAD- 2023**

**Title:**

**ENLIGHTENNET**



### **Team Members:**

**Ms. A. Shivani-IT**

**Ms.Y. Vijitha-ECE**

**Ms.V.Tanusree-IT**

**Ms.P.Snehalatha-EEE**

### **Mentor:**

**Mrs. Ch. Sai Lalitha Bala**

**Assistant Professor, IT**

During the Technequinox Hackathon in April 2023, our team at IEEE-GITAM Hyderabad explored Smart Lighting using LDR and PIR sensors. This event ignited our curiosity and collaboration, driving us to innovate lighting for smarter cities. We focused on creating efficient and sustainable lighting solutions, navigating challenges with teamwork and skill-building.

Our project, EnlightenNet, aimed to automatically adjust street light brightness based on traffic flow and ambient lighting, reducing energy consumption and light pollution. This innovative approach promises significant cost savings, enhanced public safety, and a greener urban environment. Through our coding expertise and cloud connectivity, we showcased technical skills and addressed challenges, fostering team unity and resilience.

Looking ahead, we are committed to refining EnlightenNet, overcoming limitations, and exploring technology's impact on daily life. Our dedication to sensor innovation drives us to create brighter, smarter futures, leveraging the power of technology to shape sustainable urban environments.

## **COVER STORY – 3**

### **1<sup>ST</sup> PRIZE WINNER IN 'CIRCUITRIX' in MEDHANVESH 2K24**



#### **Team Members:**

**Ms. Ch. Keethana**

**Ms. N. Janani**

**(II EEE)**

We, the students of 2nd year EEE at BVRIT HYDERABAD College of Engineering for Women, participated in Circuitrix during the TECH FEST MEDHANVESH 2k24 on March 22, 2024.

The event was conducted in two rounds. Round 1 was about fixing the faults in the circuit. They gave us about 30 minutes to fix the flawed circuits. On the completion of the round, they announced the teams that had successfully fixed the faulty circuit.

The teams that advanced to the second round were then given a riddle involving sensors, devices, and so on. We were given a touch-sensor riddle. Whoever solves the puzzle receives the components needed to assemble the circuit and create the desired result based on the given riddle. The team that finishes the round faster is the winner.

We were elevated just to be a part of such an exciting event. The questions given were thought-provoking. In each round, we had to address bigger technical complexities. There was a tough competition among 76 teams from various colleges. That's why, winning the top prize gave us the 'top of the world' feeling!!!

We are grateful to the organizers for arranging each round to be so thrilling that it really questioned our basic understanding on circuits.

## **COVER STORY – 4**

**SELECTED AS ONE AMONG  
THE 75 WINNERS OF THE IIT  
HYDERABAD BUILD  
PROGRAM OUT OF 600+  
APPLICATIONS.**



**Title :**

**SILENTSPEAK**

**Team Members:**

**Ms. K. Sai Sindhu**

**Ms. B. Nikitha**

**Ms. Mehnaaz**

**(III CSE)**

**Mentors:**

**Mr. Dr. Chandrasekhar  
Uddagiri**

**Associate Professor, CSE**

**Mr. R S Murali Nath**

**Professor, CSE Dept**

I am Sai Sindhu of III CSE along with my team Nikitha and Mehnaaz have pitched an online presentation on ‘SilentSpeak’ for the IIT Hyderabad BUILD program on 3rd September 2023.

Our project is a software that converts sign language to text, audio and text, audio to sign language. This idea helps to reduce the communication gap among the hearing and speech impaired people and normal people. Because normal people do not tend to learn sign language in order to communicate with the hearing and speech impaired due to which there always exists a communication gap. One of the real world scenarios made us think deeply about the issue.

We started understanding the difficulties and insecurities faced by those people by thinking from their point of view. Because of this communication gap, hearing and speech impaired people are getting restricted from having equal opportunities as we do. So we came up with an idea to sort out this issue.

We stood as one of the 75 winners out of 600+ applications. We got a chance to interact with many entrepreneurs and techies. The feedback which we received was very much helpful in further improving the solution and understanding the implementation. The moment we received the prize was not just overwhelming but it has also encouraged us to work more. We were awarded a grant of Rs 1 Lakh to finish our work.

**“Key to success is action, and the essential in action is perseverance.”**



## **COVER STORY – 5**

### **1<sup>st</sup> PRIZE WINNERS at GAMEATHON in MEDHANVESH 2K24**

#### **Team Members:**

**Ms. Ch. Lakshmi**

**Sai Poojitha**

**Ms. B. Purnima**

**(II CSE)**



In an electrifying showcase of talent and tenacity, our team of 2nd year CSE, students of BVRIT Hyderabad College of Engineering for Women emerged victorious at the Medhanvesh 2k24 in Gameathon, a prestigious event held as part of the national-level tech-fest conducted on the 22<sup>nd</sup> and 23<sup>rd</sup> of March, 2024. The 24-hour gaming extravaganza, hosted by the IT department, was a blend of creativity and endurance. As part of the competition, we were supposed to design a game using any language. The final round included 100% execution of code with GUI. Collaborating with diverse minds, we delved into designing a game from scratch, pushing the boundaries of creativity and innovation.

Our journey was marked by countless challenges, but each hurdle was met with resilience and ingenuity. After hours of hard work and dedication, our team emerged in the top 6 finalists! continuing, we completed the final round also successfully and were eagerly waiting for the announcement of the winners. To our surprise, we claimed the first-place honor. Reflecting on our exhilarating journey, we acknowledge the invaluable lessons learned and the bonds forged in the heat of competition. Our success serves as inspiration to us. We are immensely proud to have represented our college on such a prestigious platform and grateful for the unwavering support of our mentors, teammates, and well-wishers throughout this incredible journey.



## **COVER STORY – 6**

### **FIRST PRIZE WINNERS (BS&H)**

**at R&D SHOWCASE 2024**

#### **Title:**

**UNVEILING THE HEALTH  
RISKS OF MICROPLASTIC  
TOXICITY**

#### **Team Members:**

**Ms. G. Yashaswini**

**Ms. D. S. S. Vaishnavi**

**Ms. I. Mounika**

**(I ECE)**

#### **Mentor:**

**Ms. V Madhavi**

**Assistant Professor, BS &H**



In the bustling corridors of BVRITH Hyderabad, innovation knows no bounds. As the sun dipped below the horizon, the campus transformed into a beacon of knowledge and discovery, heralding the much-awaited R&D Showcase 2024 on the looming threat of microplastics to human health held on 4<sup>th</sup> may ,2024.

As an enthusiastic 1<sup>st</sup> year students under BS&H department , we were very much intrigued to take part in this event where we acquired knowledge from our seniors and mentored by our faculty. Our project is to spread awareness among people about the plastic usage and the microplastic risks in human body. To represent our concept we designed a model that explains how the microplastic particles are entering into our body and the monitoring and detection techniques that are used to find the microplastic content in our body.

Our project focuses on changing the culture of using plastics in larger scale. **Imagine a Day Where You Start Testing Your Plastic Levels as You Check Your Sugar and BP Levels in Your Body?** A drastic and daunting thought right! We have come up with spreading awareness on how to reduce plastic usage with other alternatives like bio-degradable plastics Ex: PHA's (Poly Hydroxy Alkanoates), jute bags and paper bags.

Looking ahead our team is planning to expand the idea to a extent of creating a product which is bio-degradable and cost effective as the current solutions which are mentioned above are not in complete use due to their cost or making products which do not let plastic decompose into water, food and air.

## **COVER STORY – 7**

**FIRST PRIZE WINNERS (CSE)**  
**at R&D SHOWCASE 2024**



### **Title:**

**SMART GAS SAFETY AND AIR  
QUALITY MONITORING**

### **Team Members:**

**Ms. P. Thanmai**

**Ms. K. Keerthi**

**Ms. P. Sreeja**

**(IV CSE)**

### **Mentor:**

**Ms. T Durga Devi**

**Assistant Professor, CSE**

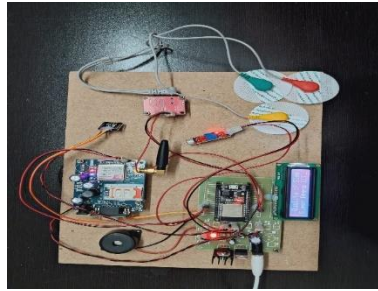
Our project, spearheaded under the guidance of Ms. T Durga Devi, Assistant Professor from BVRIT Hyderabad College of Engineering and carried out by P. Thanmai, K. Keerthi and P. Sreeja, this project focuses on leveraging IoT technology to enhance home safety through smart gas safety and air quality monitoring. The system integrates MQ-2 gas sensor and MQ-135 gas sensor to detect gas leaks and fires promptly, ensuring real-time alerts and enabling swift action to mitigate risks. In residential settings, gas leaks, fires, and poor air quality pose significant safety concerns. Traditional monitoring systems often lack the sophistication needed for timely detection and response. Our project bridges this gap by offering a comprehensive solution that combines advanced sensor technology with IoT connectivity. By providing real-time monitoring, automatic alerts, and remote control capabilities, our system elevates safety standards and promotes environmental protection.

In the dynamic landscape of technology, our team stands at the forefront of innovation, driving positive change and making meaningful contributions to society. With our project, we pave the way for a future where smart technology ensures the safety and well-being of every individual, one home at a time.

## **COVER STORY – 8**

**FIRST PRIZE WINNERS (ECE)**

**at R&D SHOWCASE 2024**



### **Title:**

**QUALITY OF SLEEP  
AND SLEEP APNEA**

### **Team Members:**

**Ms.B.Sneha**

**Ms.Y.Lakshmi Vineela**

**Ms.B.Swetha**

**(IV ECE)**

### **Mentor:**

**Mr. N. M. Sai Krishna**

**Assistant Professor, ECE**

Many people suffer from poor sleep quality, leading to a range of health issues, including sleep apnea—a condition characterized by repeated interruptions in breathing during sleep. Sleep apnea can lead to serious health complications. This makes monitoring sleep quality and detecting sleep apnea vital.

Traditional sleep monitoring methods, such as polysomnography, can be inconvenient and intrusive, often providing data after the fact rather than in real time. To address these limitations, an IoT-based real-time sleep apnea monitoring system has been developed. This system allows for continuous monitoring of various sleep-related parameters, including ECG, heart rate, pulse rate, and SpO<sub>2</sub>, noise sensor without disturbing the sleeper. It connects to a mobile app, providing real-time alerts when abnormalities occur.

The system uses multiple sensors to gather data during sleep. It is built around the ESP32 microcontroller, which integrates with various sensors to collect and analyze sleep data. This IoT-based system's real-time monitoring capability is a key advantage, allowing for prompt detection of sleep apnea events and immediate notifications through a mobile app.

To test the system's effectiveness, it was deployed on several individuals during sleep. The data collected from the sensors were analyzed to detect sleep apnea and other irregularities in sleep patterns. The system displayed the results both on an ESP32-based monitor and through the mobile app. The data analysis revealed that the system could successfully detect sleep apnea in certain cases, providing valuable insights into why it occurred. Additionally, it identified individuals who were not at risk of sleep-related issues, offering reassurance and guidance on maintaining good sleep quality.

potential for further development and expansion of the system. Future iterations could incorporate additional sensors, enhance connectivity with smart home devices, and provide more detailed insights into sleep patterns.

## **COVER STORY – 9**

### **FIRST PRIZE WINNERS (EEE)**

**at R&D SHOWCASE 2024**

#### **Title:**

**EXTRACTION OF ELECTRICAL  
PARAMETERS DATA FOR  
BUILDING MONITORING  
SYSTEM AND DATA ANALYTICS**



#### **Team Members:**

**Ms. S. Keethana**

**Ms. V. Krishna Pravallika**

**Ms. K. Renuka**

**Ms. Sneha Manoharan**

**Ms. Boda Sravanthi**

#### **Mentor:**

**Mr.C.Krishna Reddy**

**Assistant Professor, EEE**

Our project is about the Building Energy management system. Our prototype extracts the real time data using smart sensors and displays in graphical form.

Monitoring of electrical parameters in real-time in a building offers crucial insights into energy dynamics, facilitating the identification of inefficiencies and cost-saving opportunities. This process involves a blend of sensor-based methods, non-intrusive load monitoring (NILM), and data-driven algorithms to extract data from various points in the building's infrastructure. From detecting anomalies to predicting maintenance needs, the ability to monitor electrical parameters empowers building managers and engineers to make informed decisions promptly.

Despite its potential, the extraction of electrical parameters poses challenges such as accuracy, scalability, and privacy concerns. However, ongoing advancements in sensor technology, data analytics, and machine learning are gradually addressing these challenges.

The applications span from energy management to fault detection, showcasing the effectiveness of these techniques in optimizing building performance. Ultimately, the integration of electrical parameter extraction will continue to be essential in advancing smart buildings and cities towards sustainability and resilience.



## **COVER STORY – 10**

**FIRST PRIZE WINNERS  
in CODE HUNT, EVENT  
CONDUCTED BY CSE  
(AI & ML) in  
MEDHANVESH - 2024**



### **Team Members:**

**Ms. Hemanya Sai**

**Ms. Landu Lasya**

**Ms. Adimula Akshaya**

**(II AIML)**

We, the students of AIML II, began our journey in CODEHUNT, part of the "MEDHANVESH" event organized by our college. We were thrilled to apply for this hackathon and excited to participate in this technological event. This event was organized by the second-year students of the AIML Department, and unlike other hackathons, this one was unique, with each level being fun and engaging. The organizing team did a splendid job. They created a competitive atmosphere at every level, which made it all the more interesting. At the beginning of the first level, we chose our desk, where there was a bowl of general questions, each with a number as its answer. The desks were assigned based on those numbers, making this level quite exciting. The second level involved basic aptitude questions and coding challenges. Initially, we didn't think we would advance to the next level, but when we learned that only 30 out of 56 teams had qualified, we were determined to continue. In the second level, we picked our questions and started solving them. The first question was tricky; despite no errors in the code, it didn't pass the test cases. After a long time debugging, we identified our mistake. Once we fixed it, the rest of the questions became easier to solve. We completed the second question in under two minutes and quickly solved the third one.

It's every coder's dream to run their code without errors, and we were thrilled to have succeeded in this event. We would have regretted not participating in the second round. We're grateful to the event organizers for giving us this wonderful opportunity and creating a platform for us to showcase our talent, ultimately leading to our success in the event.



## TECHNICAL TRENDS – From Faculty

### Bridging Technology and Interactivity: A Dive into Real-Time Human Activity Recognition

In an age where technology seamlessly integrates into our daily lives, a team of innovators has embarked on a pioneering project to redefine our interaction with smart environments. This initiative combines the depth-sensing prowess of the Kinect sensor with the computational agility of the STM32L4 Discovery IoT Kit to detect, classify, and interpret human activities in real time. This ambitious project highlights the potential for more intuitive smart environments and marks a significant leap towards creating truly interactive spaces responsive to human presence.

#### The Core of Innovation: Kinect and STM32L4 IoT Kit

The essence of this project lies in its innovative use of the Kinect sensor to capture the nuanced dynamics of human movement within a three-dimensional space. The Kinect sensor offers a comprehensive mapping of human skeletal movements by detailing joint positions, orientations, and velocities. Once processed through the Kinect SDK, this raw data is transformed into structured feature vectors. This transformation involves critical steps such as normalization, noise reduction, and extracting significant metrics, including joint angles and movement trajectories. The result is a highly detailed representation of human activity, ripe for analysis and classification.

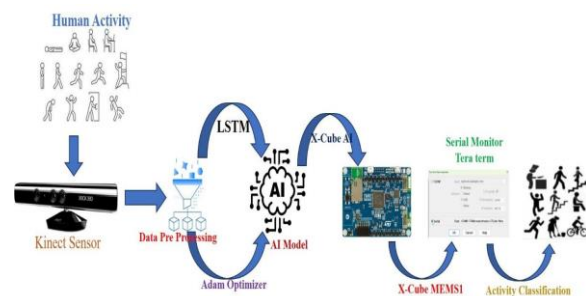
#### From Raw Data to Real-Time Insights: Data Preprocessing and Machine Learning

The journey from raw skeletal data to actionable insights involves a meticulous data preprocessing phase, followed by a sophisticated machine learning model. Initially, the activity data is loaded and visualized to understand the distribution of different activities. Following this, the data undergoes

one-hot encoding to align with the output format of the LSTM model, which is then fed into two LSTM layers, designed with dropout layers for regularization and dense layers for activity classification. Optimized with the Adam optimizer, this model is trained and validated, ensuring its efficacy in accurately classifying various human activities. Incorporating a confusion matrix and a classification report in the performance evaluation phase facilitates a comprehensive understanding of the model's capabilities.

#### Ensuring Seamless Integration: Firmware and Hardware Synergy

The project's success is further underscored by the seamless integration of firmware tailored for the STMicroelectronics development board with the necessary hardware peripherals. The LSM6DSL MEMS sensor plays a crucial role in this setup, capturing motion data that feeds directly into the AI model for real-time activity classification. This harmonious interaction between hardware components and the AI model exemplifies the project's innovative edge in real-time activity recognition. Figure 1 give the glimpse of the work done.



#### Real-Time Feedback and System Reliability: Output and Error Handling

A pivotal feature of this project is its ability to provide immediate feedback on activity classifications through tools like the Serial Monitor, facilitating real-time assessment of the system's performance. The Error\_Handler function is intricately designed to identify and signal any operational issues, ensuring the system's robustness and reliability.

**“The secret of success is to be ready when your opportunity comes.”**

## Conclusion: Redefining Human-Technology Interaction

This groundbreaking project stands at the intersection of cutting-edge technology and practical application, showcasing the immense potential of integrating Kinect sensors and STM32L4 Discovery IoT Kits in creating intelligent environments. By enabling real-time recognition of human activities, this endeavor aims to revolutionize how we interact with the spaces around us, making them more adaptive and sensitive to our presence and actions. As we move forward, the implications of such technological advancements promise to transform our living and working environments, making them more responsive and attuned to human needs and activities.

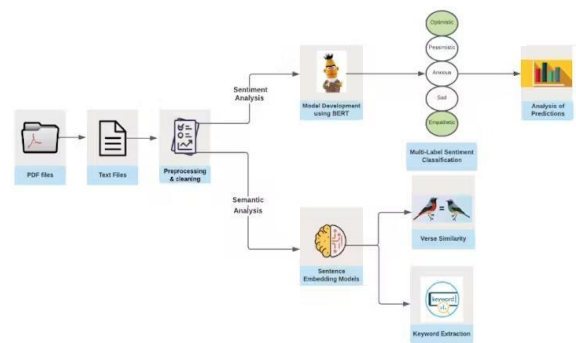
**Dr. Pardhu  
Thottempudi**  
Assistant Professor,  
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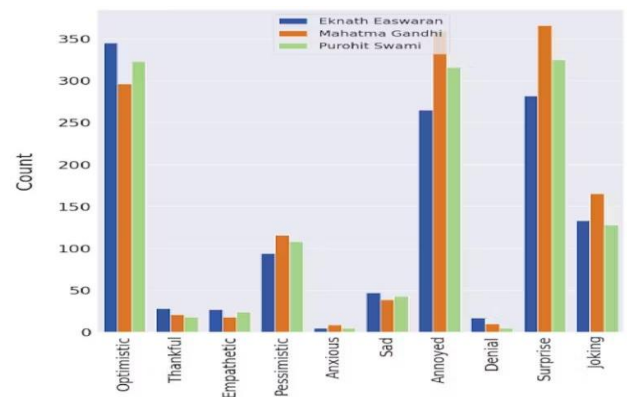
## Understanding the Impact of Bhagavad Gita Chanting on Adolescents Behaviour Through Machine Learning

Bhagavad Gita Chanting reflects a deep reflection on the purpose of life and the role of spiritual teachings, particularly the Bhagavad Gita, in guiding individuals towards self-realization and liberation from worldly suffering. It emphasizes the importance of devotion to Sri Krishna as the ultimate path to enlightenment and liberation from the cycle of birth and death. Many people studied Gita with an unconventional approach in order to realize something new from it. Gita is a sacred text which is read by the devotees in the devotional sense which sometimes makes them uncritical about the text. But we read it and contemplated it in a very different way which consisted of both negative and positive responses. By this

mind-set we realized some concepts which focused on the ethical side of Gita which could sanctify the student life of this current Yuga. The chanting of Bhagavad Gita reflects individuals' behavior and changes lifestyle of Adolescents. The analysis of properties in control group and training group of youth helps to implement Bhagavad Gita chanting as mandatory for every adolescent aged individual in their life.



Limited qualitative studies have explored the behavioral changes in youths due to Bhagavad Gita chanting. However, quantitative and predictive analysis of these patterns is lacking. This research gap necessitates an efficient



method to comprehend and anticipate behavioral patterns using data-driven methodologies. Bhagavad Gita chanting, a form of Hindu devotional practice, is often adopted by youths for religious and cultural reasons. This practice can evoke various behavioral and mental responses in youths, understanding these responses can aid in personal and spiritual development. This research proposes usage of machine learning (ML) algorithms to explore

**“Key to success is action, and the essential in action is perseverance.”**

and anticipate behavioral patterns of youths engaged in Bhagavad Gita chanting.

#### References:

<https://www.scribd.com/document/437672982/The-Bhagavad-Gita-for-Teenagers>

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## Unveiling the Potential of Five-Phase Induction Motors in Future EV Propulsion

#### Introduction:

In the ever-evolving landscape of electric vehicles (EVs), the quest for advanced propulsion systems has led to a rebirth of interest in multi-phase induction motors. Among these, the five-phase induction motor stands out as a promising contender, offering a unique blend of performance, efficiency, and adaptability perfectly suited for the demands of next-generation EVs.

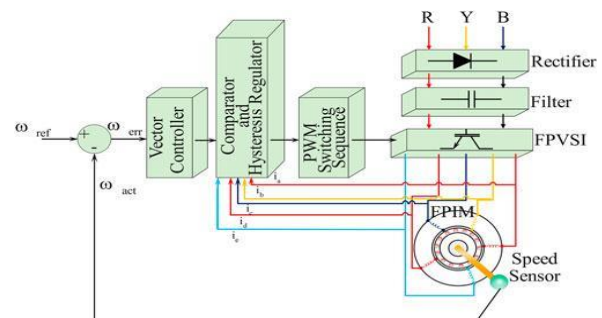
#### Fundamentals of Five-Phase Induction Motors:

Unlike conventional three-phase motors, which have long been the staple of industrial applications, five-phase induction motors feature an additional two phases, enabling them to deliver higher torque density, improved fault tolerance, and enhanced efficiency and smooth operation. These characteristics make them an attractive choice for electric vehicle manufacturers seeking to push the boundaries of performance and sustainability.

#### Challenges and Opportunities:

While the adoption of five-phase induction motors in EVs presents exciting possibilities, it

also poses certain challenges. These include the development of specialized manufacturing processes, optimization of control algorithms, and addressing compatibility issues with existing infrastructure. To fully harness the potential of five-phase induction motors, continuous integration with power electronic devices is essential. And requires sophisticated inverters, motor controllers, and battery management, which work in tandem to regulate power delivery.



However, with ongoing research and innovation, researchers are increasingly focused on implementing advanced control schemes for five-phase induction motors to harness their potential benefits in the automotive sector as the automotive industry continues its transition towards electrification. Through collaboration between researchers, manufacturers, can accelerate the adoption of five-phase induction motors in future EVs.

**Reference:** V. S. Reddy Chagam and S. Devabhaktuni, "Enhanced Low-Speed Characteristics with Constant Switching Torque-Controller-Based DTC Technique of Five-Phase Induction Motor Drive with FOPI Control," in *IEEE Transactions on Industrial Electronics*, vol. 70, no. 11, pp. 10789-10799, Nov. 2023, doi: 10.1109/TIE.2022.3227275.

**Mr. C Venkata Subba Reddy,**  
Assistant Professor,  
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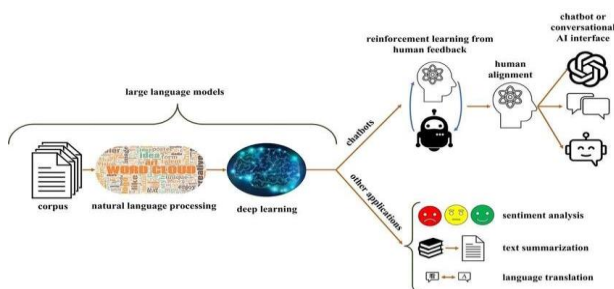
## Large Language Models (LLMs)

### Introduction:

A large language model is a type of smart computer program that uses advanced algorithms to understand and generate human-like language. These models are typically based on deep learning techniques, which involve training neural networks on large amounts of text data.

### How do Large Language Models Work?

Large language models, particularly based on transformer architectures, learn to understand language by processing vast amounts of text data. The transformer architecture uses models like BERT (Bidirectional Encoder Representations from Transformers) and GPT (Generative Pre-trained Transformer), which is effectively used for capturing complex patterns and relationships in language.



### Open Source Large Language Model(LLM):

The emergence of open-source Large Language Models (LLMs) has indeed brought about a transformative shift in the field of natural language processing (NLP). These models, freely available to the public, have democratized access to advanced NLP capabilities, empowering researchers, developers, and businesses to build innovative applications at scale without the barrier of high costs. One notable example of such open-source LLM is **Bloom**. Bloom stands out as the first multilingual LLM trained with complete transparency, marking a significant milestone in collaborative AI research efforts.

With its 176 billion parameters (larger than OpenAI's GPT-3), BLOOM can generate text in 46 natural languages and 13 programming

languages. It is trained on 1.6TB of text data, 320 times the complete works of Shakespeare. Bloom's architecture is suited for training in multiple languages and allows the user to translate and talk about a topic in a different language. We can utilize the APIs connected to pre-trained models of many of the widely available LLMs through **Hugging Face**.

### Generating Images with Multimodal Language Models

Diffusion GPT is an advanced image generation system that analyzes input prompts to select the best generative model from a range of options, ensuring high-quality results. It combines a large language model with various domain-specific generative models and follows a structured workflow, including prompt parsing, model selection, and image generation, to achieve its goal efficiently.

### Conclusion:

Large language models represent a significant advancement in natural language processing, enabling computers to understand and generate human-like language with remarkable accuracy. These models have a wide range of applications across various domains, from translation and sentiment analysis to chatbots and creative text generation. Diffusion GPT represents a paradigm shift in text-to-image generation providing a holistic solution that aligns with the dynamic requirements of diverse prompts and domains. As research in this field continues to progress, we can expect further improvements in the capabilities and performance of large language models.

### Reference:

<https://www.analyticsvidhya.com/blog/2023/03/an-introduction-to-large-language-models-llms/>

<https://www.analyticsvidhya.com/blog/2024/02/llm-driven-text-to-image-with-diffusiongpt/>

"If you can't explain it simply, you don't understand it well enough."



**Ms. S. Vidyullatha,**  
**Assistant Professor,**  
**Department of CSE**



### **Accelerating Drug Discovery: Leveraging AutoML for Predictive Modeling and Optimization**

Automated Machine Learning (AutoML) is revolutionizing the process of drug discovery and development, accelerating the identification of potential drug candidates and streamlining the clinical trial process.

#### **Identification of Drug Targets:**

AutoML can analyze large biomedical datasets, including genomics data, protein structure data, and drug screening data, to identify potential drug targets.

By leveraging advanced machine learning algorithms, AutoML can predict the interaction between drug molecules and biological targets, helping researchers identify promising drug candidates more efficiently.

#### **Prediction of Drug Efficacy and Safety:**

AutoML can analyze preclinical and clinical trial data to predict the efficacy and safety of potential drug candidates.

By considering a wide range of molecular and clinical variables, AutoML helps researchers identify drug candidates with the highest likelihood of success, reducing the time and cost of drug development.

#### **Optimization of Clinical Trials:**

AutoML can optimize the design and execution of clinical trials, helping researchers identify the most appropriate patient populations, treatment protocols, and endpoints.

By analyzing historical trial data and patient characteristics, AutoML helps researchers design more efficient and informative clinical trials, accelerating the evaluation of new drug candidates.

### **Drug Repurposing and Combination Therapy:**

By identifying existing drugs that may be effective for new indications or in combination with other drugs, AutoML helps researchers expedite the development of new treatments and improve patient care.

#### **Scalability and Efficiency:**

AutoML enables researchers to analyze large volumes of data quickly and efficiently, accelerating the drug discovery and development process.

By automating the end-to-end process of model development and optimization, AutoML helps researchers focus on high-level tasks such as problem formulation, data interpretation, and decision-making.

In conclusion, AutoML is revolutionizing the process of drug discovery and development, enabling researchers to identify promising drug candidates more efficiently, predict their efficacy and safety, and optimize the design and execution of clinical trials. By leveraging advanced machine learning algorithms and large biomedical datasets, AutoML is accelerating the development of new treatments and improving patient care.

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**Department of IT**



### **High-performance artificial muscles made from pure conductive polymer fibers**

Researchers in China have achieved a remarkable milestone with the creation of artificial muscles crafted from pure conductive polymer coiled yarns. This advancement stems from the successful production of robust conductive polymer microfibers utilizing



poly(3,4-ethylenedioxythiophene):poly (styrene sulfonate), commonly known as PEDOT:PSS.

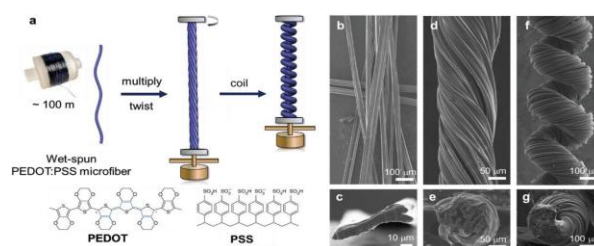
The PEDOT: PSS microfibers displayed exceptional mechanical properties, boasting a breaking strength of 250 MPa, a maximum tensile strain of about 20%, and a notable electrical conductivity of approximately 2400 S/cm. Leveraging these attributes, the researchers intertwined multiple microfibers, creating a unique coiled configuration to construct artificial muscles.

Additionally, the researchers identified a crucial actuation mechanism driving the functionality of these artificial muscles based on conductive polymers: molecular structural shifts during electrochemical reactions. These alterations induce substantial radial volume expansion in the microfibers, magnified by the coiled yarn arrangement. Consequently, these artificial muscles demonstrated an impressive contractile strain surpassing 11% under a high stress of 5 MPa, equivalent to lifting loads over 4000 times their weight, all while operating at a mere 1 V input voltage.

Beyond their electrochemical actuation, the artificial muscles based on conductive polymers showcased a remarkable hydration-induced contraction of up to 33%. This hydro-actuation is ascribed to the presence of the highly hygroscopic polyelectrolyte PSS within the PEDOT:PSS microfibers, facilitating substantial water absorption and subsequent volume expansion. The inherent high conductivity of the microfibers facilitates swift recovery from the hydrated state via electrical heating, efficiently expelling the absorbed water molecules.

The blend of substantial contraction, high work capacity, and versatile actuation modes renders these artificial muscles, based on conductive polymers, highly promising for diverse smart control systems. Demonstrating their potential, researchers integrated them into an

electrochemical actuation unit, capable of lifting a 1.6 g load by 15 mm with minimal voltage input. They also engineered a smart window, automatically closing in response to high humidity or sudden rainfall, and a smart gripping jaw with a controllable switch utilizing the muscles' contraction in water and elongation when energized.



This pioneering work positions high-performance conductive polymer microfibers as a cost-effective substitute for carbon nanotubes in lightweight artificial muscle development. Leveraging the distinctive properties of these materials and the innovative coiled yarn structure, researchers achieved performance levels comparable to carbon nanotube-based counterparts.

As research in this field progresses, further enhancements in material composites and engineering techniques hold the promise of unlocking even greater potential for conductive polymer-based artificial muscles. This breakthrough not only advances artificial muscle technology but also lays the groundwork for more economical and accessible solutions in robotics, prosthetics, and biomedical devices.

**Reference:** Hu, H. *et al.* (2024) "Artificial muscles based on coiled conductive polymer yarns," *Advanced functional materials*. doi: 10.1002/adfm.202401685.

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## TECHNICAL TRENDS – From Students

### **Desk Bike to Charge Your Phone and Laptop all About Lifespan Ampera Power-Generating Office Bike**

#### **YOUR INPUT IS ITS OUTPUT**

A revolutionary desk bike designed to seamlessly integrate work and wellness. Its main goal is to enable people to harness the benefits of remote workspace while effortlessly boosting productivity and enhancing fitness.

An innovative device that is a combo of energy conservation with health benefits. The company says that a half-hour of pedaling can charge the phone about 50 percent and cycling over 60 revolutions per minute can charge the laptop as well.



The best features of this device are:

- generates electricity using kinetic energy
- has a built-in USB-C port to charge your laptop.
- Pedal-powered wireless charging to mobiles
- It's height-adjustable
- uses Sustainable Recyclable Non-Toxic Plastics
- You can use the app to change the gear colors
- comes with an easy-to-use Fitness Tracking Mobile App

The LifeSpan Ampera Bike allows the users to enjoy the benefits of both, staying active physically and mentally.

Reference:

<https://shorturl.at/pAHY7>

**Ms. P. Deepthi**

**CSE 2<sup>nd</sup> Year**



### **Unleashing the Power of Designer Phages**

As individuals interested in technology and science, we're often intrigued by innovations that hold the promise of improving lives. One such innovation is designer phages—a revolutionary approach in biotechnology with big potential for healthcare and agriculture.



Phages are viruses that attack specific types of bacteria. Scientists are now tweaking these viruses to manipulate the human "microbiome"—the microbes living on and within the body that are essential for our health. By reprogramming them in labs, synthetic biologists can target specific bacteria to produce helpful substances or become sensitive to certain drugs.

This innovative approach, known as designer phages, has the potential to treat microbiome-associated diseases and boost agricultural productivity. With promising early research results, significant investments are pouring into the clinical testing of engineered phages.

Imagine the possibilities—using specially designed viruses to combat antimicrobial resistance, enhance human well-being, and improve crop yields. Regardless of our backgrounds or fields of study, we can all appreciate the interdisciplinary nature of this field, where biology meets technology to address pressing global challenges. With continued research and development, designer phages could emerge as a powerful tool to safeguard human, animal, and plant health in the years to come. Sangryeol Ryu, section chief editor at Frontiers in Microbiology one of the journals supporting the Forum’s project, said: “The threat from antimicrobial resistant pathogenic bacteria is increasing and the COVID-19 pandemic worsened this situation as antibiotics were widely used to treat covid patients. Designer phages can provide a rapid solution to combat antimicrobial resistance and the phage biology section of Frontiers in Microbiology is directing its efforts to support the research necessary to make designer phages more efficient.”

**Reference:**

<http://surl.li/tnxvc>

**Ms.VVSL Vaishnavi**  
**CSE 3<sup>rd</sup> Year**



## AI To Find Aliens

The development of this artificial intelligence model represents a significant leap forward in the field of astrobiology, where the search for extraterrestrial life forms has long captivated the imagination of scientists and the public alike. By harnessing the power of machine learning, researchers have unlocked a new approach to detecting life beyond Earth's confines.

What sets this AI apart is its ability to transcend traditional constraints. Unlike previous methods that relied on specific biomarkers or environmental conditions indicative of life as we know it, this AI operates on a more nuanced level. It discerns subtle differences in the molecular composition and structural characteristics of various samples, allowing it to identify potential life forms that may exhibit radically different biochemistries.

In practical terms, this means that AI could revolutionize our exploration of other planets, moons, and celestial bodies within our solar



system and beyond. Whether probing the icy depths of Europa, the methane-rich atmosphere of Titan, or the ancient soils of Mars, this technology offers a versatile tool for detecting signs of life in environments previously deemed inhospitable. Moreover, the implications of this breakthrough extend beyond mere detection. By scrutinizing the origins of life on Earth and comparing it with potential extraterrestrial counterparts, scientists may unravel fundamental questions about the nature of life itself.

**Reference:** <http://surl.li/tnxuv>

**Ms.K.Vyshnavi**  
**CSE 3<sup>rd</sup> Year**



## AI's Impact on Low-Code/No-Code: Streamlining Development for All

Artificial Intelligence (AI) has become an integral part of the low-code and no-code development landscape, revolutionizing the way applications are built and empowering citizen developers with unprecedented capabilities. These platforms offer intuitive interfaces that abstract away much of the complexity traditionally associated with coding, allowing users with minimal programming experience to create powerful applications.

AI enhances this process by automating various aspects of development, such as code



generation, testing, and optimization. Natural language processing (NLP) algorithms enable users to describe their requirements in plain language, which is then translated into functional code by AI systems. This significantly reduces the learning curve and enables faster prototyping and iteration cycles. Moreover, AI-driven features like predictive analytics and recommendation engines empower developers to make data-driven decisions and streamline development workflows. By analyzing user behavior and application performance, AI can suggest optimizations and enhancements, leading to more robust and efficient applications. Furthermore, AI enables low-code and no-code platforms to offer advanced functionalities such as image recognition, sentiment analysis, and language

translation, without requiring users to write complex algorithms from scratch.

In summary, AI's integration into low-code and no-code development platforms has democratized software development, making it more accessible to a broader audience while accelerating the pace of innovation. As AI continues to evolve, its influence on these platforms will only grow, unlocking even greater potential for creativity and efficiency in application development.

**Reference:** <http://surl.li/tnxuj>

**Ms.B.Yuktha**

**EEE 3<sup>rd</sup> Year**



## Phyigital Convergence: When Real and Digital Worlds Collide

Phyigital Convergence blends the physical and digital realms, reshaping our reality and transforming various aspects of life such as commerce, entertainment, and daily interactions. Understanding and addressing ethical dilemmas around data privacy and security are crucial amidst this evolution. The integration of AR, VR, IoT, and AI promises enhanced personalization and convenience, driving responsible technology usage.



The transition from desktop computers to smartphones has revolutionized communication and work, leading to the emergence of Phyigital Convergence. This fusion redefines commerce,



enabling seamless transitions between online browsing and in-store interactions through AR. Entertainment experiences are enriched with VR, offering immersive digital worlds and interactive media. Technological foundations like AR-enabled mobile apps, AI-driven analytics, and IoT connectivity underpin Phygital experiences. Leading organizations such as Nike and Disney leverage these technologies to enhance user engagement and satisfaction. Adapting to this However, navigating this transformation poses unique challenges, including rapid technological changes and ethical considerations. Safeguarding data privacy and security demands collaborative efforts from individuals, businesses, and regulators. Embracing responsible technology usage while balancing physical and digital interactions ensures a seamlessly integrated experience.

**Reference:**

<https://shorturl.at/hyCPZ>

**Ms.P.Swapna**  
**EEE 3<sup>rd</sup> Year**



## CRISPR

Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) represents a monumental leap in genetic engineering. This innovative technology exploits the natural defense mechanisms found in bacterial cells to precisely edit DNA sequences, offering unprecedented potential in disease treatment and agriculture. CRISPR's ability to modify genes holds immense promise for combating major health challenges like cancer and HIV. By precisely targeting and altering specific genes associated with these diseases, researchers

envision a future where once-incurable illnesses become manageable within years.

Moreover, CRISPR offers hope for rare genetic disorders such as cystic fibrosis (CF) and sickle cell disease. Clinical trials are underway to investigate CRISPR's effectiveness in correcting genetic mutations responsible for these conditions, potentially providing patients with



transformative new therapies beyond traditional treatments like bone marrow transplants. Beyond medicine, CRISPR's applications extend to agriculture, where it could enhance crop resilience and nutritional value. However, along with these remarkable possibilities, CRISPR raises ethical concerns. The prospect of manipulating human genetics raises questions about the ethical boundaries of genetic editing and the implications of "playing God." Additionally, there are fears about the misuse of CRISPR for creating genetically modified humans, highlighting the need for careful regulation and ethical oversight in its application. In conclusion, CRISPR stands at the forefront of genetic innovation, offering a transformative tool to address diseases and revolutionize agriculture. While the technology holds great promise, its ethical implications necessitate thoughtful consideration to ensure responsible and beneficial use in advancing human health and well-being.

**Reference:**

<https://shorturl.at/kiHL9>

**Ms.Mallika**  
**CSE 3<sup>rd</sup> Year**





## LG's Zero Labor Robot

LG's smart home AI agent, introduced at CES 2024, merges robotics, AI and multi modal tech. It moves autonomously with a unique 'two-legged' wheel design, engaging users verbally. This agent's advanced AI includes voice and image recognition, natural language processing, and Qualcomm robotics RB5 integration, making it a versatile smart home hub.

It controls appliances, monitors environmental data and acts as a pet monitor and security



guard. Its autonomy extends to patrolling, conserving energy and personalized interactions like greeting users or assisting with tasks. LG envisions a 'Zero Labor home', simplifying home management and improving daily life.

This also offers practical features like emotion analysis and personalized services as the artificial intelligence inside the robot can also read facial expressions and vocal inflections to gauge one's mood. By combining cutting edge tech and user friendly functions, LG aims to lead the smart home market, reshaping how people interact with their homes for a more convenient and enjoyable experience.

### Reference:

<https://shorturl.at/ijCTZ>

**Ms.Charitha**  
**CSE 3<sup>rd</sup> Year**



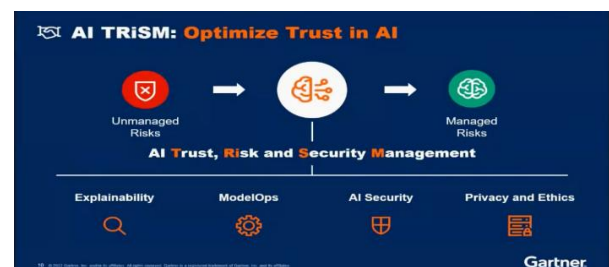
## Navigating the Landscape of AI:

### Trust, Risk, and Security Management

Artificial Intelligence (AI) has emerged as a powerful force reshaping modern industries, offering unparalleled opportunities for innovation and efficiency. However, this integration of AI into various domains also presents a host of challenges encapsulated within the framework of AI TRiSM: Trust, Risk, and Security Management. This holistic approach encompasses governance, fairness, reliability, efficacy, and data protection.

Central to AI TRiSM is the imperative for entrepreneurs to cultivate and sustain trust among stakeholders, including customers, employees, and regulators. Transparency, explainability, and fairness are paramount in ensuring trust, necessitating a profound comprehension of training data, algorithms, and models, alongside a dedication to ethical development.

Furthermore, managing risks such as data breaches and cyber threats requires robust security measures like encryption and regular



audits. Reliability and robustness demand continuous monitoring and optimization of AI systems. In essence, AI TRiSM is indispensable for navigating the challenges of AI adoption, fostering trust, mitigating risks, and ensuring the reliability and efficacy of AI systems. As AI continues its transformative trajectory, embracing AI TRiSM will be pivotal in



fitness trackers meticulously record our physical activities, or how social media platforms meticulously log our online interactions. These digital footprints serve as the building blocks of a vast information landscape, offering profound insights and opportunities for innovation.

Businesses eagerly harness this wealth of data to tailor advertisements and services to individual preferences. Healthcare providers utilize it to predict and preempt illnesses, potentially saving lives through early intervention. Cities leverage data to optimize traffic flow and resource allocation, leading to more efficient urban environments. The possibilities seem limitless, promising a future where our experiences are finely tuned to our unique needs and circumstances.

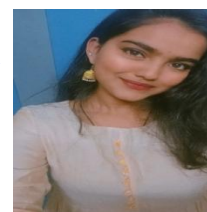
However, amidst this promise lies a complex web of concerns. Foremost among them is the issue of privacy. As we willingly surrender more and more data, questions about who owns and controls this information become increasingly pressing. The specter of surveillance looms large, raising fears of invasive monitoring and potential exploitation. Moreover, the reliance on data introduces the risk of bias. Algorithms, no matter how sophisticated, are only as good as the data they are trained on. Incomplete or skewed datasets can inadvertently perpetuate discrimination, amplifying existing inequalities in society.

Despite these challenges, the potential benefits of datafication are undeniable. Responsible use of data holds the key to unlocking a future marked by efficiency, personalization, and improved well-being. The crucial task at hand is striking a delicate balance – harnessing the power of data while safeguarding individual

privacy and ensuring fairness and impartiality in its utilization.

In essence, navigating the era of datafication requires a thoughtful approach that prioritizes both innovation and ethical considerations. By doing so, we can aspire to build a world where data serves as a force for good, empowering individuals and communities to thrive in an increasingly interconnected and data-driven society.

**Reference:**<http://surl.li/aqboa>



**Ms. Nakshitha Bogi**  
**ECE 3<sup>rd</sup> year**

### **Sora: AI Makes Videos from Words**

OpenAI's new innovation called Sora can turn words into videos that look real. It's like magic! With Sora, you can describe what you want in



words, and it makes a video out of it. It's super easy and fast, so anyone can do it. But there are also some big questions. Like, will AI videos be able to come up with new ideas, or just copy what they've seen before? And what about using AI to make videos of people? One thing's for sure: this technology opens up a whole new world of possibilities. Imagine being able to bring any idea to life with just a few words!



And it's not just about making cool videos. AI-generated content could also help people who can't create videos themselves, like those with disabilities or limited resources. It could give a way to express themselves in ways they couldn't before. But, as with any new technology, there are challenges to overcome. We need to make sure AI videos are used responsibly. That means being honest about what's made by AI and what's made by humans. It also means protecting people's privacy and making sure AI doesn't spread harmful or misleading information. In the end, Sora and other AI video makers have the potential to change the world. So let's welcome this new era of creativity while also being mindful of its impact on society.

**Reference:** <https://openai.com/sora>

**Ms.S. Yuvika Sai**  
**CSE 1<sup>st</sup> year**



## Alternatives of CHAT GPT

OpenAI's ChatGPT is not the only widely acclaimed conversational AI model nowadays. Many of these alternatives have distinctive features, specializations, and use cases, quite apart from ChatGPT, and might be better suited to meet the demands of different users. This article intends to introduce some of the leading alternatives to ChatGPT and what makes each unique. Some of the best AI tools are:

**Google Bard:** The conversational AI Google Bard is a creative engine from Google that can

provide thoughtful and inspiring responses to a broad range of queries. Bard has large neural networks and extensive datasets to both reason about context and converse with users. From financial portfolios to combating climate change, explore how AI is making decisions about humanity's future. Bard also has deep ties with Google services, making it a perfect fit for general information and knowledge-based queries. Key Features: Integration with Google services like Search and Maps. High adaptability to user context. Bard also has deep ties with Google services, making it a perfect fit for general information and knowledge-based queries. Key Features: Integration with Google services like Search and Maps. High adaptability to user context.

**Microsoft Bing Chat (from Microsoft) - uses OpenAI's GPT-4:** What makes Bing Chat unique is that it uses GPT-4 but is also integrated with Microsoft tools; it can search the internet on the fly, so it gives current responses has current information, and has a search in the chat interface. Key Features: Real-time information retrieval, Integration with Microsoft products like Office 365 and Teams, Ability to generate content like emails and reports.

**Jasper:** It is used by the content creators and is designed for the Businesses. It is used for commercial applications, like Text summarization and content optimization.

Key Features: Marketing, content generation, and copywriting. For social media, blog creation tools and Collaboration with teams. Business communication and engagement. Even though Chat GPT is a good conversational model this model provides a higher range of features than that of gpt3. Even if we are seeking real-time information, business-oriented content generation, or ethical AI, there will be



alternatives that meet our requirements. These tools can be used for efficient workflows. As technology is evolving different tools can be used according to the needs.

**Reference:** <https://www.lifewire.com/chatgpt-alternatives-7551608>

**Ms.Gunda Hasmitha**  
**CSE 3<sup>rd</sup> year**



## Exploring Lucrative Non-Coding IT Careers: A Path To Success In The Tech Industry

In the dynamic landscape of the IT industry, coding skills have traditionally been perceived as essential for success. However, for those not proficient in programming languages, a plethora of lucrative non-coding opportunities await exploration. These roles offer avenues for tech enthusiasts to contribute meaningfully without extensive coding knowledge. Data analysis stands out as a prime non-coding career path, where professionals extract insights from vast datasets, aiding organizations in making data-driven decisions. Scrum Masters facilitate Agile practices within development teams, ensuring efficient collaboration and project delivery. Business analysts bridge business objectives with technical solutions, driving organizational efficiency and innovation.

Project managers oversee the execution of IT projects, ensuring timely delivery and stakeholder satisfaction. Quality assurance testers play a vital role in ensuring software quality, identifying bugs, and conducting thorough testing. UX designers focus on creating user-friendly interfaces, enhancing user satisfaction and business success. Digital marketing encompasses various roles, from SEO specialists to content marketers, driving online visibility and engagement.

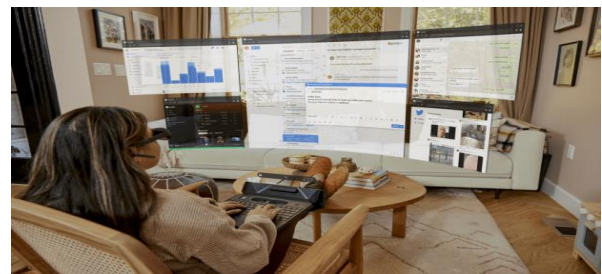
These non-coding roles, with their diverse responsibilities and demands, offer avenues for growth and fulfillment in the tech industry. By honing relevant skills and staying updated on industry trends, individuals can carve out successful careers without coding expertise.

**Reference:**<https://www.simplilearn.com/non-coding-it-jobs-article>

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**ECE 3<sup>rd</sup> year**



## Introducing Spacetop: Your Gateway to a Giant Screen Laptop Experience



Spacetop by Sightful redefines traditional computing with a virtual 100-inch screen, offering unparalleled screen freedom. Developed by former Magic Leap innovators Tamir Berliner and Tomer Kahan, Spacetop ensures privacy with a fully private computing experience, accessible only to the user. At its core, Spacetop integrates AR glasses crafted with Nreal, boasting a 53-degree field of view and 1080p resolution per eye, powered by the Qualcomm Snapdragon 865 processor. With 6 degrees of freedom (6DoF), users experience immersive computing, supported by 8GB memory, 256GB storage, Wi-Fi 6, Bluetooth 5.1, and 5G Sub-6 connectivity. Spacetop OS, based on Android, facilitates efficient multitasking for modern workflows, ideal for web applications. Upon wearing the headset,

users enter a vast virtual environment, akin to a doubled Corsair XeneonFlex. Navigation mirrors conventional computing, enhancing productivity with seamless integration of familiar applications like Gmail and YouTube. Spacetop's user-friendly interface, devoid of cumbersome controllers, ensures a smooth transition for users into the future of computing. With Spacetop, the boundaries between physical and virtual realities blur, unveiling the limitless potential of AR technology in personal computing.

**Reference:**<http://surl.li/tnxso>

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**IT 3<sup>rd</sup> year**



### **Revolutionizing Workflows: The Impact of Robotics Process Automation (RPA)**

In today's rapidly evolving digital landscape, Robotics Process Automation (RPA) has emerged as a game-changer, offering organizations the ability to streamline operations, enhance productivity, and drive significant cost savings. RPA utilizes software robots or "bots" to automate repetitive, rule-based tasks traditionally performed by humans. These bots interact with applications and systems in the same way a human user would, enabling them to execute processes quickly, accurately, and without the need for human intervention. One of the key benefits of RPA is its ability to improve operational efficiency by eliminating manual errors and reducing processing times.

By automating routine tasks such as data entry, invoice processing, and report generation, RPA allows employees to focus on more strategic and value-added activities. This not only enhances productivity but also leads to higher job satisfaction among employees, as they can

dedicate their time to tasks that require human creativity and problem-solving skills. Moreover, RPA offers scalability and flexibility, allowing organizations to easily adapt to changing business requirements and scale their automation efforts as needed. This is particularly beneficial in industries with fluctuating workloads or seasonal demands, where RPA can help maintain consistent service levels without the need to hire additional staff. Despite its numerous advantages, successful implementation of RPA requires careful planning and consideration. Organizations must



identify the right processes to automate, ensure compliance with regulations and standards, and provide adequate training and support to employees affected by the change. Additionally, organizations should continuously monitor and optimize their RPA processes to ensure they are delivering the expected benefits.

Overall, Robotics Process Automation represents a significant opportunity for organizations to transform their workflows, drive operational excellence, and stay competitive in today's economy.

**Reference:**

<https://www.slideshare.net/VenkateshBandi8/robotic-process-automation-13668944>

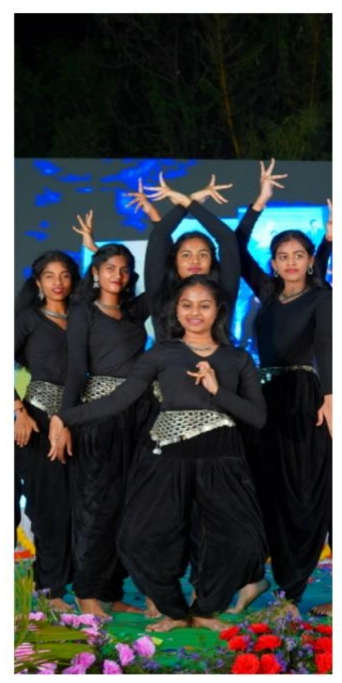
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