

DEPARTMENT OF COMPUTER SCIENCE [PG]

ISBN No: 978-81-956813-4-1

# Proceedings of National Student Research Symposium SRS 2022

### Organized by



# DEPARTMENT OF COMPUTER SCIENCE [PG] KRISTU JAYANTI COLLEGE (AUTONOMOUS)

Kothanur P. O, Bengaluru, Karnataka, India ,560077

18<sup>th</sup> October,2022

ISBN No: 978-81-956813-4-1

# Message from Principal



**Rev. Fr. Dr. Augustine George,** *Principal* 

The advancement of new technology has been taking place since the beginning of human history. Over the years, technology has revolutionized our perspective of the world. It has created amazing tools and resources, putting each person's most useful information at their fingertips. Modern technology has made it possible for the discovery of many functional and utility devices like the smart watches and the smart phones. With all of these revolutions, technology has also made our lives easier, faster, better and more fun. The future of technology is even more interesting than what is happening right now. In few years, we will be talking about driverless cars and robots working in factories. We're in the golden age of innovation, an era in which digital technology is transforming the underpinnings of human existence. Research activities across all the fields pave the way for the world to strive forward with huge advancements. As an educational institution, encouragement and support to research can be provided by establishing a suitable platform for the research community, to interact with each other and to share the knowledge. Having this objective, National Student Research Symposium 2021 (SRS), was organized last year which received an overwhelming response.

SRS 2022 has been planned to provide the same benefits and learning experience to all the participants. Sessions on different domains from eminent professors and opportunity to network with the researchers will help the participants immensely in their research career. I believe strongly that, this will stand as a great source of knowledge for the researchers. I congratulate the Department of Computer Science (PG) for the initiatives taken tobring the researchers across the nation in a common platform. With great pleasure and pride, I welcome all the participants and convey my best wishes for SRS 2022.

# Message from Vice Principal



**Fr. Lijo P Thomas** Vice Principal & Chief Finance Officer

Information technology has surpassed the industrial and agricultural revolutions in prominence. It is this magnificent power of computing that is prompting the utilization of Information Technology in each segment of human activity be it communication, banking, education, amusement, administration, etc. Machines that have broadened man's mechanical power and his accommodation and solace, Information Technology, is expanding the mind and scholarly power of humankind. The National Student Research Symposium (SRS) 2022 would be an excellent forum to exchange scholarly knowledge, ideas, views, and findings on emerging technologies.

It gives me an immense pleasure to note that the Department of Computer Science (PG) of Kristu Jayanti College is bringing out the proceedings of the National Student Research Symposium 2022. Reading through the pages will enlighten you on the most recent research discoveries, difficulties, creative solutions, and responses to important topics.

I congratulate the participants, Delegates, Organizing Committee, faculty members and students for their outstanding contribution to organizing this Symposium successfully. Wishing you all the best!

# Message from Dean



**Dr. Calistus Jude AL,**Dean, Faculty of Sciences

I am happy to know that the Post Graduate Department of Computer Science is organizing the National Student Research Symposium. Such a forum would provide a public stage for presenting and discussing their research work and will help the students of the department and the participants from other institutions to advance their research aptitude and strengthen their professional skills. I anticipate that this symposium will promote foster quality and innovative research, inter-domain collaboration and transform our understanding of the conventional and contemporary concepts and processes in the field of information technology. I appreciate the organizing team, the student coordinators and the participants, and wish the symposium all the best.

## Message from Cheif Convener



**Dr. R . Kumar,**Head,Department Of Computer Science (PG)

Advanced computer education exists on the periphery of current society's computer-based sociotechnical processes. As a result, it has also become a goal to improve diverse computer applications for different sectors and purposes. Satisfying the prerequisites of the latest information systems calls for ideal computational education. National Student Research Symposium (SRS) 2022 strives to be one of the most far-reaching meetings concentrated on the different aspects of Computer Science and Information technology. It will undoubtedly serve as a forum for academic and professional specialists to discuss current developments in the burgeoning automotive era. Special appreciation to the Faculty coordinator, Student coordinators and the organizing committee. We trust the delegates can acquire useful information from the proceedings. We look forward to the contributions during discussions and publications providing the foundation for future developments in all digitized sectors. On behalf of the Organizing and Advisory Committee, we take great pleasure in welcoming the delegates to the SRS 2022 to foster progress in the field by contributing with your expertise.

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#### 1. Impact of Artificial Intelligence in Human Life

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Abstract:- With a growing demand for automation, efficient results, ability to perform dangerous tasks, Artificial intelligence has taken over various fields of human expertise, Artificial intelligence is now advanced to a whole new extent, tasks which were nearly as impossible for a human being to perform are now accomplished with the help of Artificial intelligence, whether to identify a person in a crowded room with the help of Facial recognition, to get personalized results for a product in the field of shopping, and various outcomes which are difficult to be performed within a limited time by a human being can be performed within seconds. All this is possible with the help of Artificial intelligence, people have misconception about Artificial intelligence people believe Ai. To be Robots which cause destruction and chaos, but in general Artificial intelligence is a broad term which is more than robots and programs in this paper with the help of various references we tried to discuss the history, current status, its future scope and how does Artificial intelligence play an important role in our life, is it reliable? Or it has drawbacks.

Keywords:- Artificial intelligence, machine learning, causes, impact, human intelligence.

#### 2. Ethical Concerns of Neuralink: Do we really need it

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**Abstract:-** Artificial intelligence I has been around for years and has been a fundamental part of many products we use today. There's been a recent push to use AI, which has led people to think about how we can make our future safe from the rapid growth of technology. Elon Musk and the Neuralink team have come up with a device called as Neuralink. Neuralink is a brain chip that will allow humans to connect to themselves. This technology could augment human intelligence and give us hope for competing with A.I. The purpose of this study is to examine whether the invention of Neuralink is a blessing or acurse to the mankind. The study was done from 01/09/2022 till 30/09/2022. Both primary and secondary data collection was done to gain knowledge about Neuralink. The research depicts the knowledge of the general public about Neuralink and their opinions of its existence.

**Keywords:**- Keywords-Neuralink, Elon Musk, brain-machine interface.

### 3. An Emotional Well Being – Towards Mental Health Monitoring By Developing Chatbots and Evaluating It by Inducing Artificial Intelligence

#### Kajel Arockia, Amala A, Roselin Selvarani D

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Abstract:- Purpose of work: Artificial intelligence (AI) technology has both the potential to transform mental health care and potential pitfalls. This white paper provides an overview of AI and its current applications in healthcare, an overview of recent original research on AI with a focus on mental health, and given its current limitations and areas for further research, learn how it can complement clinical practice. Objective: Ethical implications of AI technology. This paper aims to examine AI chatbots that consider the social impact of these technologies. These are programmed with therapeutic technology to help people with anxiety and depression, but the technology's promise is undermined by concerns about the Chabot's effectiveness, privacy, and security. It is a major public health concern and should be an important part of the healthcare industry. However, development in this area seems to be rather slow. In recent years, AI technology has been attracting attention in various industries, including mental health. Methodology: Using advanced AI techniques and machine learning algorithms, personalized care is now possible with a focus on providing emotional support to a specific person. This article analyses different mental health monitoring systems, namely virtual counselling, precision therapy, and diagnostic systems, by reviewing the algorithms and parameters used in each system. Summary: We have proposed a system aimed at personalized mental health care that combines the above systems. Chatbots serves to be a scalable solution that facilitates an interactive means of engaging users in behavioural health interventions driven by artificial intelligence. Although some chatbots have shown promising initial efficacy results, there is limited information about how people use these chatbots. Understanding is an important step in improving chatbots design and providing information about chatbots strengths and weaknesses.

Keywords:- AI, mental health, deep learning, machine learning, depression

#### 4. Use of IT in medical field with reference to Pacemakers: Awareness and Performance

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**Abstract:**-The Information Technology (I.T.) sector has helped various other sectors over the years. The medical sector is gifted with many equipment's developed by the I.T. sector. The purpose of this research is to study the use of I.T. in medical field with reference to Pacemakers and measure its awareness and performance. The primary data was collected for the study in the form of online as well as offline survey with the help of questionnaire from 1/09/2022 till 30/09/2022. The questionnaire was posed to general public as well as the people who got implanted with pacemaker. The study also used secondary data which was extracted from past research papers, news articles and online video interviews. The methodology used in the paper is data analysis using graphs and diagrams with the help

of MS excel and also content analysis with statistical inferences from past literature and secondary data collected. The Study found that the people are aware about pacemakers at smaller extent and the performance of pacemakers is really winning hearts of the CVDs patients and gave them a chance to define their life goals with much bigger boundaries of health and life. The limitation of the study is the small sample size which was due to the time constraint and the territory of the survey restricted to Goa, the study can further be improvised by considering bigger sample size and larger territory for primary data collection.

Keywords:- Pacemaker, Information Technology, Cardiovascular Diseases, Implantation.

#### 5. Cricket Match Prediction Using Machine learning

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**Abstract:** Cricket is currently one of the most played, supported, and fascinating sports in the world, and its success is dependent on the appropriate use of machine learning and artificial intelligence (AI). The information relating to cricket matches expands along with the amount of games played over time. and the number of people participating overall is rising quickly. Additionally, the significance of big data analytics and the opportunities for properly employing this big data in a variety of advantageous ways are also growing. future projections using machine learning models or big data techniques, such as choosing team players, picking the winner of a game, and many other more future predictions. The supervised ml linear regression model was used to forecast team scores in the absence of big data and big data.

### 6. The epistemology on Intelligence System : A Heuristic Assessment on Rule-Based Expert Systems

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**Abstract:** - Rule-Based System technology, which is at the heart of automated processes, supports the development of knowledge-based systems and applications as well as intelligent algorithms and software that may provide specific problem-solving expertise in a given sector by leveraging domain-specific data. Rule-based systems evaluate and modify data by using knowledge that is represented as facts, objectives, and rules. Expert systems are made to convert the knowledge of human specialists into a set of hardcoded rules that may be used to process input data. The rules often take the most basic form

of conditional statements (if a, then do x, else if b, then do y). As a system becomes increasingly complex, more rules are required to define it, making it more difficult to model for all possible outcomes. As a result, these systems should only be utilised for minor difficulties. These are essentially computer systems that use rules to do a variety of tasks like diagnosis, problem solving, interpretation, or choosing a course of action in a certain situation. These can also be used for natural language processing, lexical analysis, and the creation or interpretation of computer programmes. They are also used in systems with human-made or curated rule nodes.

#### 7. AI in Advertisement – A Study on Effects of AI Based Advertisements on Consumers

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Abstract:-Artificial intelligence (AI) is essentially the emulation of human intelligence in devices that have been designed to act and think like humans. The use of data and AI is rapidly changing advertising. Customers are noticing these changes in the chatbots that assist them in making purchasing decisions as well as the personalised ads on their web browsers. But what does advertising that uses AI actually mean? Artificial intelligence (AI) in advertising refers to the emulation of human intellect in devices that are designed to act and think like people based on the data that is provided to them. They make better decisions in the future by using historical data to draw lessons from the past. Advertisers may utilise AI to make decisions more quickly, target the required audience, and provide more personalised experiences. most recent disruptive technology is artificial intelligence (AI), which has the greatest potential to alter marketing. Practitioners everywhere are attempting to determine which AI technologies are most suited for their marketing role. Marketing applications has not yet translated into widespread use. As a result, research into AI in marketing is crucial. The quick development of AI in marketing indicates that most companies will soon adopt it.

#### 8. Universal Speech Translator

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**Abstract:-** In summary, Meta explains that this all-in-one translator is "driven by the goal of breaking down language barriers on a global scale" using machine learning technology. From a technical perspective, "This is a conditional computational model based on the Sparsely Gated Mixture of Experts, trained on data obtained using novel and effective data mining techniques tailored to low-

resource languages. It is a model that forms the basis of universal translation. In the system, BLEU (short for Bilingual Evaluation Understudy) he achieves an improvement of 44%.

#### 9. Artificial Intelligence In Agriculture

#### Chaitra G

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**Abstract:**- According to the Food and Agriculture Organization of the United Nations, by 2050, there will be an additional 2 billion people living on the planet, yet there will only be an additional 4% of land under cultivation. In such a situation, more effective agricultural practises can be achieved using recent technical developments and fixes for the industry's current bottlenecks. Direct use of AI (Artificial Intelligence) or machine intelligence in the agricultural industry could represent a paradigm shift in the way farming is now carried out. A farmer may accomplish more with fewer resources thanks to AI-powered farming solutions, which also improve quality and ensure speedy GTM (go-to-market) strategies for crops. The current article offers a perspective of how AI might fuel the various agricultural sectors. Additionally, it looks into future AI-powered concepts and potential difficulties.

## 10. A Novel Approach for Guarding Forest Security from Dangerous Environment Using Artificial Intelligent and IOT

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Abstract:- Having accurate, detailed, and up-to-date information about the location and behavior of animals in the wild would improve our ability to study and conserve ecosystems. We investigate the ability to automatically, accurately, and inexpensively collect such data, which could help catalyze the transformation of many fields of ecology, wildlife biology, zoology, conservation biology, and animal behavior into "big data" sciences. Artificial Intelligent-based image processing algorithm is developed to detect the type animal shown in the input image. CNN is able to classify the input image into categories. The main aim of our project is to protect forest guard and mahout from animals. Animal detection system is designed to detect the presence of animal and offer a warning. In this project we use Raspberry-Pi to detect the movement of the animal through OpenCv and Coco model datasets and send the Voice signal to the user using IOT and ARTIFICIAL INTELLIGENT Techniques.

#### 11. Brain Controlled Car For Disabled Using Artificial Intelligence

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**Abstract:-** This document considers the improvement of a brain pushed automobile, which might be of excellent assist to the bodily disabled people. Since those vehicles will depend handiest on what the man or woman is questioning they will for this reason now no longer require any bodily motion at a part of the man or woman. The automobile integrates indicators from lots of sensors like video, climate monitor, anti-collision etc. It additionally has an automated navigation gadget in case of emergency. The automobile works at the asynchronous mechanism of artificial intelligence. It's an excellent boost of era with a view to make the disabled, abled. In the 40's and50s, some of researchers explored the connection among neurology, records theory, and cybernetics.

#### 12. Artificial Image Generation Using Generative Adversarial Networks

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Abstract:- The Generative Adversarial Networks (GAN) is the new framework of computer vision that has been in trend in recent years. The GANs model work on adversarial training concepts which makes the model more efficient and powerful in learning and representations. The concept of GANs is that we simultaneously train two models: which is a generative model that takes the data, and another model is a discriminative model that estimates the probability of the data came from the data (training data). The two models compete with each other to get the respected output. In this research paper, we have summarized the GANs. The GAN is further explored, describing about the models used in style transfer and image translation, including the short information about the image translation. Finally, describes a particular model, called as pix2pix (a model of GAN) and discussed about application of it.

#### 13. AI in Indian Railways

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**Abstract:**- The railways are one of the most used means of transport globally and especially in India which is the second largest in the world. A wheel is cast every 1.5 minutes. An average of 700 wheels are manufactured every day. Railway wheel is an assembly of two wheels fixed to the axle by interference fit and they rotate along with the axle, without any independent relative movement as in the case of other automobile wheels. We mainly focus on the manufacturing of wheels in our paper. Our aim is based on the quality checking of the wheel after it is cast.

#### 14. Opinion Mining - Classification based on different perspectives and behaviour

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Abstract:- Now a days as we know data grows day by day big data is overtaken data mining in modern times because, as we all know, data is growing every day. Text mining is one of the methods used in data mining to obtain structured or high-quality information from textual information. It helps the firm in locating valuable information. The Sentiment analysis and opinion mining is the field of study that analyses people's opinions, attitudes, emotions from written language. In many real-world applications, sentiment analysis is critical for automatically predicting human behaviour, particularly on social media sites. Sentiment analysis, which belongs to the data mining domain research challenge, is also known as opinion mining. To determine the subjective attitude like sentiment from written texts, sentiment analysis is essentially a text mining method subsequently suggested by a new sentiment analysis strategy based on multi-class extraction techniques. There is list of algorithms were created utilising Big-data approaches to enhance sentiment analysis performance. This sentiment analysis systems are being applied in almost every business and social domain because opinions are central to almost human activities and behaviour. The usage of such analyses in modern times can be easily observed experimentally during public elections, movie advertisements, among many other fields, brand endorsements, social media, product and customer review based and etc.

#### 15. A Secure and Fast Approach for Encryption and Decryption of Password

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**Abstract:-** All information technology firms, regardless of size or nature, must prioritise information security, data security, or computer security. Information security refers to the safeguards used to secure data throughout its lifespan against theft, unlawful access, and corruption. To secure data, they use data security solutions that include tokenization, cryptography, and key management procedures. The goal of this research is to provide an effective hashing-based cryptographic method with desirable features that secures passwords during data transmission. To prevent hacking through SQL injection, when the database is compromised to gain access to the credentials stored inside, a new hashing technique has been created. The suggested algorithm offers a method to create a hashed password and permits authentication only to the legitimate users.

16. Virtual Battle Room

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**Abstract:-** The Battle room is a room with virtual reality of battle field effect for gamers. Gamers usually are addicted to realistic effect of game. The battle room is a prototype of TDM game in PUBG in which 15 minutes will allotted for each game. The gamer will be provided with 3D glasses, virtual gun and vest. The entire room will be 3D projected with effect of Battle ground. There will be an opponent who will be only visible through the 3D glasses. The match will be conducted for maximum of 15 minutes in which the score to win will be 20. The first to score 20 will be the winner.

#### 17. Analysis on Smart home and security using AI and IOT

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Abstract:- Internet of things is the next generation of the internet. It provides an easy way of life with comforts to human beings by managing and interacting remotely control of devices. On the other side, artificial intelligence is growing as a technology for creating autonomous systems that can observe their surroundings, learn from them, and use their surroundings to both learn from and make judgments. In this study we will talk about how AI and IOT both can be implemented in security and home automation. Home automation is an emerging technology that allows automation and coordination of all the home appliances in a comfortable, secure and more effect way. Nowadays as technology is spreading in a

large space all the appliances for home have become smart like TV, Fridge, Washing Machine, Lights, Doors all have become very easy and simpler to use. In this study we will talk about how to connect all these smart devices together and have a centralized control system. We use sensor in all over the home and make use of Artificial Intelligence as assistant to automatically analysis preference of a person living in the home and control the devices automatically based on the preferences of the person. This method is intended to help and offer assistance so that the disabled and elderly can be met at home. The system's smart home idea also raises standards of living in homes.

#### 18. Face Recognition Using OpenCV and Raspberry Pi

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**Abstract:**- Face recognition (FR) is a technique that is used to identify the individual identity of the detected object that can be known or unknown faces this leads to confusion allying face recognition. The "Face" of an individual, either known or unknown, is stored in the database which consists many faces as input information for validation. The human identification is recognized by these distinctive traits. Face is rectified and detected in the initial step in face recognition system's two-step process, which gathers quick human data unless the object is within a certain distance of the subject. The introduction, which differentiates every single individual face, is the other phase. This phase is then developed and replicated version of face picture recognition. Expert biometrics that have been produced use this technology the most. About the improvement of thinking on a range of specific facial perception issues. A robust approach with generalization may be developed with the aid of state-of-the-art techniques from learning, pattern, and vision of the computer, which are utilized in both recognition and presentation. Many methods are introduced, and it is also establishing its uniqueness by utilizing its domain expertise. Over the previous years, the crime rate has climbed. High-level security is offered in locations like heavy traffic and train stations, airports but it can be difficult to use and occasionally useless. Thus, a system that can quickly, cheaply, and efficiently identify suspect individuals must be developed. In this work, we describe a system that includes of a Raspberry Pi Zero coupled to a RaspberryPi camera module, which also has an OLED display and capacitive touch sensors. The LBPA technique is built using OpenCV, and the system is utilised to identify the face picture. This is followed by the Local Binary Pattern Histogram (LBPH) for FR utilising the Haar Cascade classifier.

#### 19. Peer to Peer Security in Social Networks

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Abstract:- In the present world, the use of social networks has increased at a phenomenal rate. The platforms such as Instagram, Facebook, WhatsApp, Twitter and many more. These social networks provide services and support peer to peer interactions via messaging, audio/video conferencing, and also sharing of data of various formats. Using these platforms for their communication has become easier to communicate and adapt whereas the scams behind these underlying networks is unknown. As a zero-trust possibilities, peer-to-peer( P2P) technologies promise to support end-to-end communication, demanding access control, insignificance and adaptability against suppression and massive data leaks through misused trust. This paper gives the survey of First, about how the security, confidentiality in social networks are prone to be. Second, how people are unaware of this demanding use of applications and analysis of the survey and the (P2P) technologies and its framework. As a third point, an inclusive analysis of proposed P2P-based online social network applications, frameworks and architectur@pinion Mining - Classification based on different perspectives and behaviour

#### 20. AI Vision: Third Eye for Blind People

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**Abstract:-** The power of IOT had made the life much easier and solved many of the real-life problems faced by today's world. Its like a salad bowl where we add the needed things to make a perfect salad. AI Vision had shown us even the computer can have the vision like the human do. In this paper we will learn how does an AI Vision contribute to a blind person who can see the world without an eye. Using the power of IOT we will see how a blind person can walk through the street just like a normal person. Finally, we will analyse how this technology can be improvised in other various ways that can be used for normal humans.

### 21. Comprehensive Analysis on Stress Levels of Students using Machine Learning

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Abstract— The prevalence of mental health problems and the need for proper treatment have led researchers to consider the application of machine learning to mental health problems. Students today are under constant high levels of stress for a variety of reasons. Many students are overwhelmed by harsh, stressful environments and receive inadequate support, with lasting effects on their lifestyles. will no longer be considered We discuss the findings on the obstacles and limitations machine learning researchers face in mental health issues. Furthermore, it provides specific recommendations for future research and development of machine learning applications in the field of mental health. Provides a system for educational institutions that allows administrators to track the expected load percentage of each enrolled student. Students may choose to complete surveys covering factors that contribute to psychological distress and anxiety. The survey results are fed into a pre-trained machine learning model that predicts each student's stress level.

#### 22. Artificial Intelligence in Stock Market

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Abstract:- Artificial intelligence is a hot topic these days. Artificial intelligence is expected to be the solution to all existing societal problems and will help reduce human effort as well as help improve the way people interpret the world around them. Technically, artificial intelligence can be defined as a field of computer science that emphasizes the creation of intelligent machines that think, work and react like human beings. As of today, 21artificial intelligence is being implemented in various fields such as medicine, engineering, agriculture, autonomous driving and flying, etc. Finance is also an upcoming field where artificial intelligence is being implemented. A stock market can be defined as an aggregation of various buyers and sellers of stocks. Shares or stocks can be defined as the ownership of a particular company and the attempt to determine the future value of a particular share of a company is known as stock market forecasting. Many argue that the stock markets are dynamic and chaotic in nature and there are various methods or techniques that investors use to invest in the stock markets. But due to this chaotic nature of stock markets, it sometimes becomes a bit tedious and difficult to use existing statistical and analytical methods to predict stock prices.



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Title: National Student Research Symposium Proceedings
Editors: Dr.Vinothina V, Dr.Kumar R
Published by: Kristu Jayanti College, Autonomous
Kothanur P. O, Bengaluru, Karnataka, India
Website: www. kristujayanti.edu.in
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