LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
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TECHERA

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Vision and Mission Statements of the Department: Mission and Vision statements of the department prepared in line with Institute Mission and Vision statements.

Department Vision (DV):

To emerge as one of the most preferred department for the budding engineers, aspiring to be successful IT professionals.

Department Mission (DM):

DM1: To inculcate team skills and leadership qualities in the student though projects, seminars and group activities.

DM2: To impart quality education with a well-designed curriculum, consistent with industry requirements, that equips the student to face the career challenges.

DM3: To cultivate the qualities of social awareness and service to the humanity among students.

DM4: To extend the student's learning beyond the curriculum, through workshops on cutting edge technologies.

Program Educational Objectives (PEOs)

Four to Five years after successful completion of graduation students will be able to:

PEO 1: Pursue a successful career in the area of Information Technology or its allied fields.

PEO 2: Exhibit sound knowledge in the fundamentals of Information Technology and apply practical experience with programming techniques to solve real world problems.

PEO 3: Demonstrate self-learning, life-long learning and work in teams on multidisciplinary projects.

PEO 4: Understand the professional code of ethics and demonstrate ethical behavior, effective communication, and team work and leadership skills in their job.

PROGRAM OUTCOMES:

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineeringfundamentals, and an engineering specialization to the

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

3. **Design/development of solutions:** Design solutions for complex engineering problems anddesign system components or processes that meet the specified needs with appropriate

8. **Ethics:** Apply ethical consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

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

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

7. **Environment and sustainability:** Understand the impact of the professional engineering solutionsin societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

principles and commit to professional ethics and responsibilities and norms ofthe engineering practice.

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

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

11. **Project management and finance:** Demonstrate knowledge and understanding of theengineering and management principles and apply these

to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

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

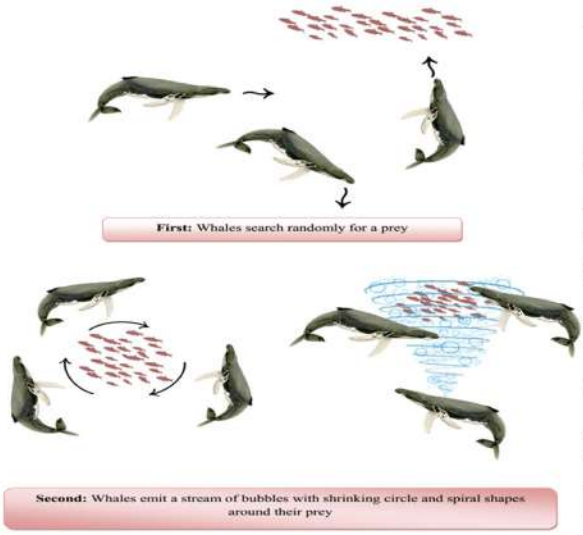
About the Department

The department of Information Technology was established in the year 1999 with an intake of 40 seats in UG program. Student intake is increased from 40 to 60 in the year of 2001. It is the one of the most emerging programme in LBRCE. As IT plays a remarkable role in the almost all sectors, due to this the need of Information Technology Engineers increased who could gain knowledge in recent technologies. Our department is intended to train the students in elementary courses and cutting-edge technologies like Digital marketing, Social networking, Digital communication, Cloud computing, Android application, and Big data for solving many social and business problems.

Our future Software Engineers, Entrepreneurs, and Researchers are encouraged with inventive approach. We have an excellent infrastructure and advanced labs to expedite our students. The Department facilitates innovative practices such as student internships, mini and major projects to meet the requirements of employment, teaching-learning process and entrepreneurship. To upgrade the knowledge of students, department offers many tools and Software applications. The LBRCE-CSI students' chapter has been actively organizing events like Technical Seminars, Workshops and Guest lecturers.

The Department has well qualified and experienced faculty. The department has 16 teaching faculty with 4 Doctorates and the rest with M. Tech. Four faculties are pursuing Ph.D in various Universities. The faculties are engaged in research activities (including funded projects) in their areas of specialization to subsidize the knowledge transfer in their corresponding arenas. Numerous research papers have been published in National, International Journals and Conferences by our faculty and students.

Improved Whale Optimization Algorithm Case Study: Clinical Data of Anaemic Pregnant Woman



WOA is a meta-heuristic algorithm possessing the proper potentiality in solving complex numerical function optimization problems. It works well, but poor in the convergence at exploration and exploitation phases. In order to enhance the convergence enforcement of WOA, a novel constitutional appraising strategy based WOA has been set forth in this paper. In this scenario, constituent states are fully utilized in each of the iterations to supervise the subsequent gazing process, and to counterbalance the local exploration with global exploitation. We fix up with the mechanism together with the convergence straight stuff of the enhanced algorithm. Comparable investigations are supervised on various mathematical benchmark function optimization problems. Simulation results confirm, with statistical significance, that the proposed scenario is more efficient in the convergence performance of WOA. In addition to this, we applied the same technique to a clinical dataset of an anaemic pregnant woman and obtained optimized clusters and cluster heads to secure a clear comprehension and meaningful insights in the clinical decision-making process.

Optimization algorithms are tested based on number of gazing agents and iterations. The fitness of each agent is calculated on each iteration. If the algorithm works good when it secure best fitness in the exploration phase. The performance of the algorithm may fall down when it gets inefficient gazing iterations before better topography is derived. To overcome this problem gamma γ factor also called convergence factor is used

Instead of inefficient gazing iterations before obtaining better topography, there may be a chance to improve the convergence performances of gaze agents by measuring the truths, whether they are better than the previous one but not by the corresponding fitness values using the above convergence factor.

Dr.D.Naga Raju
Professor & HOD

A Novel feature selection based classification algorithm for real-time medical disease prediction

In the current medical databases, feature extraction and disease prediction are the essential requirements to Chronic Obstructive Pulmonary Disease (COPD) and Alzheimer's diseases. Most of the medical databases have heterogeneous features with different levels of severity patterns. Feature extraction and classification of high risk patterns may have potential benefits for decision making. In the medical applications, data classification algorithms are used to detect the disease severity that can help in early prediction of new type of disease patterns. Also, machine learning algorithms are more accurate, high true positive rate and reliable for heterogeneous features. Traditional classification models such as Naïve Bayes, SVM, Feed forward neural networks, Regression models,.etc are used to classify the homogeneous disease datasets with limited feature space.As the size of the Alzheimer's disease patterns and its categories are increasing, traditional data classification models are failed to process the disease patterns due to inconsistent, class imbalance, and sparsity issues, which may affect the disease prediction rate and error rate. Therefore, an efficient classification model for predicting the severity level of the heterogeneous feature types is essential with high true positivity and low error rate. In this paper, a novel feature selection based classification model is proposed to improve the disease classification rate and testing the new type of disease patterns for real-time patient disease prediction. In the proposed model, a novel probabilistic based feature selection measure for classification algorithm is designed and implemented for real-time patient disease prediction using the training datasets. Experimental results show that the proposed feature selection based classification algorithm is better than the traditional algorithms in terms of true positive rate, error rate and F-measure are concerned.

Introduction:

Abnormal behavior and loss of memory could indicate a brain disorder that is neurodegenerative, known as Alzheimer's disease. Neuropsychological examination and psychometric assessment mainly determine the

clinical evaluation. The advantage of using automation for AD detection lies in the improved accuracy and the increased speed of the process of treatment. Structural neuroimaging can provide good markers for the detection of diseases such as AD because of their sensitivity to degeneration. The physician's ability to providedunderstand and utilize clinical information is vital when it comes to clinical decision making and diagnostic reasoning. Various decision support tools have been developed in the past few years to assist the medical expert to analyze the data. These tools are necessary for ensuring quality health care by minimizing the risks and chances of misdiagnosis which can easily occur as a result of human error.

AD detectors fall into three typical types. The types which base on cortical thickness are the most used ones. An example of a technique which reduces dimensions efficiently is Principal component analysis. It removes the repetitive elements from the data and does not alter a large part of the useful information, hence resulting in data compression. The technique converts the original feature data to an ordered, and uncorrelated variable set called the Principal Components (PCs) so that the first few PCs contain most of the original variables' variations. PCA can greatly reduce the brain image data's dimension. Support vector machine has, however, produced better results in the categorization of clinical diseases. It is a supervised learning model that allows high dimensional data to be trained and classified. Some studies prove the SVM's high accuracy of AD classification using high dimensional data set.

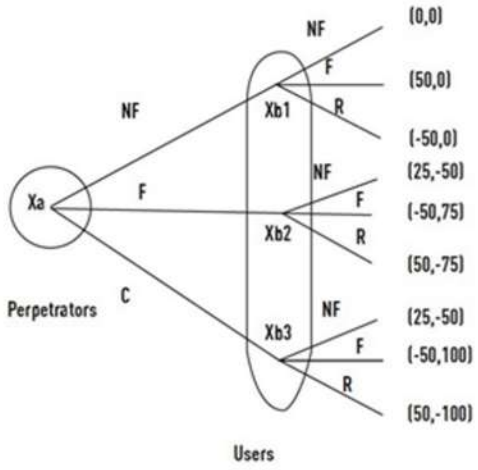
Most of the traditional approaches consider the features as independent and linear. Chronic Obstructive Pulmonary Disease (COPD) is one kind of critical chronic diseases, and it takes a long period to evolve from mild symptoms to severe illness and death. COPD is often caused by tobacco smoking, air pollution, occupational dust, etc.The signs and symptoms of exacerbation vary from patient to patient. This makes it hard to predict if a COPD patient is stable or is at exacerbation.

Conclusion:

Disease prediction in real-time is one of the major issue in IOT based applications due to noise in the imaging data or feature selection problem. Also, most of the existing disease classification models are dependent on limited number of features and filtered disease data. Therefore, an efficient classification model for predicting the severity level of the heterogeneous feature types is essential with high true positivity and low error rate. In this paper, a novel feature selection based classification model is proposed to improve the disease classification rate and testing the new type of disease patterns for real-time patient disease prediction. In the proposed model, a novel probabilistic based feature selection measure for classification algorithm is designed and implemented for real-time patient disease prediction using the training datasets.

Dr.S. Naganjaneyulu
Professor

Analysis of Spread of Fake News on Messaging Platforms Using Non-Cooperative Game Theory:



In recent times with the growth of social media and messaging platforms, a lot of information is in circulation, most of which are click bait, advertisements or misinformation. The issue arises when fake news modelled as real news reaches thousands of users, altering their perceptions. This is especially problematic when it leads to cases of mob lynching and other forms of violence or defamation. Most algorithms used in field for tackling fake news utilize natural language processing and machine learning for detection but are not involved in controlling the spread of fake news. This project aims to mitigate the gap by modelling this problem as a game using non - cooperative game theory.

The game is currently being analyzed using the concept of sub game equilibria for infinitely repeating extensive form games to find the Nash equilibria. The findings are needs to be compared to the result of a controlled testing environment to simulate the game to conclude that over a long period of time the behavior of the game in theory and practice merge which can be used by administrators to control the spread of fake news.

Due to the widespread use of social media and messaging platforms, falling prices of smart phones and ease of accessibility to the internet, almost everyone is virtually connected to one another, leading to rapid spread of information. In recent times, misinformation has been forwarded with the aim to change perceptions of candidates in elections by causing defamation, to increase online readership to generate revenue, to spread hoaxes which can lead to unfortunate cases of mob lynching, resulting in possible death of the victim. First, it creates mistrust amongst the users of such platforms on which fake news is circulated causing harm to the name of the platform. Second, misinformation has led to several incidents in which a warning circulated led to beatings and deaths of innocent people mistaken for

kidnappers or criminals. Third, fake news undermines authentic news as the spread of sensational news is much higher than real news which adversely affects situations in which public image is crucial such as elections. Many approaches have been developed to detect fake news using natural language processing, machine learning, pattern recognition, etc. But analysis of the spread of fake news is paramount to control its spread. For social media platforms it is economical and for the government methodical. Game theory is the study of strategic interaction between rational decision makers known as players and is widely applied in the fields of social sciences and computer science. Basically, game theory tries to model a problem into a game to determine the moves and strategies considering the rationality of players and hence to predict the likely outcome. In game theory, games can be modelled as cooperative or non-cooperative depending on how multiple players act, that is, either independently or as a group. In cooperative game theory, coalitions between decision makers, that is, players are formed due to external enforcement. In contrast, non-cooperative game theory deals with games in which either such coalitions cannot be formed or need to be self-enforcing. The proposed model considers a non-cooperative game as there cannot be a coalition between the users and perpetrators of fake news. The game is identified as a sequential extensive form game as players take turn to act and the game doesn't end after a single simultaneous move taken by the players as in normal form or simultaneous move games. All players know the set of players, their strategies and their payoffs, hence it is a game with complete information but do not know about all other players past decisions, hence having imperfect information. Each player knows all their past moves, that is, have perfect recall and it is assumed that all players are rational, thus they choose a strategy that gives the highest possible payoff. The objective of this project is to analyze how fake information spreads on a messaging platform using non-cooperative game theory.

BTejaswi
Assistant Professor

Software Reliability Growth models

Software Reliability is defined as the probability of failure free software for a specified period of time in a specified environment.

In this We have Two types of models 1.Times between Failure models (TBF) 2. Failure count models (FC)

Times Between Failures (TBF) Models	Failures Counts (FC) Models
Geometric	Generalized Poisson
Jelinski-Moranda	Generalized Poisson-User specified interval weighting
Littlewood-Verrall Linear	Nonhomogeneous Poisson (NHPP)
Littlewood-Verrall Quadratic	Schneidewind
Musa Basic	Schneidewind- ignore first "s-1" test intervals
Musa-Okumuto	Schneidewind – total failures in first "s-1" test intervals*
Nonhomogeneous Poisson (NHPP)	Shick-Wolverton*
	Yamada S-shaped

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From the above two models we have different sub models. Each and every model has its own mean value function for finding the parameters to estimate the reliability.

According to Defence Acquisition University the 10 factors for increasing the software reliability and maintainability:

1. Good Statement of requirements,
2. Use of modular design.
3. Use of higher order languages,
4. Use of reusable software,
5. Use of a single language,
6. Use of fault tolerance techniques,
7. Use of failure mode and effect analysis,
8. Review and verification through the work of an independent team,
9. Functional test- debugging of software, and
10. Good documentation.

Machine Learning Framework for Resource Allocation Assisted by Cloud Computing

The proposed machine learning framework is shown in Fig. 2. At the cloud, a huge amount of historical data on scenarios are stored using the cloud storage. The historical data has a lot of attributes, including the user number, the CSI of users, international mobile subscriber identification numbers (IMSIs) of users, and so on. Learning from a large number of raw data with many attributes generally requires a large amount of memory and computation power, and it may influence the learning accuracy . Therefore, the irrelevant attributes can be removed without incurring much loss of the data quality. In order to reduce the dimensionality of the data and enables the learning process to operate faster and more effectively, feature selection is carried out to identify and remove as many irrelevant attributes as possible.

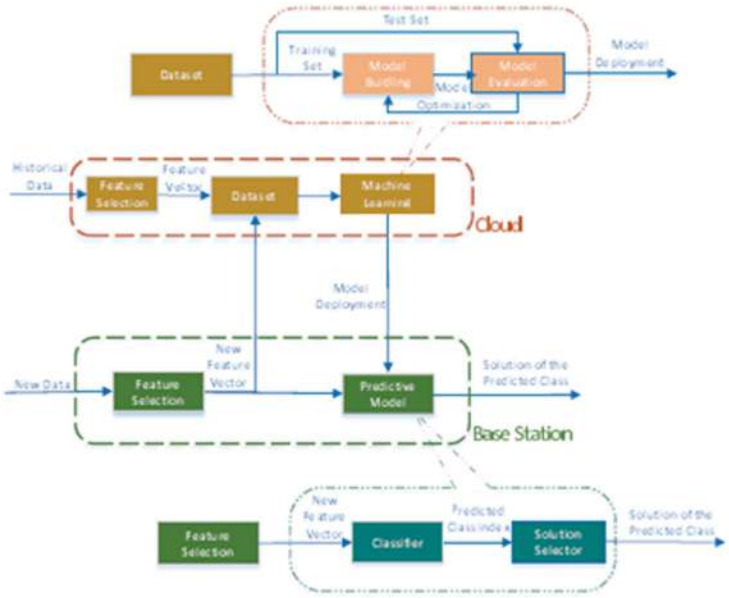


Fig. 2. A Machine Learning Framework of Resource Allocation

Feature Selection: feature selection, some key attributes are selected from the historical data and presented as a feature vector. However, there may exist some operation faults in the data measurement, transmission, and storage, which results in the abnormal, incomplete or duplicate values in feature vectors. Therefore, necessary preprocessing is required to delete erroneous or duplicate feature vectors. Then, all remain feature vectors are collected to form a very large dataset.

Data set: Further, all feature vectors in dataset are split randomly into a training and a test set. Normally, 70-90% of the feature vectors is assigned into the training set.

Machine Learning:With the training set, a supervised learning algorithm in machine learning is adopted to find the similarities hidden in historical data. By doing so, a predictive model can be built which will be used to make resource allocation decision for future unexpected scenario. More specifically, with the aid of cloud computing, advanced computing techniques can be used to search the solutions for the optimization problem with more computational time.

K.Lavanya
AssistantProfessor

File Storage

This is undoubtedly one of the major areas where cloud computing is used. Cloud computing facilitates the easy storage, access and even retrieval of files. Normally these files are sourced from any one of the many web-enabled interfaces. The interfaces for these web services are quite easy. This is because, at any time and place, a user can enjoy security, high speed, scalability and availability of the environment. Businesses only pay for the storage cost of what they are actually consuming. This eliminates worries associated with supervision of daily maintenance of the infrastructure used for file storage.

Backup

The use cloud computing has significantly simplified backing up of important data. This is because it is an easy operation and is not time-consuming. People easily store items in the cloud and still access them. It is beneficial because it does not run out of space to backup media. Back up that is cloud based is a very powerful solution because automatic scheduling is possible. Storage of information is in a remote and secure location. The stored files are always available and it is impossible to exceed storage capacity. This is the main reason why cloud computing has increased in popularity as data can easily be backed up on cloud platforms. Backup through cloud computing only needs one to dispatch data automatically to a location of choice through the wire.

Growth Planning

This is a unique use of cloud computing. Businesses can use cloud computing to plan for growth without an expensive upfront investment. This is facilitated by file sharing, cloud management systems and data analytics.

Disaster Recovery

Small business experience great difficulty when it comes to disaster recovery, this has caused many to go out if business following important data loss in a disaster. This is a critical instance where cloud computing is used as it can host important data for organizations to protect them in the case of an eventuality. Disaster recovery with cloud computing is much more effective, cheaper and faster compared to the traditional disaster recovery sites that were characterized by high costs, rigid procedures and fixed assets. Disaster recovery that uses cloud computing uses a mesh of various physical locations.

Multiuser: Linux operating system is a multiuser system, which means, multiple users can access the system resources like RAM, Memory or Application programs at the same time.

Multiprogramming: Linux operating system is a multiprogramming system, which means multiple applications can run at the same time.

Hierarchical File System: Linux operating system affords a standard file structure in which system files or user files are arranged.

Shell: Linux operating system offers a special interpreter program that can be used to execute commands of the OS. It can be used to do several types of operations like call application programs, and so on.

Security: Linux operating system offers user security systems using authentication features like encryption of data or password protection or controlled access to particular files.

S.Nagamani
Assistant Professor

Cloud computing for Business Applications

Businesses of all sizes are shifting some or all of their data and applications to cloud computing environments to take advantage of the many benefits available to them, but cloud computing is still an emerging set of technologies. The benefits to the business may not be apparent.What does cloud computing offer a business that is used to traditional compute models? Here are several of the business benefits of using cloud computing.

Cloud computing consists of software and hardware resources that have been made available on the internet and as managed third party services. Cloud computing services heavily rely on high-end networks of server computers and advanced software applications. There are several types of cloud computing, these include network storage, software and virtual information technology. Generally, cloud computing systems are designed to provide support to large numbers of surges and customers in demand. Many cloud services companies allow users tostore data that is inclusive of media files, documents emails, contacts and calendar information.

Where Cloud Computing Is Used?

Elasticity, optimal resource utilization, cost reduction and superior flexibility have allowed cloud computing to be recognized. Cloud computing is used literally everywhere around the globe, some of the main cloud computing uses in business include the following:

IaaS and PaaS

Companies are increasingly using Infrastructure as a Service (IaaS) to save on charge of investing to obtain an IT infrastructure, maintain as well as manage it. Organizations are quite keen on enhancing the speed of development on ready to use platforms for installation of applications.

Development and Test

The use of cloud computing is the most ideal in a development and test environment. This encompasses securing a financial plan via physical assets for setting up manpower, important time and your environment. Cloud computing technology has opened up accessibility to environments for specific needs at the fingertips of users. This usually combines mechanized provisioning of physical and virtualized resources.

Big Data Analytics

When cloud computing is leveraged, an important aspect that is offered is that it becomes possible to tap into huge quantities of data that is both structured as well as unstructured. This harnesses the advantage of business value extraction. Suppliers and retailers are readily extracting information that has been obtained from the buying patterns of consumers. This allows them to strategically target both marketing and advertising campaigns to a specific population segment.Social networking platforms are currently providing an analytics basis on behavioural patterns, which organizations are utilizing to obtain meaningful information.

k.Anupriya
Assistant Professor

R PROGRAMMING LANGUAGE

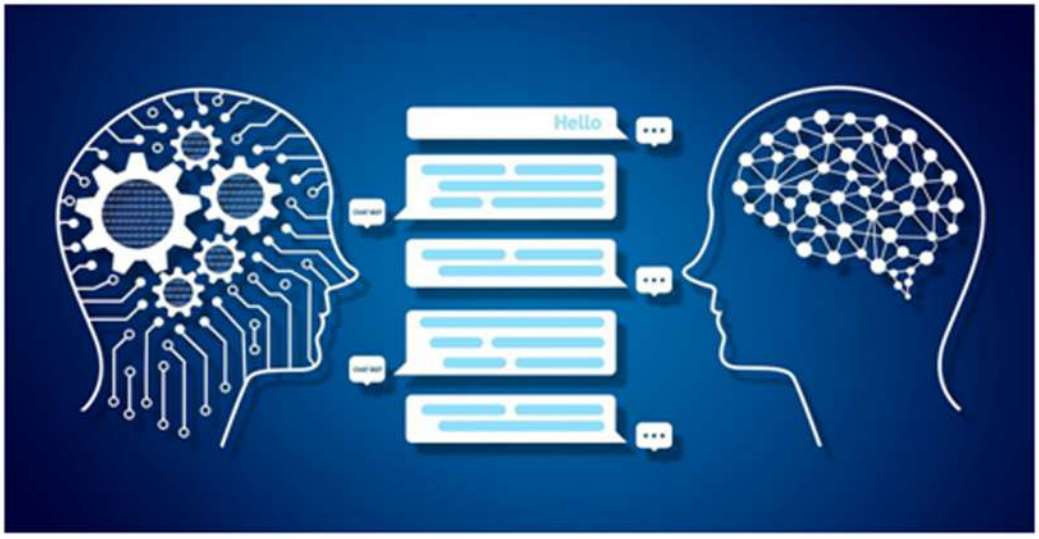
R is a programming language mainly used for graphics and statistical computing supported by the R Foundation. Statistical Computing is commonly used between data miners and statisticians for developing statistical software and data analysis. It's an important tool in data scientist's toolbox.

Popularity of R Programming among Data Scientists

- **Free open source language –** Run anywhere and anytime, anyone can download and modify the code and include their own innovations. No license restrictions issued under GNU (General Public License)
- **Cross platform compatible –** Run on several OS, varied software/hardware, used on Microsoft Windows, Macintosh, GNU/Linux, UNIX.
- **Most advanced statistical programming language –** Used as worldwide by several statisticians work on large complex objects, exchange data in MS-excel, ensure the accuracy of the code, work on advanced statistical analysis and so on.
- **Outstanding graphical output –** Splendid Hi-Tech graphical abilities that is unparalleled with any other statistical language.
- **Flexible 'n' fun –** Easy and fun to writes our own functions and distribute our own software as on add-on package.
- **Extremely comprehensive –** work on objects of infinite size and intricacy with ease, offering over 4,800 packages from various repositories relating to Data mining, Bio-informatics, Econometrics, and Spatial analysis.
- **Support extensions –** very extensible in its structure, supports matrix arithmetic, procedural programming and facility to extract data from Google.
- **Has vast community –** companies adopting R as the statistical Language created a vast community where 2million people are started with R.
- **Easily relates to other programming languages –** Quite friendly while importing data from Microsoft Excel, Microsoft Access, MySQL, SQLite, Oracle, and can also be easily associated to several databases using ODBC (Open Database Connectivity Protocol) and the ROracle package

CHATBOT

A Chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone. A Chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. However, from a technological point of view, a Chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP).



As you can see in this graphic, a Chatbot returns a response based on input from a user. This process may look simple; in practice, things are quite complex

Why Chatbots are important:

Chatbot applications streamline interactions between people and services, enhancing customer experience. At the same time, they offer companies new opportunities to improve the customers engagement process and operational efficiency by reducing the typical cost of customer service. To be successful, a Chatbot solution should be able to effectively perform both of these tasks. Human support plays a key role here: Regardless of the kind of approach and the platform, human intervention is crucial in configuring, training and optimizing the Chatbot system.

How a Chatbot Works :

The ability to identify the user's intent and extract data and relevant entities contained in the user's request is the first condition and the most relevant step at the core of a chatbot: If you are not able to correctly understand the user's request, you won't be able to provide the correct answer.

Returning the response: once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request. The answer may be:

- a generic and predefined text
- a text retrieved from a knowledge base that contains different answers
- a contextualized piece of information based on data the user has provided
- data stored in enterprise systems
- the result of an action that the chatbot performed by interacting with one or more backend application
- a disambiguating question that helps the chatbot to correctly understand the user's request

Which chatbot application is right for you:

There are different approaches and tools that you can use to develop a chatbot. Depending on the use case you want to address, some chatbot technologies are more appropriate than others. In order to achieve the desired results, the combination of different AI forms such as natural language processing, machine learning and semantic understanding may be the best option.In upcoming posts, we will give you an overview of the main chatbot applications so you can evaluate them based on your specific needs and desired goals. Let's consider a scenario, you want to buy some clothes, the first thought that would come to your mind is to go to a mall and get it. Now if there wasn't any mall then you would have to search the city for clothing shops which will be a hassle. Since the mall is available to you, you didn't have to search for any other shops. Likewise, a publishing platform is an environment where you can experience a chatbot. The popular chatbot publishing platforms are FB Messenger, Kik, Slack, Telegram, and WeChat.

K. Rajasekhar
Assistant Professor

Interactive Snoezelen Bubble Tube

A Therapy for thementally challenged people

According to census 2001, it is estimated that over 21million people in India are suffering from one or the other kind
of disability. The mentally challenged people are nearly 10.3%of the disabled people. This is quite a huge percentage. The Snoezelen therapy is now effectively being used for thedevelopment of the mentally challenged people.

The mentally challenged people cannot communicatewith others comfortably. They suffer from behavioraldisturbances. This often kills a mentally challenged person which leads him to resentment. They may get into depressionwhen they are alone and often feel disturbed and cannot come out of this state by themselves. One way to get them out of theirdepression is to provide them some entertainment in the formof music or by providing some colors appear in front of them.The bubble tube also provides multisensory stimulation andcures the people who are suffering from initial stages ofdementia.

The snoezelen therapy is now being used for curingthe people suffering from autism and other developmental disorders such as dementia and brain injuries.This concept is being used in many fields such asschools, hospitals and in many places. Ultimately the snoezelenbubble tube will be useful to provide entertainment to every Person. The snoezelen bubble tube will be a very useful productand as this is developed taking economic factors into Consideration, it is cost effective and is affordable to everyone.

M.Nalini sri
Assistant Professor

Machine learning for anomaly detection

In data mining, anomaly detection is referred to the identification of items or events that do not conform to an expected pattern or to other items present in a dataset. Typically, these anomalous items have the potential of getting translated into some kind of problems such as structural defects, errors or frauds. Using machine learning for anomaly detection helps in enhancing the speed of detection.

Intrusions are those activities that can damage information systems. Intrusion detection has been gaining broad attention. Anomaly detection can be a key for solving intrusions, as while detecting anomalies, perturbations of normal behaviour indicate a presence of intended or unintended induced attacks, defects, faults, and so on.

Machine learning algorithms have the ability to learn from data and make predictions based on that data. Machine learning for anomaly detection includes techniques that provide a promising alternative for detection and classification of anomalies based on an initially large set of features.

SUPERVISED MACHINE LEARNING FOR ANOMALY DETECTION

This method requires a labelled training set that contains both normal and anomalous samples for constructing the predictive model. Theoretically, supervised methods are believed to provide better detection rate than unsupervised methods. The most common supervised algorithms are supervised neural networks, parameterization of training model, support vector machine learning, k-nearest neighbours, Bayesian networks and decision trees. These supervised techniques have several advantages,

including the capability of encoding interdependencies between variables and of predicting events, along with the ability to incorporate both prior knowledge and data

UNSUPERVISED MACHINE LEARNING FOR ANOMALY DETECTION

These techniques do not require training data. They are based on two basic assumptions. First, they presume that most of the network connections are normal traffic and only a small amount of percentage is abnormal. Second, they anticipate that malicious traffic is statistically different from normal traffic. Based on these two assumptions, data groups of similar instances that appear frequently are assumed to be normal traffic and those data groups that are infrequent are considered to be malicious. The most common unsupervised algorithms are self-organizing maps (SOM), K-means, C-means, expectation-maximization meta-algorithm (EM), adaptive resonance theory (ART), and one-class support vector machine

SarvaniAnandarao
Assistant Professor

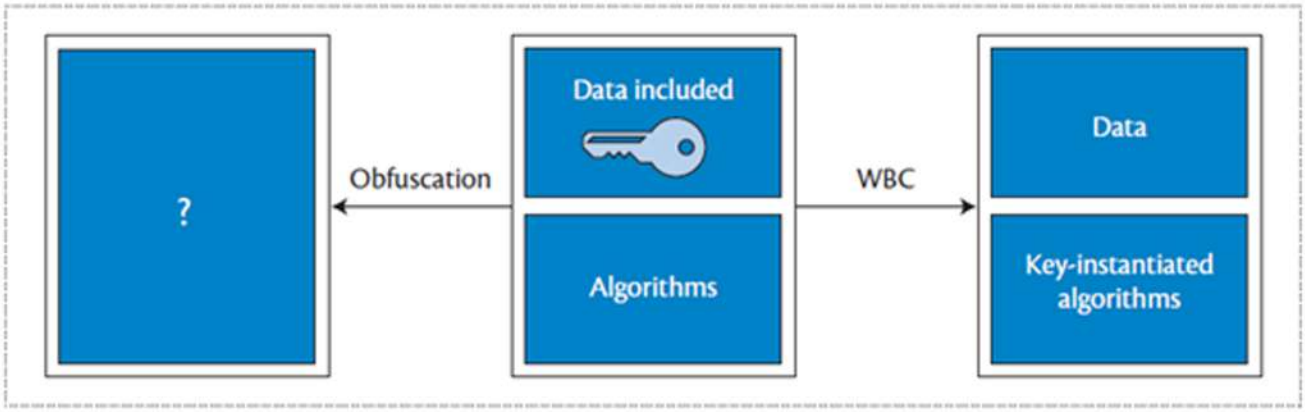


Figure 2. Code obfuscation strives to hide the complete program, flow, and variables. In contrast, in WBC the algorithm is public and only the key must be protected. This results in a key-instantiated algorithm, where key material hopefully can't be extracted.

An Attractive Notion

WBC enables us to implement cryptographic algorithms bundled with a key, with guarantees that adversaries can't extract this key.

Using WBC, we can solve problems in new ways, for instance, by blurring the distinction between public-key and secret-key primitives:

■Make public-key encryption from secret-key primitives. In principle, it's easy to construct a public key encryption scheme from a white-box implementation of a secret-key encryption algorithm. Anyone possessing the white-box implementation can encrypt a message, whereas only someone with the secret key can decrypt the message.

■Make digital signatures from message authentication codes. Similarly, using a white-box implementation of a keyed message authentication code (MAC) allows anyone to check a MAC, but only those knowing the key can produce such a MAC.

Software digital rights management (DRM) mechanisms. WBC could allow software-only DRM on user-owned devices. The verification of subscription or access rights could be made faster and independent of a hardware security module. This would affect services such as video on-demand or mobile TV.

■ Payment on smart phones. As per EMV specifications, transactions are validated through the generation of an ISO/IEC 9797 MAC based on the Triple Data Encryption Algorithm (3DES).

Developing Deep Learning Intelligence for Forecasting Effects from Engineering Big Data

Deep Learning is a disruptive technology that has made remarkable forward leaps in the analysis of large and generic public image datasets. The research will be focused on the entirely new application of Deep Learning to engineering data with a more diverse range of parameters and highly specific domain-knowledge. The research challenge is to devise a procedure to curate data in terms of quality, quantity and meta-data to enable data-fusion, abstraction and generalisation by means of Deep Learning algorithms.

This will focus on developing underpinning Deep Learning abstraction architectures to interpret real-time multivariate and heterogenous engineering data. This is a new branch of analytical engineering science that involves a multi-disciplinary working. There are three research components: 1) devise and assemble multivariate and heterogenous engineering datasets for machine learning; 2) develop and deploy Deep Learning intelligence algorithms on the datasets; 3) develop and test visual analytic tools for interactive human-in-the-loop learning processes.

This will develop Deep Learning interactively with the aid of visual analytics and visual abstractions. This research will lead to entirely new interactive visualization tools to enable exploration of high-dimensional data, scalability of models, model based design, coupled models and distributed datasets. Complimentary Deep Learning algorithms, coupled with interactive visualization, are foreseen to achieve a significant increase in accuracy and abstraction from the combination of multidisciplinary human expertise large amounts of data. The human-machine interaction is essential for Big Data Analytics where raw data is largely un-labelled and un-categorised. Engineering inspired case studies will be used to train and validate the research.

A.Gopi Suresh
Assistant Professor

Simputer Technology

The Simputer is a self-contained, open hardware handheld computer, designed for use in environments where computing devices such as personal computers are deemed inappropriate. PicoPeta Simputers Pvt. Ltd unveils Amida Simputer for the retail market.

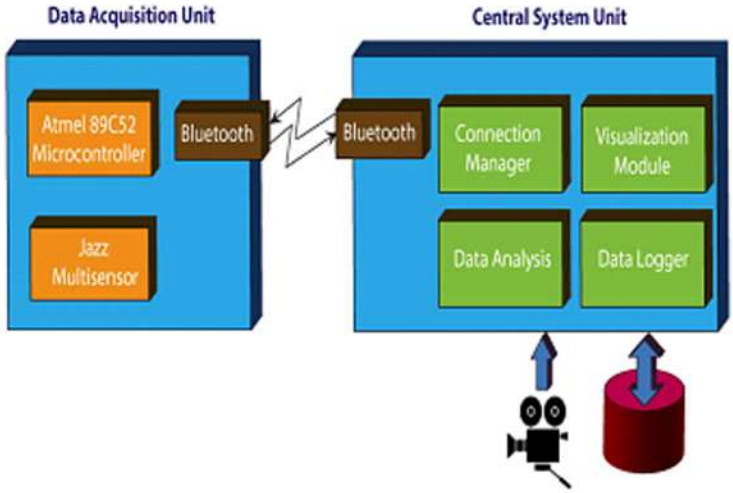
It's simple, it's portable. At about Rs. 9,000 per piece, it's highly affordable. It is compatible with your everyday PC, helps you check e-mail, browse the Net, keep accounts, and get information. When the invention of the Simputer (Simple Computer) was announced in 2001, it instantly captured the imagination of the world. The venerable New York Times called it the most important invention of 2001 ahead of Apples G4 and Microsoft's Windows XP operating system. Here was a computer that was rewriting every rule associated with computers.

The definition of the Simputer as a Simple Inexpensive Multilingual Computer is important in surveying its projected uses. The goal of the Simputer project is to harness the potential of Information and Communication Technology (ICT) for the benefit of the weakest sections of society. The Simputer is a low cost portable alternative to PCs, by which the benefits of IT can reach the common man.

It has a special role in the third world because it ensures that illiteracy is no longer a barrier to handling a computer. The key to bridging the digital divide is to have shared devices that permit truly simple and natural user interfaces based on sight, touch and audio. The Simputer meets these demands through a browser for the Information Markup Language (IML). IML has been created to provide a uniform experience to users and to allow rapid development of solutions on any platform.

Spandana Prathipati
15761A1249

Blue Eyes Technology



It is almost impossible to measure the advancement of technology, it is not because there is no measuring device for it, but it is because of its immense pace with which it is moving forward. It is just because of this high-end technology that computers can now interact with us. Computers can talk, listen and feel our presence with the help of various technologies like face recognition, fingerprint, video call etc. However, it can now even sense and control the emotions and feelings of a human. Blue Eyes technology is making this possible.

In blue eye technology blue stands for Bluetooth and eye stand for eye movements which enable to get the information. The idea behind blue eye technology is to give the computer the human power. Basically, Blue Eyes system consists of two devices: DAU (Data Acquisition Unit), CSU (Central System Unit). These two devices are interconnected by Bluetooth. The function of DAU is to collect information from the sensor and send it to Bluetooth and it also delivers the message which is sent from CSU to the operator. On the other hand, CSU provides visualization interface by buffering incoming sensor data.

What is the Need for Blue Eyes Technology?

1. Sometime a user may not notice changes of indication which can cause financial crisis. So we need a permanent solution for this type of threat.
2. To build a machine which can interact with human, which can understand emotions and feel our presence.
3. A computer which can talk, listen or even scream.

Technologies used in Blue Eyes Technology:

1. Emotional mouse:
2. Artificial intelligent speech recognition:.
3. Manual and gaze input cascaded: .
4. Simple user interest tracker:
5. The eye movement sensor:

What are the Benefits of Blue Eyes Technology?

1. It helps in eye monitoring by recording and interpreting customer's movement.
2. It is used in video games, to make them more interactive and exciting.
3. Physiological and behavioral condition monitoring.
4. It is helpful in power plant control room, captain bridges, flight control center.

Conclusion:It is the way to simplify life by providing user-friendly facilities. It also helps in reducing the gap between the computer and human. Also in the future, it is quite possible to create a computer with which we can completely interac2t like a true buddy

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Ethical hacking

Ethical Hacking sometimes called as Penetration Testing is an act of intruding/penetrating into system or networks to find out threats, vulnerabilities in those systems which a malicious attacker may find and exploit causing loss of data, financial loss or other major damages. The purpose of ethical hacking is to improve the security of the network or systems by fixing the vulnerabilities found during testing. Ethical hackers may use the same methods and tools used by the malicious hackers but with the permission of the authorized person for the purpose of improving the security and defending the systems from attacks by malicious users.

Hacking is the process of identifying and exploiting weakness in a system or a network to gain unauthorized access to data and system resources. It can also be defined as an unauthorized intrusion into the information systems/networks by an attacker by compromising the security. Example of Hacking: Exploiting the weakness of default password to gain access to the data stored inside the system

Hacking has been a part of computing for almost five decades and it is a very broad discipline, which covers a wide range of topics. The first known event of hacking had taken place in 1960 at MIT and at the same time, the term "Hacker" was originated. In this tutorial, we will take you through the various concepts of Ethical Hacking and explain how you can use them in a real-time

Hacking is the act of finding the possible entry points that exist in a computer system or a computer network and finally entering into them. Hacking is usually done to gain unauthorized access to a computer system or a computer network, either to harm the systems or to steal sensitive information available on the computer.

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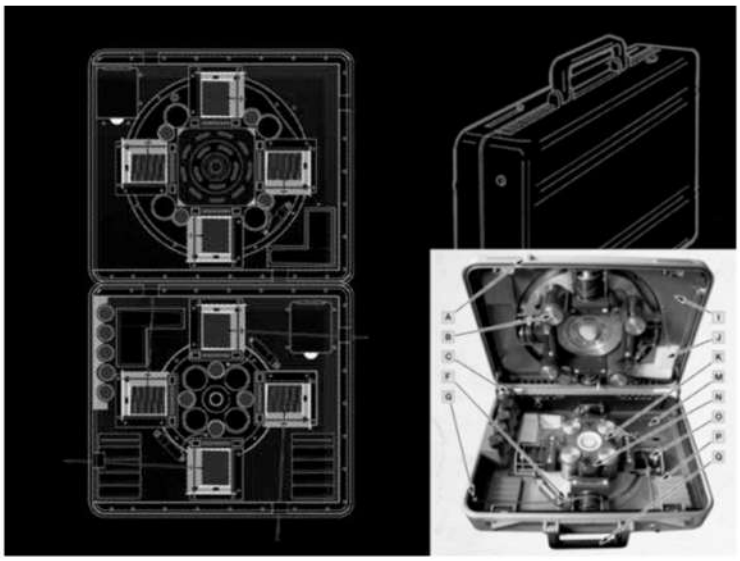
15761A1213

DREAM SHARING TECHNOLOGY

The absolute best in the art of extraction, stealing valuable secrets from deep within the subconscious during the dream state, when the mind is at its most vulnerable.We cannot acknowledge our self that we are in a dream until unless we wake up and realizes that something happened strange.

The machine's "Lithium-iodide" batteries provides up to 200 hours of power. A "LED display with atomized timer" provides the operator with continuous system updates. Numerous IV lines allow multiple users to essentially network their respective dream states, with one person acting as a conduit for everyone to hallucinate around.

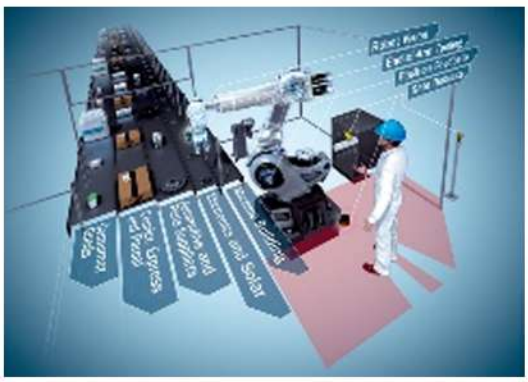


Thanuj Dev Kanna
15761A1226

ROBOTICS

Robotics is the branch of technology that deals with the design, construction, operation and application of robots and computer systems for their control, sensory feedback, and information processing. The word robotics was derived from the word robot, which was introduced to the public by Czech writer Karel Čapek in his play R.U.R. (Rossum's Universal Robots), which premiered in 1921. The word robot comes from the Slavic word robota, which is used to refer forced labor. These technologies deal with automated machines that can take the place of humans, in hazardous or manufacturing processes, or simply just resemble humans. Many of today's robots are inspired by nature contributing to the field of bio-inspired robotics.

At present mostly (lead-acid) batteries are used as a power source. Many different types of batteries can be used as a power source for robots. They range from lead acid batteries which are safe and have relatively long shelf lives but are rather heavy to silver cadmium batteries that are much smaller in volume and are currently much more expensive. Actuators are like the "muscles" of a robot, the parts which convert stored energy into movement. spring can be designed as part of the motoractuator, to allow improved force control. It has been used in various robots, particularly walking humanoidrobots Pneumatic artificial muscles, also known as air



Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electrical engineering, computer science, and others. In 1942, the science fiction writer Isaac Asimov created his Three Laws of Robotics.

In 1948, Norbert Wiener formulated the principles of cybernetics, the basis of practical robotics.

Actuators are the "muscles" of a robot, the parts which convert stored energy into movement. By far the most popular actuators are electric motors that rotate a wheel or gear, and linear actuators that control industrial robots infactories.

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AUTONOMOUS CARS

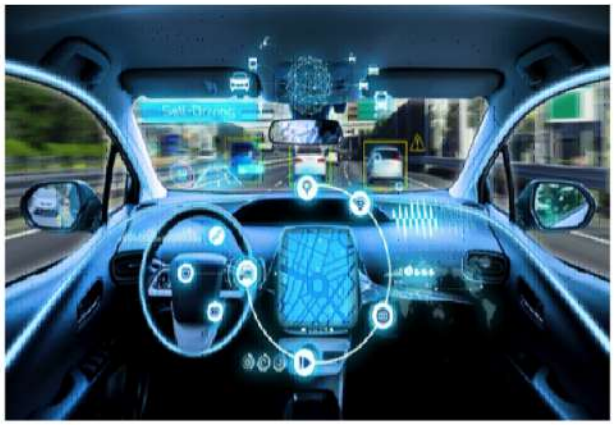
The autonomous car or the driverless car can be referred to as a robotic car in simple language. This car is capable of sensing the environment, navigating and fulfilling the human transportation capabilities without any human input. It is a big step in the advancing future technology. Autonomous vehicle technology has been considered as one of the key components of the intelligent transportation systems.In this CARS.

Highlights

•This paper proposes to use abstract map of buildings for vehicle self-localization in the urban environment.

•The proposed abstract map formats represent the urban environment by the multilayer 2D vectors and 3D planar surfaces.

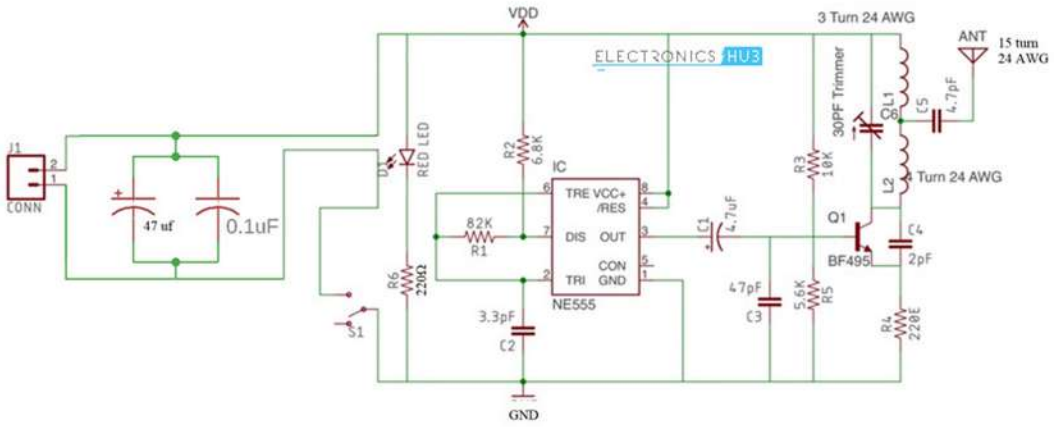
•The experiments show that even though we significantly shrank the map size, we could preserve the localization accuracy.



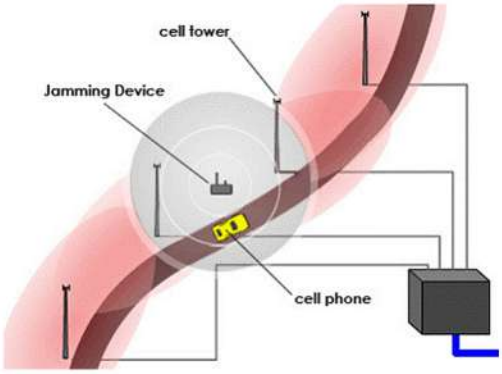
Research from Ohio University has highlighted just some of the potential ways that driverless cars could improve our lives – whether it's by being more environmentally friendly, improving our cities or being much safer for drivers and pedestrians alike.

M.Monika
15761A1234

MOBILE JAMMER



The Cell phone jammer unit is intended for blocking all mobile phone types within designated indoor areas. Its unique design strict compliance with international standards of safety and electromagnetic compatibility (ISM).The Cell Phone Jammer is a 'plug and play' unit, its installation is quick and its operation is easy. Once the Cell Phone Jammer is operating, all mobile phones present within the jamming coverage area are blocked, and cellular activity in the immediate surroundings (including incoming and outgoing calls, SMS, pictures sending, etc.) is jammed.



The main purpose of a cell phone jammer is to jam a cell phone signal in a designated area. Cell phone jammer is radio frequency equipment which produces a RF signal to beat the cell phone frequency and effectively jam the signal which results no service to any type of cell phone such as CDMA and GSM in the range of 800MHz to 900MHz.The jammer described here is for 900MHz range. Once the cell phone jammer is operating, all mobile phones present within the jamming coverage area are blocked and cellular activity in the immediate surroundings is jammed.

Presently, cell phones are regularly used by millions of people all over the world. Because we can use a cell phone from just about anywhere to talk to anybody it is one of the greatest inventions for social and business life today.

A.Manieendra
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RAINBOW TECHNOLOGY

Rainbow Storage is a group of techniques to store digital data in some colors, color combinations and symbols in Rainbow Format. The technique is used to achieve high-density storage.With the help of Rainbow system we would be watching full-length high definition videos from a piece of paper!

The main attraction is the cheap paper. The Rainbow technology is feasible because printed text, readable by the human eye does not make optimal use of the potential capacity of paper to store data.By printing the data encoded in a denser way much higher capacities can be achieved and the new trend will be generated in the field of data storage technique. Since it is in developing phase but I am sure that this technology will prove it a grand success in forthcoming years and out throw the existing technologies of data storage.

Naga Rajya Lakshmi Nukala
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We can use any colour representable media as storage medium including paper and plastic sheets. Paper and ink is not the only way to represent colour, there are other efficient methods available now and many kind of researches are going on in different parts of the world. Definitely, Ordinary sheet of paper with normal printer and scanner will give poor density, but it can be used for some specific purposes. It put forward the concept of disposable storage. We can create many useful products like digital catalogue for commercial products.Instead of using 0s and 1s here we are using colour dots. Each colour dot can represent minimum 8 bits (1 byte). If we are using some powerful mode of representation (forget about ink and paper) we can represent more data on a single spot. By using some groups and symbols, we can also increase the density in to some extent.

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stylus/pen only. The user can use the touch screen to react to what is displayed and to control how it is displayed; for example, zooming to increase the text size. The touch screen enables the user to interact directly with what is displayed, rather than using a mouse, touchpad, or any other intermediate device (other than a stylus, which is optional for most modern touch screens).

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