June - 2017

MATURI VENKATASUBBA RAO (MVSR) ENGINEERING COLLEGE

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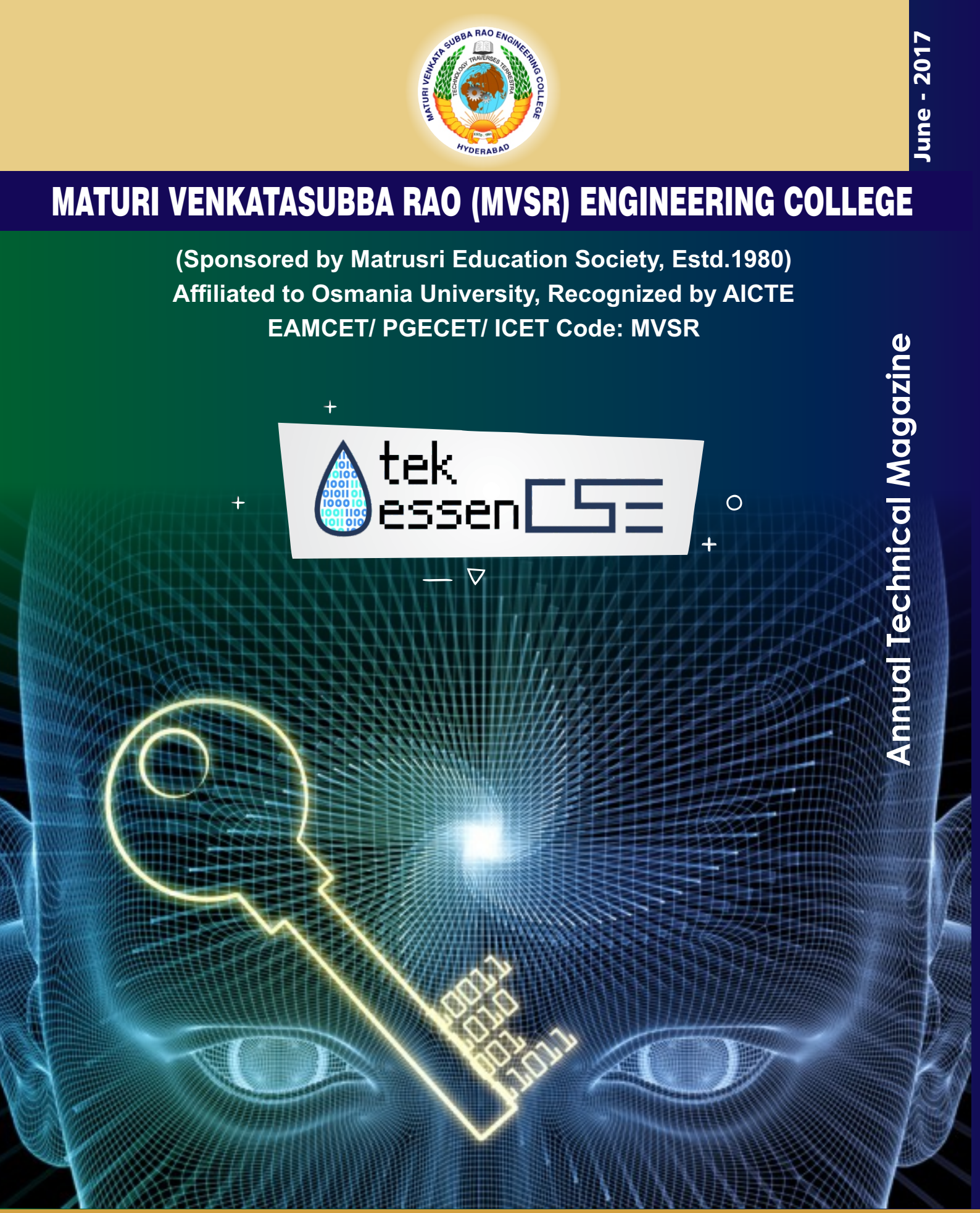
Annual Technical Magazine



Department of Computer Science and Engineering

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Department of Computer Science and Engineering

- **VISION**
- To impart technical education of the highest standards, producing competent and confident engineers with an ability to use computer science knowledge to solve societal problems.

- **MISSION**
- To make learning process exciting, stimulating and interesting.
- To impart adequate fundamental knowledge and soft skills to students.
- To expose students to advanced computer technologies in order to excel in engineering practices by bringing out the creativity in students.
- To develop economically feasible and socially acceptable software.

B.E. PEOs, POs & PSOs

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

The Program Educational Objectives of undergraduate program in Computer Science & Engineering are to prepare graduates who will:

1. Obtain strong fundamentals concepts, technical competency and problem solving skills to generate innovative solutions to engineering problems.
2. Continuously enhance their skills through training, independent inquiry, professional practices and pursue higher education or research by adapting to rapidly changing technology.
3. Advance in their professional careers including increased technical, multidisciplinary approach and managerial responsibility as well as attainment of leadership positions thus making them competent professionals at global level.
4. Exhibit commitment to ethical practices, societal contributions and lifelong learning.

PROGRAM OUTCOMES(POs)

At the end of the program the students (Engineering Graduates) will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering 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 and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principle and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Lifelong learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

13. **Efficient coding:** an ability to analyse a problem, design the algorithm and optimally code its solution.
14. **Software deployment:** an ability to identify & define computing requirements to test, implement and maintain a software product.

M.Tech PEOs, POs & PSOs

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

The Program Educational Objectives of postgraduate program in Computer Science & Engineering are to prepare graduates who will:

1. Gain in-depth knowledge of advanced computational methods, to apply in relevant real-world issues within the context of a specific application domain.
2. Design and develop innovative solutions making use of modern computing platforms by exhibiting commitment to ethical practices and lifelong learning.
3. Understand and contribute to prevalent literature for pursuing research in the field of computer science and engineering.
4. Exhibit technical and managerial skills in multidisciplinary domains andbecome competent professionals.

PROGRAM OUTCOMES(POs)

At the end of the program the students (Engineering Graduates) will be able to:

1. An ability to independently carry out research /investigation and development work to solve practical problems
2. An ability to write and present a substantial technical report/document
3. Students should be able to demonstrate a degree of mastery over computer science and engineering for holistic professional development.
4. An ability to demonstrate understanding for designing and developing software for multidisciplinary problems.

PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Conduct research using knowledge gained to identify and solve problems in multidisciplinary domains.
2. Demonstrate critical thinking ability to propose efficient solutions to the real world computational problems taking into consideration environmental and societal issues

Creative Desk

Dr.AkhilKhare,
Professor,
(Reviewer Technical Magazine)

Dr. B. Sandhya,
Professor,
(Reviewer Technical Magazine)

Meduri Anupama,
Associate Professor,
(Reviewer Technical Magazine)

Dr. Daggubati Sirisha,
Assistant Professor,
(Incharge Technical Magazine)

V. Sudhindra,
Assistant Programmer,
(Magazine Design Team)

M. Nagarani,
Programming Assistant,
(Magazine Design Team)

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Messages

Chairmen's Message

Dr. K. P. Srinivasa Rao,
MBBS, MS (Ophthalmology),
Chairman, MVSREC

It is often said " Give me a copy of your college Technical Magazine", I will tell you about the quality of your college. "I strongly believe in this statement. Magazine carries the contributions reflecting ethos and aspirations of the faculty, students and other team members of an institution. I am happy to know that Computer Science & Engineering Department is bringing out its first department technical magazine this year. It is my pleasure to congratulate the editorial team for bringing out a quality Technical Magazine. Reading this technical Magazine would definitely be an inspiration and motivation for all students and staff to contribute even more to the forthcoming issues.

Principal's Message

Dr. G. Kanaka Durga,
Principal, MVSREC
(Professor, Department of Electronics and Communication Engineering)

TekEssenCSE is the manifestation of the desire of Computer Science Faculty and Students to share their innovative ideas on common platform. It gives me great pleasure to know that TekEssenCSE college magazine is ready for publication. This magazine is a perfect blend of magnificent and groundbreaking articles. It has concentrated in disseminating information to the student community and quenches their thirst for knowledge updations. I am very glad to congratulate the editor for their hard work and bringing out this edition.

HOD's Message

Prof.J.Prasanna Kumar,
HOD, MVSREC
(Department of Computer Science and Engineering)

TekEssenCSE is the annual magazine released by the Department of Computer Science & Engineering. It is a blend of exquisite articles and innovative ideas from the faculty and new – age Students of Computer Science & Engineering Department. I strongly believe that the informative articles & innovative ideas presented in the magazine will be appealing and useful to the readers.

Creative Desk

"Coming together is a beginning, keeping together is progress and working together is success" – This magazine "TekEssenCSE", a flag ship magazine of Computer Science & Engineering Department of MaturiVenkataSubba Rao Engineering College, is the culmination of the never tiring initiative and endeavors taken by the faculty and students of CSE. The Magazine strives to inform, engage, inspire and educate diverse readership on developments in Computer Science field.

Artificial Intelligence In Cyber Security

Bantu Saritha - Associate Professor
Sai Charan E - Class: BE ¾ SEM 2 – Roll No. 2451-17-733-120

Introduction :

We are living in a digital era, whether it be booking a hotel room, ordering some food or even booking a cab, we are constantly using the Internet and inherently, constantly generating data. This data is generally stored on the cloud which is basically a huge data server or data center. We use an array of devices to access this data. Now for a hacker, it's a golden age with so many access points, public IP addresses and constant traffic and tons of data to exploit. The day to day raising and progressing cyber attacks can be reduced by the integration of Artificial Intelligence into cyber security systems.

AI in Cyber Security :

The generation of data in today's world is increasing and the information stored or received in any form, whether directly or indirectly, through the internet is increasing. Moreover, the data has to be sent over a network to a destination safely, hence proper transmission of data plays a vital role which can be achieved by principles of Cyber Security.

AI and CyberSecurity are broad terms and we can use it both to mitigate risks and increase revenue by detecting cyber threats and fraud. However, keeping up with the new viruses and malware updates is becoming more difficult. Cyber Security using AI technologies will facilitate the detection and response to threats and malware by using previous cyber-attack data to determine the best course of action. The faster the data breach was identified and contained, the lower the costs and could save a lot to companies.

AI TECHNIQUES FOR CYBER SECURITY

Expert Systems

An Expert System is a computer system that emulates the decision making ability of a human expert. This is a best example of a Knowledge based system [1]. These knowledge-based systems are composed of two sub-systems: the Knowledge Base and the Inference Engine. The knowledge base represents the illustrations and assertions in the real world [2]. The Inference Engine is an automatic reasoning system. It evaluates the current situation of the knowledge base and applies the rules relevant to that, then asserts new knowledge into it.

The Security Expert System follows a set of rules to battle cyber-attacks. It checks the process with the knowledge base if it is a wellknown process then the security system ignores otherwise the system would terminate the process [3]. If there is no such process in the knowledge base, then using inference engine algorithms (rule sets), the expert system finds out the machine state. The machine state has been composed into three states namely safe, moderate and severe. According to the machine
state, the system alerts the administrator or the user about the status, and then the inference has been fed to the Knowledge base.

Neural Networks :

Neural networks have a long history that begins with the invention of perceptron by Frank Rosenblatt in 1957 – an artificial neuron that has remained one of the most popular elements of neural networks [4]. Already a small number of perceptrons combined together can learn and solve interesting problems. But neural networks can consist of a large number of artificial neurons. Therefore, neural networks provide a functionality of massively parallel learning and decision-making. Their most distinguished feature is the speed of operation. They are well suited for learning pattern recognition, for classification, for selection of responses to attacks [5] etc. They can be implemented either in hardware or in software. Neural nets are well applicable in intrusion detection and intrusion prevention [6, 7]. They are currently used in DoS detection, computer worm detection, spam detection, zombie detection, malware classification and in forensic investigations [8].

A reason for the popularity of neural networks in cyber defense is their high speed, if implemented in hardware or used in graphic processors it processes faster. Neural networks can permit the exact detection of new malware threats and fill in the dangerous gaps that leave organizations wide open to attacks.

Intelligent Agents :

Intelligent Agent (IA) is an independent entity which recognizes movement through sensors and follows up on an environment using actuators (i.e. it is an agent) and directs its activity towards accomplishing objectives. Intelligent agents may likewise learn or use a knowledge base to accomplish their objectives. They might be extremely simple or very complex. A reflex machine, for example, a thermostat is an intelligent agent. It has behaviors like understanding agent interaction language, pro-activeness and reactivity. They can adapt to real time, learn new things rapidly through communication with the environment, and have memory based standard storage and recovery abilities. Intelligent agent is created in showdown against Distributed Denial of Service (DDoS) attacks [8]. In case if there is any legal or business issue, it should be manageable to develop a "Cyber Police". Cyber Police should have mobile intelligent agents. For this we should devise the infrastructure to support the quality and interaction between the intelligent agents. Multi-agent tools will give a lot of full-fledged operative appearance to the cyber police.

Conclusion :

In the current situation of rapidly growing intelligence of malware and sophistication of cyber attacks, it is unavoidable to develop intelligent cyber defensivemethods[1, 8]. Artificial Intelligence techniques are more flexible and robust than contemporary cyber security solutions. Therefore, increasing security implementation and better defend system from a growing number of advanced and complex cyber threats is important. Regardless of the extreme change that Artificial Intelligence systems has conveyed to the domain of cyber security, related frameworks are not yet ready to alter completely and consequently to changes in their condition.

Though we have many benefits when we use artificial intelligence techniques for cyber security, but it is not the only solution for security. When a human opponent with a clear by-passing goal attacks the intelligent security, the system may fail. This doesn't mean we should not use Artificial Intelligence techniques, but we should know its limits. An Artificial Intelligence technique needs continuous human communication and training. This fusion approach has many confirmed results as it works resourcefully alongside threat researchers

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Generative Adversarial Networks

T Lakshmi - Assistant Professor

Introduction :

Generative Adversarial Networks, GANs, are an incredible AI technology capable of creating images, sound, and videos that are indistinguishable from the "real thing". A generative adversarial network (GAN) is a class of machine learning frameworks designed by Ian Goodfellow and his colleagues in 2014. Two neural networks contest with each other in a game. Given a training set, this technique learns to generate new data with the same statistics as the training set. For example, a GAN trained on photographs can generate new photographs that look at least superficially authentic to human observers, having many realistic characteristics. Though originally proposed as a form of generative model for unsupervised learning, GANs have also proven useful for semi-supervised learning, fully supervised learning, and reinforcement learning.

GAN Architecture :

GANs consist of two parts: generators and discriminators. The generator model produces synthetic examples (e.g., images) from random noise sampled using a distribution, which along with real examples from a training data set are fed to the discriminator, which attempts to distinguish between the two. Both the generator and discriminator improve in their respective abilities until the discriminator is unable to tell the real examples from the synthesized examples with better than the 50% accuracy expected of chance. GANs train in an unsupervised fashion, meaning that they infer the patterns within data sets without reference to known, labelled, or annotated outcomes. Interestingly, the discriminator's work informs that of the generator — every time the discriminator correctly identifies a synthesized work, it tells the generator how to tweak its output so that it might be more realistic in the future.

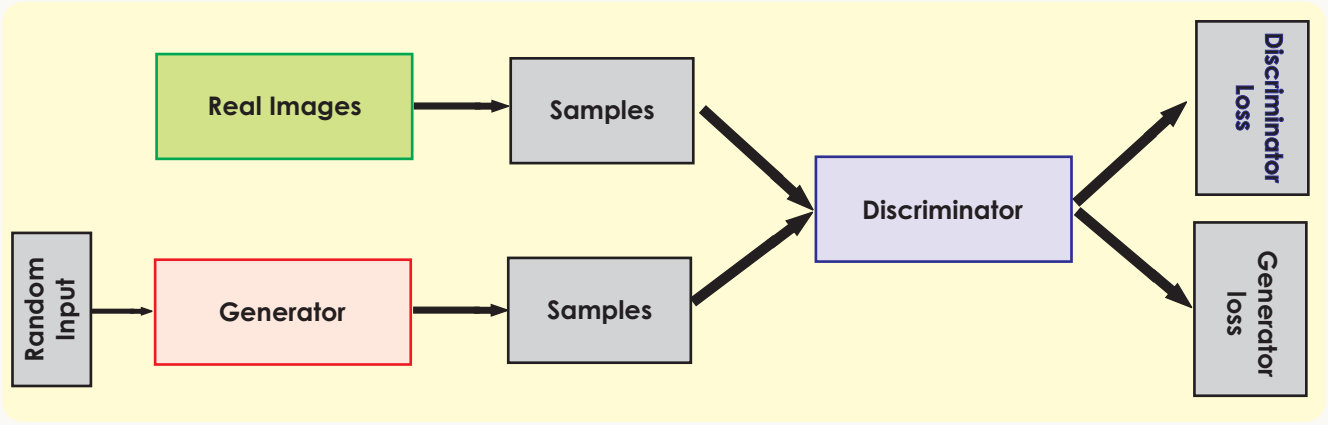

Fig:Generator and Discriminator as GAN building blocks

In practice, GANs suffer from a number of shortcomings owing to their architecture. The simultaneous training of generator and discriminator models is inherently unstable. Sometimes the parameters — the configuration values internal to the models — oscillate or destabilize, which isn't surprising given that after every parameter update, the nature of the optimization problem being solved changes. Alternatively, the generator collapses, and it begins to produce data samples that are largely homogeneous in appearance.

Practical applications of GANs :

Image generation :

Generative networks can be used to generate realistic images after being trained on sample images. For example, if we want to generate new images of dogs, we can train a GAN on thousands of samples of images of dogs. Once the training has finished, the generator network will be able to generate new images that are different from the images in the training set. Image generation is used in marketing, logo generation, entertainment, social media, and so on.

Fig: GAN progress on face generation

Text-to-image synthesis :

Generating images from text descriptions is an interesting use case of GANs. This can be helpful in the film industry, as a GAN is capable of generating new data based on some text that you have made up. In the comic industry, it is possible to automatically generate sequences of a story.

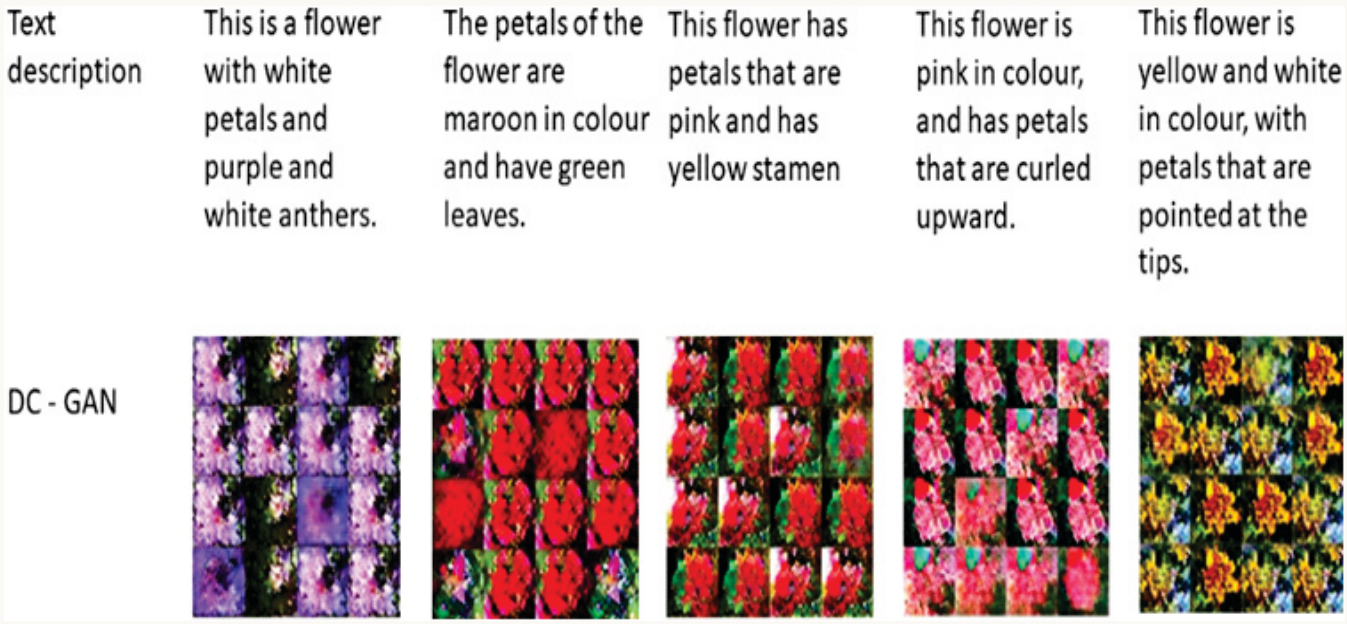

Fig: Generated images from text description

Face aging:

This can be very useful for both the entertainment and surveillance industries. It is particularly useful for face verification because it means that a company doesn't need to change their security systems as people get older. An age-cGAN network can generate images at different ages, which can then be used to train a robust model for face verification.

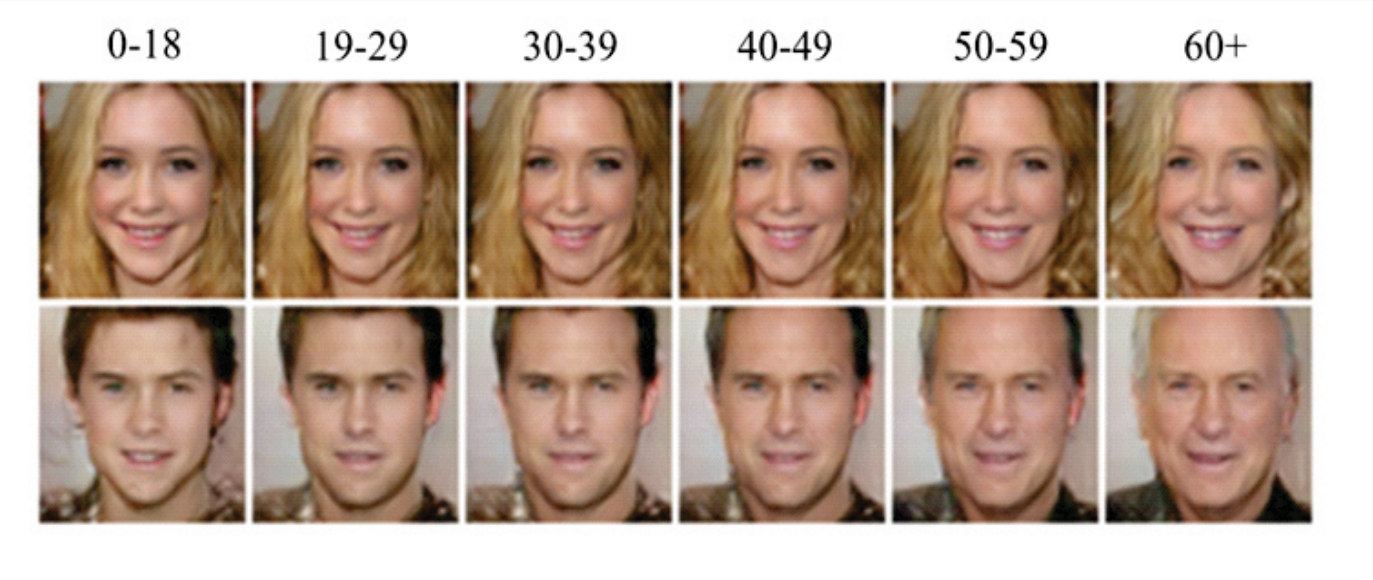

Fig: Generated Images from age-c GAN

Image-to-image translation :

Image-to-image translation can be used to convert images taken in the day to images taken at night, to convert sketches to paintings, to style images to look like Picasso or Van Gogh paintings, to convert aerial images to satellite images automatically, and to convert images of horses to images of zebras. These use cases are ground-breaking because they can save us time.

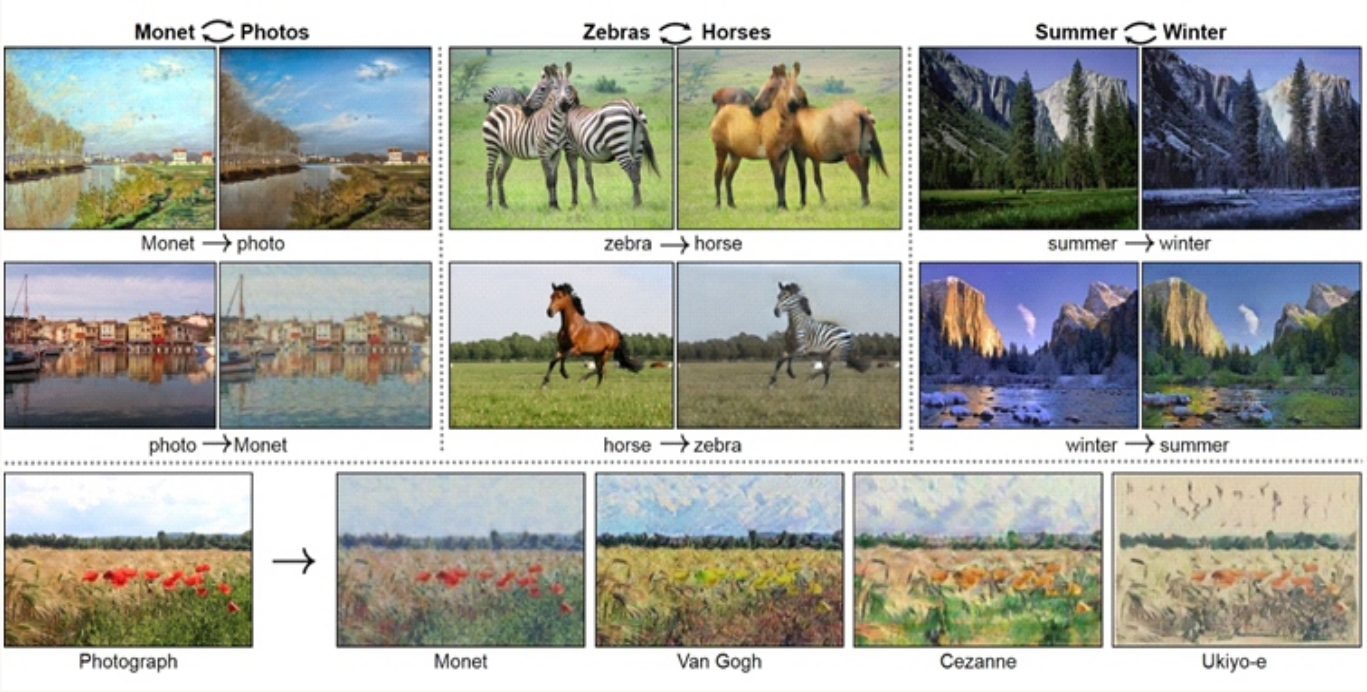

Fig: Unpaired Image-to-Image Translation Using Cycle-Consistent Adversarial Network

Video synthesis :

GANs can also be used to generate videos. They can generate content in less time than if we were to create content manually. They can enhance the productivity of movie creators and also empower hobbyists who want to make creative videos in their free time.

Fig: Example output from the multimodal video synthesis.

High-resolution image generation :

If you have pictures taken from a low-resolution camera, GANs can help you generate high-resolution images without losing any essential details. This can be useful on websites.

Fig:Above: Generated Samples. Below: After Super-Resolution

Completing missing parts of images :

If you have an image that has some missing parts, GANs can help you to recover these sections.Image completion and inpainting are closely related technologies used to fill in missing or corrupted parts of images. There are many ways to do content-aware fill, image completion, and inpainting.

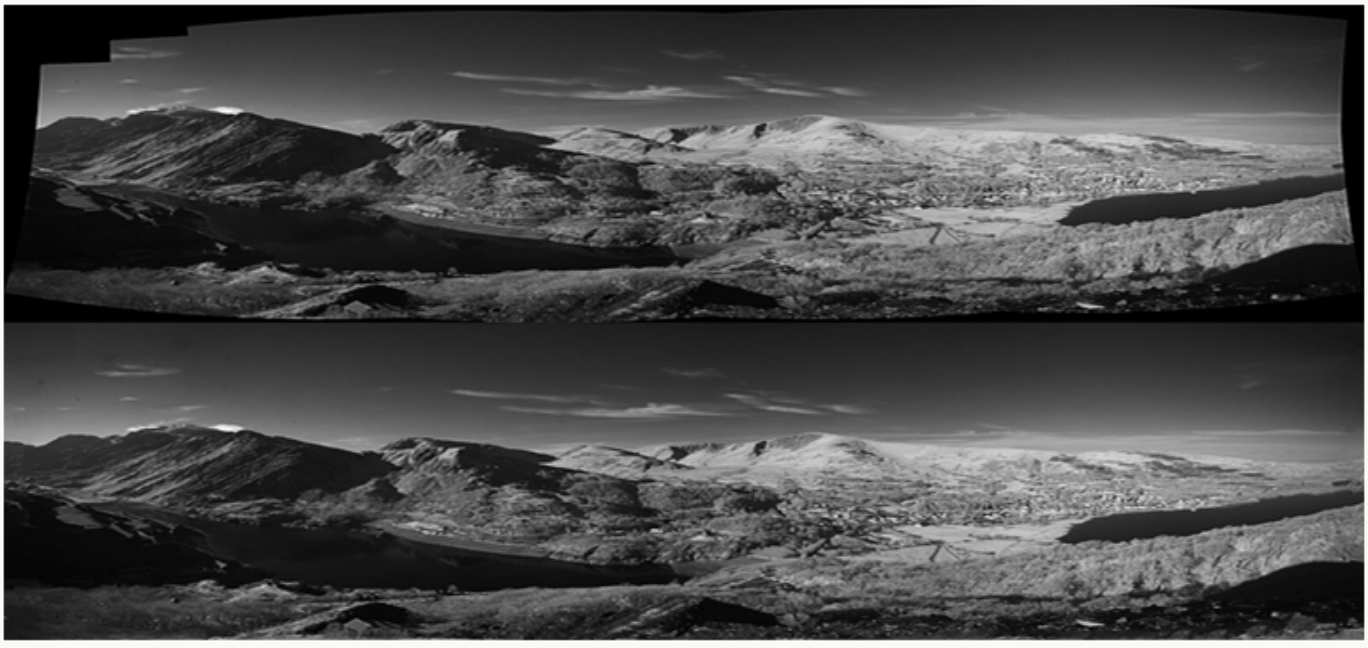

Fig:Example of filling in missing image parts.

Fig: Example of removing unwanted image parts

Variants of GANs :

There are currently thousands of different GANs available and this number is increasing at a phenomenal rate. Six more popular GAN architectures.

1.Deep convolutional generative adversarial networks :

Alec Radford, Luke Metz, and SoumithChintala proposed deep convolutional GANs (DCGANs).Deep Convolutional Generative Adversarial Networks or DCGANs are the 'image version' of the most fundamental implementation of GANs. This architecture essentially leverages Deep Convolutional Neural Networks to generate images belonging to a given distribution from noisy data using the Generator-Discriminator framework. DCGANs are used to generate anime character faces, Face Aging Using Conditional GANs.

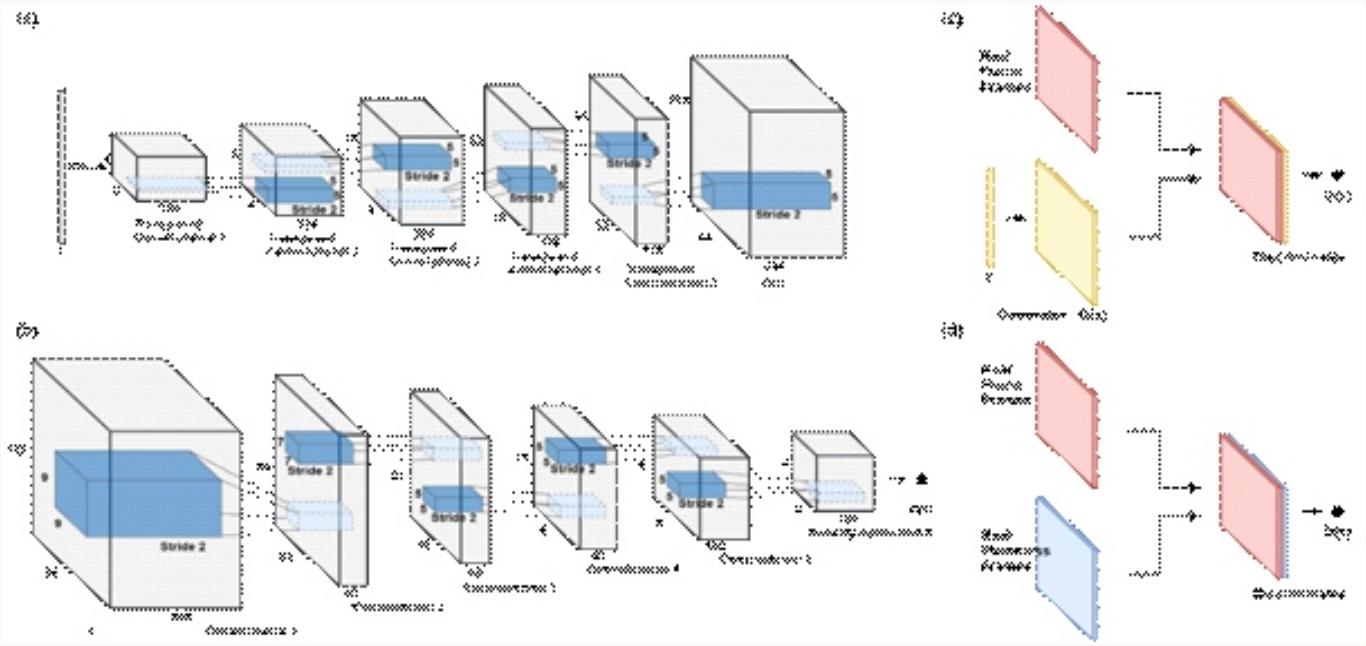

Fig:Deep convolutional generative adversarial networks architecture

2. StackGANs :

StackGANs were proposed by Han Zhang, Tao Xu, Hongsheng Li. They used StackGANs to explore text-to-image synthesis with impressive results. A StackGAN is a pair of networks that generate realistic looking images when provided with a text description. Synthesizing photo-realistic images from text descriptions is a challenging problem in computer vision and has many practical applications.ng.

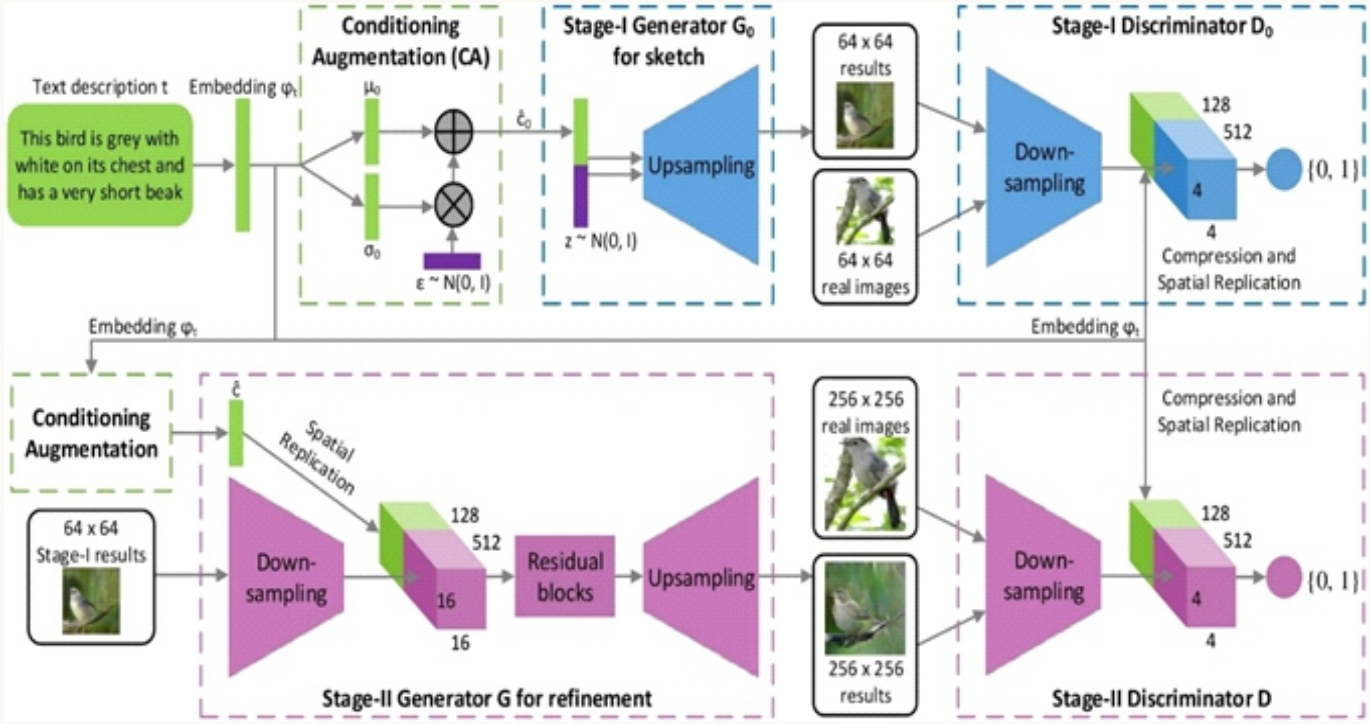

Fig: StackGANs architecture

3. CycleGANs :

CycleGANs were proposed by Jun-Yan Zhu, Taesung Park, Phillip Isola, and Alexei A. Efros. CycleGANs have some really interesting potential uses, such as converting photos to paintings and vice versa, converting a picture taken in summer to a photo taken in winter and vice versa, or converting pictures of horses to pictures of zebras and vice versa.

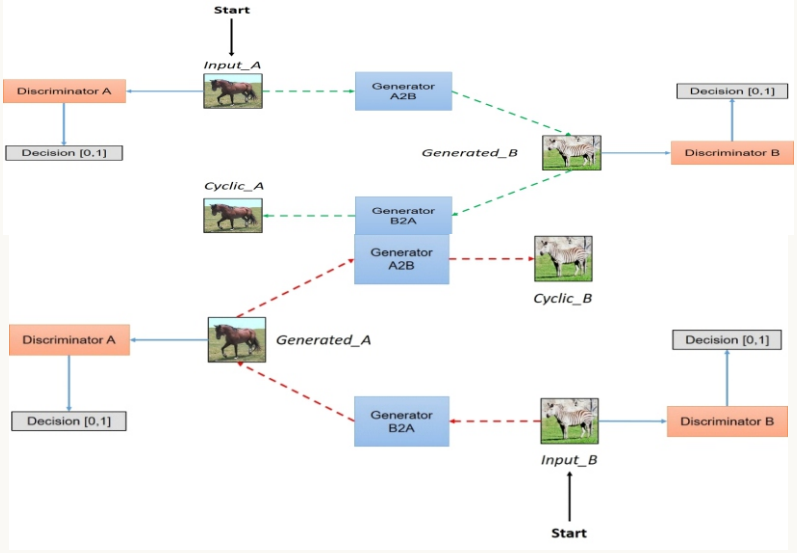

Fig: CycleGANs architecture

4. 3D-GANs :

3D-GANs were proposed by Jiajun Wu, Chengkai Zhang, TianfanXue, William T. Freeman, and Joshua B. Tenenbaum. Generating 3D models of objects has many use cases in manufacturing and the 3D odelling industry. A 3D-GAN network is able to generate new 3D models of different objects, once trained on 3D models of objects.

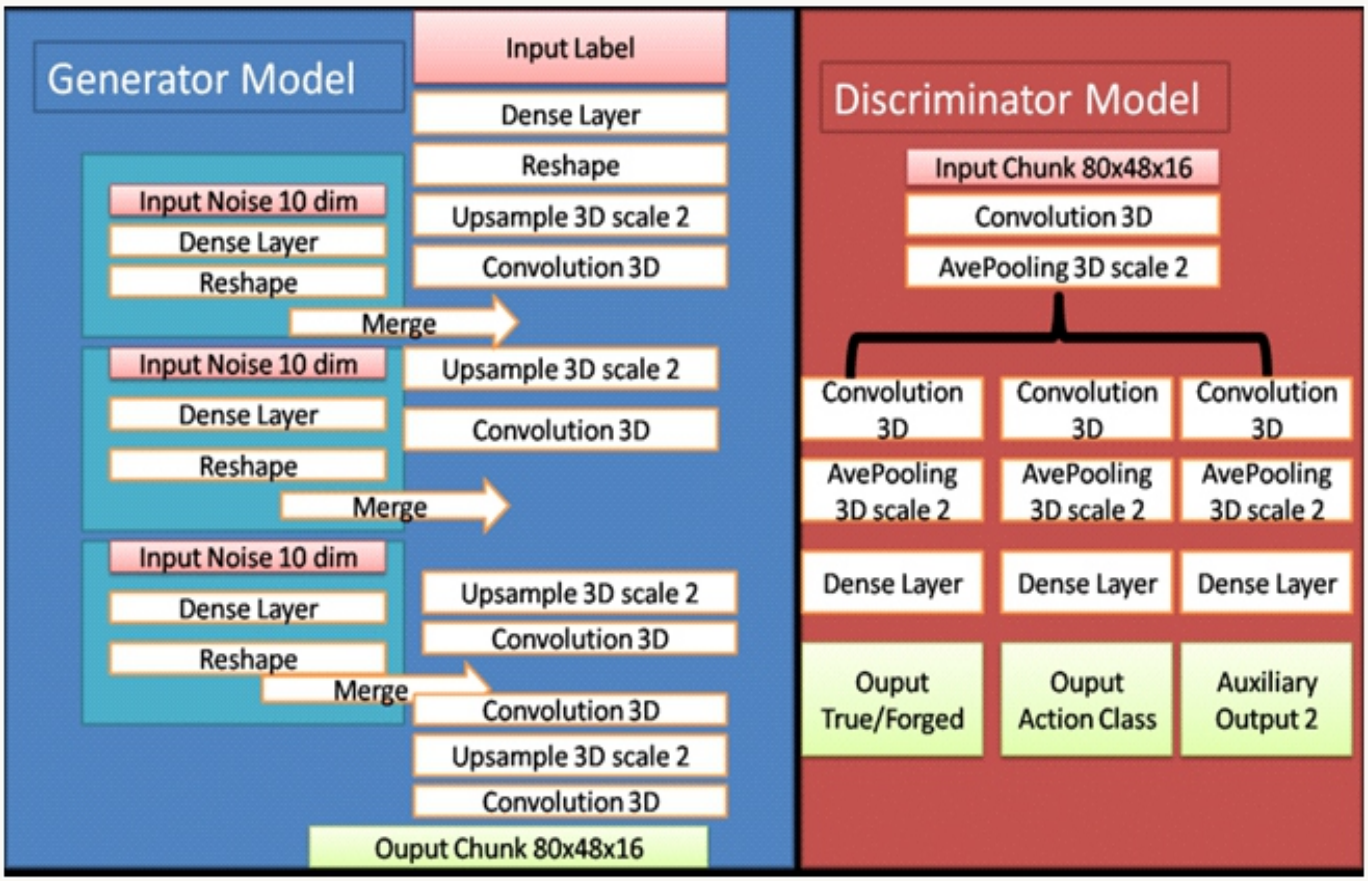

Fig: 3D-GANs architecture

5. Age-cGANs :

Face aging with Conditional GANs was proposed by GrigoryAntipov, MoezBaccouche, and Jean-Luc Dugelay. Face aging has many industry use cases, including cross-age face recognition, finding lost children, and in entertainment.

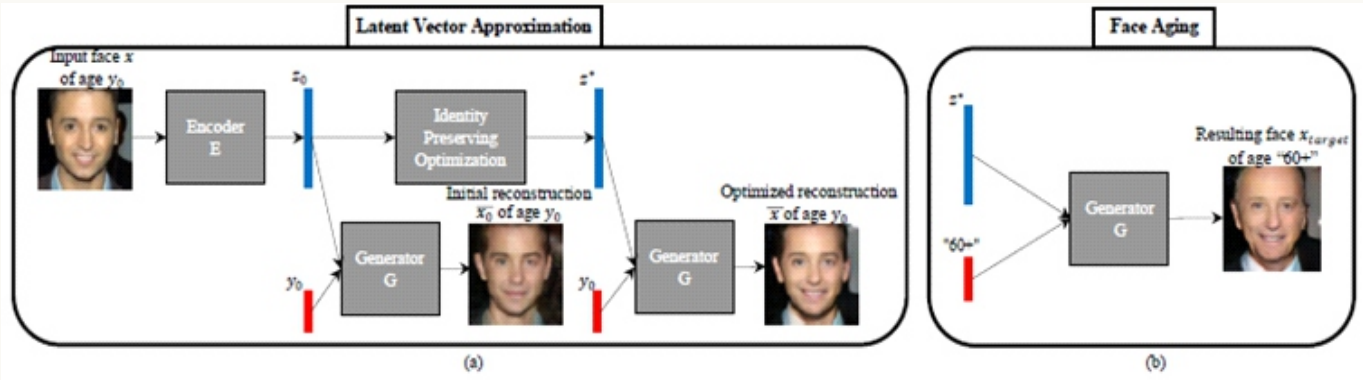

Fig:Age-cGANs architecture

6. pix2pix :

The pix2pix network was introduced by Phillip Isola, Jun-Yan Zhu, Tinghui Zhou, and Alexei A. Efros. The pix2pix network has similar use cases to the CycleGAN network. It can convert building labels to pictures of buildings, black and white images to colour images, images taken in the day to night images, sketches to photos, and aerial images to map-like images.The generator model for the Pix2Pix GAN is implemented as a U-Net.The U-Net model is an encoder-decoder model for image translation where skip connections are used to connect layers in the encoder with corresponding layers in the decoder that have the same sized feature maps

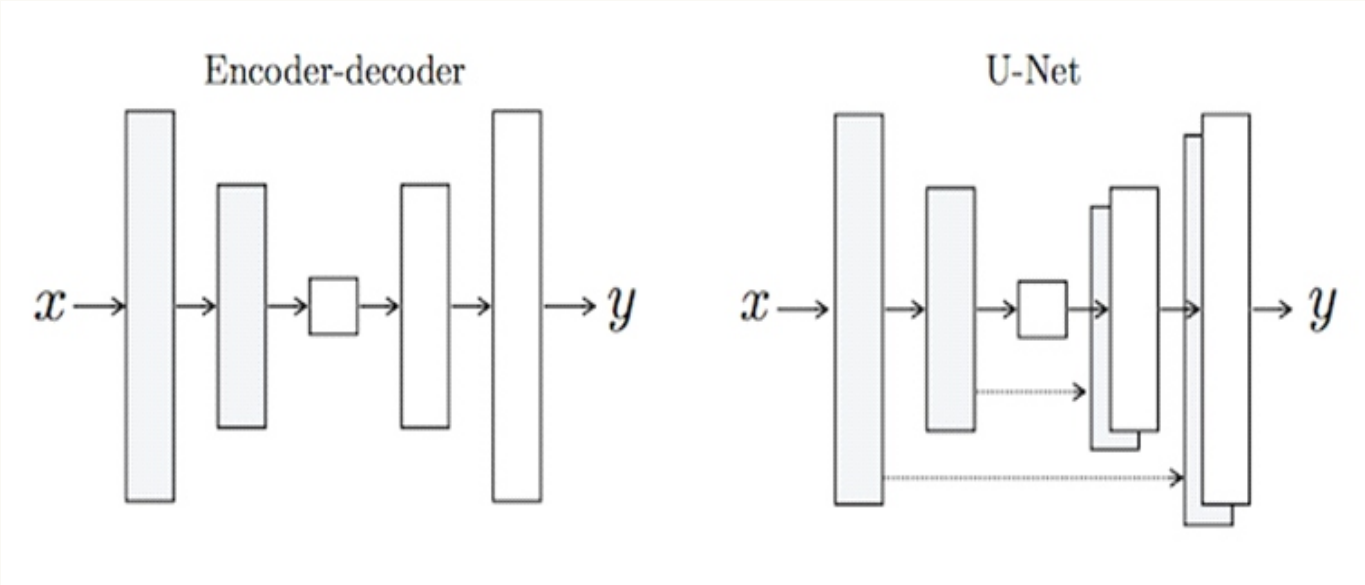

Fig: Depiction of the Encoder-Decoder Generator and U-Net Generator Models. Taken from: Image-to-Image Translation with Conditional Adversarial Networks.

Conclusion :

GANs are a deep learning technique that uses a competitive dynamic between two neural networks to synthesize realistic data samples, such as fake photorealistic imagery. The two networks that constitute, The Generator, whose goal is to fool the Discriminator by producing data indistinguishable from the training dataset. The Discriminator, whose goal is to correctly distinguish between real data coming from the training dataset and the fake data produced by the Generator. GANs have extensive applications across many different sectors, such as fashion, medicine, and cybersecurity.

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9. Face aging with Conditional GANs was proposed by GrigoryAntipov, MoezBaccouche, and Jean-Luc Dugelay paper Face Aging with Conditional Generative Adversarial Networks,
10. Phillip Isola, Jun-Yan Zhu, Tinghui Zhou, and Alexei A. Efros paper Image-to-Image Translation with Conditional Adversarial Networks.

How The Companies Are Using Open Source Software's

M L N Reddy - Assistant Professor

Open-source software :

(**OSS**) is a computer software with its source code made available and licensed with an open source license in which the copyright holder provides the rights to study, change and distribute the software for free to anyone and for any purpose. Open-source software is very often developed in a public, collaborative manner. Open-source software is the most prominent example of open-source development and often compared to (technically defined) user-generated content or (legally defined) open-content movements.

Open-Source Software is used to represent free software which gives the user unrestricted access to its source code. Open source is a software development methodology that makes source code available to a large community who participate in the development by following flexible processes and communicating via the Internet.

The use of free and open source software is gaining momentum due to the ever increasing availability and use of the Internet. Organizations are also now adopting open source software, despite some reservations in particular regarding the provision and availability of support. One of the greatest concerns about free and open source software is the availability of post release support and the handling of for support. A common belief is that there is no appropriate support available for this class of software, while an alternative argument is that due to the active involvement of Internet users in online forums, there is in fact a large resource available that communicates and manages the management of support requests. The research model of this empirical investigation establishes and studies the relationship between open source software support requests and online public forums. The results of this empirical study provide evidence about the realities of support that is present in open source software projects. We used a dataset consisting of 616 open source software projects covering a broad range of categories in this investigation. The results show that online forums play a significant role in managing support requests in open source software, thus becoming a major source of assistance in maintenance of the open source projects

With open-source software, generally anyone is allowed to create modifications of it, port it is new to operating systems and processor architectures, share it with others or, in some cases, market it. There are several reasons to be pointed out and several policy-based reasons for adoption of open source – in particular, the heightened value proposition from open source (when compared to most proprietary formats)

- **Security**
- **Affordability**
- **Transparency**
- **Perpetuity**
- **Interoperability**
- **Flexibility**
- **Localization—particularly in the context of local governments (who make software decisions).**

Casson and Ryan argue that "governments have an inherent responsibility and fiduciary duty to taxpayers" which includes the careful analysis of these factors when deciding to purchase proprietary software or implement an open-source option.

Today companies are Authors initially derive a right to grant a license to the work based on the legal theory that upon creation of a work the author owns the copyright in that work. What the author/licensor is granting when they grant a license to copy, modify and redistribute their work is the right to use the author's copyrights. The author still retains ownership of those copyrights, the licensee simply is allowed to use those rights, as granted in the license, so long as they maintain the obligations of the license. The author does have the option to sell/assign, versus license, their exclusive right to the copyrights to their work; whereupon the new owner/assignee controls the copyrights. The ownership of the copyright (the "rights") is separate and distinct from the ownership of the work (the "thing") – a person can own a copy of a piece of code (or a copy of a book) without the rights to copy, modify or redistribute copies of it.

So today free and open source software (FOSS) is gaining in its share of the software market as the quality of the projects grow and users move away from commercial software. Indeed even organizations despite some concerns about quality have been using this type of software for variety of purposes. The objective of this study was to analyse empirically the association between managing support requests OSS projects and the online public forums associated with a given OSS project. We observed that online forums are the corner stone of managing support requests in OSS. The management of such requests from inception, through investigation to closure is communicated via online forums. This study further helps in understanding the significant role of online forums in OSS development. We are currently working on a prediction model to predict the new feature requests in an OSS project based on the active involvement of the online community associated with the projects.

Brain Gate

M. Hitesh – M.Tech.[CSE] – 2451-19-742-010

Introduction:

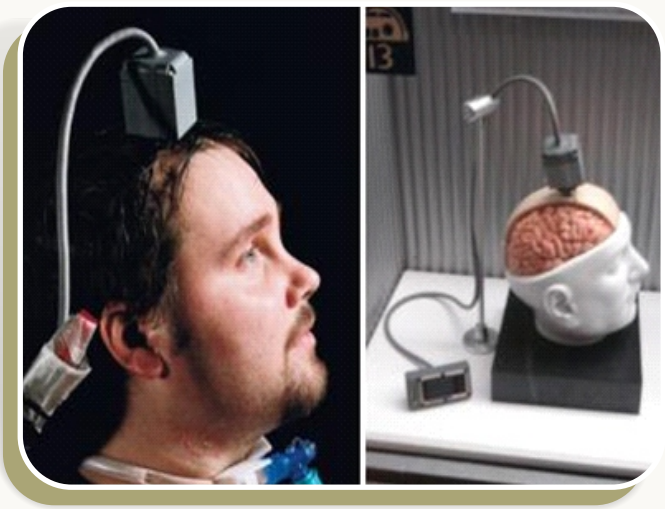
Our human brain is still an area to be explored. It is still a mystery how it works and how well we can use it. It is a known fact that all of us are not exploiting the complete potentiality of our brain. With the endorsement of technology we can use our brain substantially in the field of communication. Brain is the region where all thoughts are born. Most of us have a problem to deliver those thoughts to others. Some people suffer from motor impairment which is the partial or total loss of function of a body part. This may result in muscle weakness, poor stamina, lack of muscle control, or total paralysis. These are often stroke victims whose perfectly healthy minds end up trapped inside bodies that are immobile. Artificial limbs, wheel chair and other such devices serve as a boon to motor impaired patients.

Working Of Brain Gate :

The detection of the input from the user and them translating it into an action could be considered as key part of any BCI system. This detection means to try to find out these mental tasks from the EEG signal. It can be done in time-domain, e.g. by comparing amplitudes of the EEG and in frequency-domain. This involves usually digital signal processing for sampling and band pass filtering the signal, then calculating these time -or frequency domain features and then classifying them.

These classification algorithms include simple comparison of amplitudes linear and non- linear equations and artificial neural networks.

Hardware AndSoftware Behind Brain :



The system consists of a sensor (a device implanted in the brain that records signals directly related to imagined limb movement); a decoder (a set of computers and embedded software that turns the brain signals into a useful command for an external device); and, the external device which could be a standard computer desktop or other communication device, a powered wheelchair, a prosthetic or robotic limb, or, in the future, a functional electrical stimulation device that can move paralyzed limbs directly. Following are the hardware components used in Brain Gate System:

1. THE CHIP :

A 4-millimeter square silicon chip studded with 100 hair-thin, microelectrodes is embedded in brain primary motor cortex. The chip, about the size of a baby aspirin, contains 100 electrode sensors, each thinner than a human hair. The sensors detect tiny electrical signals generated when a user imagines. Though paralyzed, a quadriplegic still has the ability to generate such signals — they just don't get past the damaged portion of the spinal cord. With Brain Gate, the signals travel through a wire that comes out of the skull and connects to a computer.

2. THE CONNECTOR :

It is attached firmly to the skull of the patient and it passes the signals received by the chip to the converter. Most handicapped people are satisfied if they can get a rudimentary connection to the outside world. Brain Gate enables them to achieve far more than that. By controlling the computer cursor, patients can access Internet information, TV entertainment, and control lights and appliances with just their thoughts.

3. THE CONVERTER :

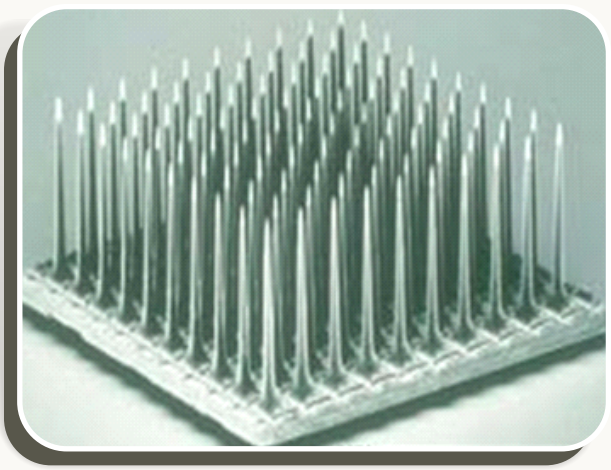
The signal travels to a shoebox-sized amplifier where it's converted to Digital data and bounced by fiber-optic cable to a computer

4. THE COMPUTER :

Brain Gate learns to associate patterns of brain activity with particular imagined movements – up, down, left, right– and to connect those movements to a cursor. A brain-computer interface uses electrophysiological signals to control remote devices. They consist of electrodes applied to the scalp of an individual. These electrodes pick up the signals and carry it into amplifier that amplify the signal approximately ten thousand times and then pass the signal via an analog to digital converter to a computer for processing. The computer processes the Electroencephalography (EEG) signal and uses it in order to accomplish tasks such as communication and environmental control. BCIs are slow in comparison with normal human actions, because of the complexity and noisiness of the signals used, as well as the time necessary to complete recognition and signal processing. Software behind Brain Gate System uses algorithms and pattern-matching techniques to facilitate communication. The algorithms are written in C, JAVA and MATLAB. Signal processing software algorithms analyze the electrical activity of neurons and translate it into control signals for use in various computer-based applications.

Applications:

Brain gate technology can be used for controlling remote devices. This system can be used for making and receiving telephone calls and accessing the internet. Control over the robotic arm is another widely used application of the system. It helps the motor impaired patients to watch and control television, use the pc, locking or unlocking doors. It assists them to use their motorized wheelchair without any external help



Conclusion :

The concept of mobile robots or prosthetic devices not by manual control, but by mere thinking (i.e., the brain activity of human subjects) has been a fascinated approach. Medical cures are unavailable for many forms of neural and muscular paralysis. The enormity of the deficits caused by paralysis is a strong motivation to pursue BMI solutions. So this idea helps many patients to control the prosthetic devices of their own by simply thinking about the task. Medical cures are unavailable for many forms of neural and muscular paralysis. The enormity of the deficits caused by paralysis is a strong motivation to pursue BMI solutions. So this idea helps many patients to control the prosthetic devices of their own by simply thinking about the task.

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Driver Assistance System – DAS

MeduriSuryaa Pranav (2415-15-733-009)
AbhijithPadala (2451-15-733-005)
Ganesh Thanu (2451-15-733-010)

Vehicles and drivers reach new safety levels using Driver assistance system - DAS. Safety systems were once only backup cameras and parking assistance. Now, they are being fused with other subsystems and integrated with new technology to provide life-saving features like emergency braking. As these systems are used in more and more safety-critical applications, the testing to ensure they function properly needs to become more rigorous and simultaneously support the rapid innovation that is happening.

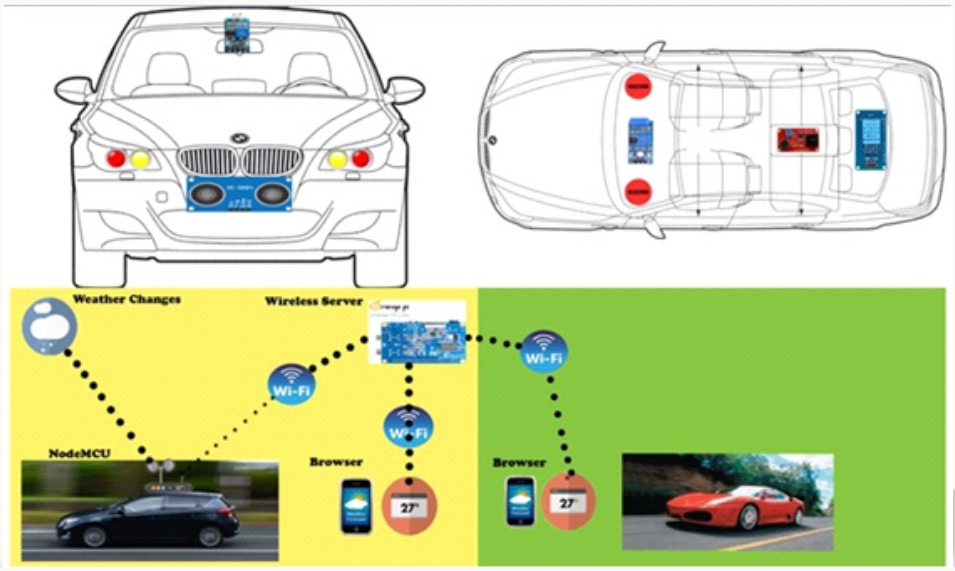
Demand for Automated Driver Assistance Systems (ADAS) is caused by desire to build safer vehicles and roads in order to reduce the number of road fatalities and by legislation in the leading countries. ADAS is made of the following physical sensors: radar, LIDAR, ultrasonic, photonic mixer device (PMD), cameras, and night vision devices—that allow a vehicle to monitor near and far fields in every direction and of evolving and improving sensor fusion algorithms that ensure vehicle, driver, passenger's, and pedestrian's safety based on factors such as traffic, weather, dangerous conditions etc.

Driver assistance system is a system to help the driver in the driving process. DAS is developed to automate/adapt/enhance vehicle systems for safety and better driving. Safety features are designed to avoid collisions and accidents by offering technologies that alert the driver of potential problems, or to avoid collisions by implementing safeguards and taking over control of the vehicle. Adaptive features include automated lighting, theft alarm, warning during over speeding, temperature and humidity information, connection to smartphones, alert driver of other cars or dangers and indicate obstacles in blind spots while backing. In addition to the above functionalities a simulated digital weather system which provides the information of the weather in the neighbouring environment is also provided. For example, it can provide the details about the surrounding temperature, barometric pressure, humidity, etc. By knowing the weather situations ahead of the journey, one can know what precautions need to be taken.

DAS has been simulated using a small toy car. Two breadboards have been attached, each of which have three sensors and these sensors collect the data depending upon the car's behaviour when it is put through some tests. The digital weather station has also been simulated and it provides the details of the weather at the destination in the mobile. These details are stored into a server (orange pi) on which more operations can be done. The sensors that are attached to the breadboard do the following functions:

1. An Ultrasonic sensor gives out an alarm if there is any obstacle while backing the car.
2. A theft alarm goes off as a security measure, in case anyone tries to break the glass of the car.
3. There is a sound alarm to indicate that the car is over speeding, and is done using a vibration cum tilt sensor.
4. A light sensor automatically switches on the head lights of the car when in dark.
5. When any vehicle or obstacle is too close to the front of the car additional headlights are automatically switched on.
6. A temperature and humidity sensor tells the temperature and humidity surrounding the car at a particular place, which can be viewed in the digital dashboard.
7. In addition, using a server (Orange Pi), the temperatures at various places in the route are known. These temperatures can be viewed well ahead through wireless Lan in the mobile.

The development of various ADAS systems help in advancing piloted driving. The fusion of sensors plays an increasingly important role here. It is, for instance, already possible for ultrasonic, radar and optical sensors to interconnect, so that they can work together to get a better picture of their surroundings. It has as added value that will come to bear in a wide variety of vehicle features. These features shift more and more responsibility away from people towards technology, with the aim of making driving a safer and more relaxed experience. The concept of Simulation of DAS can be incorporated not only to automate vehicles but also to meet societal needs and in various other applications.



A Technique For High-Performance Data Compression Using Lzw Compression Algorithm

Dr.Akhil Khare,

International Journal of Research ISSN NO: 2236-6124

Abstract

Data compression implies reduction in the number of bits of the information making its storage or transmissionconvenient. Compression techniques fit in different categories, but mainly can be classified into two main types,viz. lossless and lossy compression. Lossy compression is considered effective when used to compress graphicimages and digitized voice where tolerance level may be high for losses other than visual or aural perception.The amount of compression that can be achieved by a given algorithm depends on both the amount ofredundancy in the source and the efficiency of its extraction. There are various compression techniques likeHuffman coding, Shannon-Fano coding, Arithmetic coding and Dictionary- based compression. Of these, theDictionary-based compression algorithms use a completely different approach to compress data.In this Paperwe limit our scope to observe the compression results with the lossless algorithm, also considered to be theindustry standard for the loss less data compression. It is a "sliding window" technique in which the dictionaryconsists of a set of fixed-length phrases found in a "window" into the previously seen text. It takes a completelydifferent approach to building a dictionary

Conclusion

This paper includes comprehensive study of all aspects of algorithm. Ranging from the most basic concepts like what were the limitations of LZ77, LZ78 and LZW algorithm and how modified LZW algorithm overcame those limitations. We have improved the basic LZW algorithm by increasing the size of dictionary. As it possible to store more and longer phrases to compress better. Moving to larger code size actually retards the compression when the file size to be compressed is small. Since phrases are initially found and added to the dictionary at the same pace, whether the code is nine bits or fifteen bits long, the nine bit actually produce a smaller file. After applying requisite modifications to the algorithm, a simple solution can be drawn. Instead ofalways output the code using fifteen bits our algorithm starts out using a nine-bit code and it doesn't advance to ten bits until the dictionary has added 256 new entries. It progresses through ten, eleven, twelve etc. until it starts using fifteen bits codes. This puts it on an equal footing with compressor using a smaller code size. It is the basis of several personal computer utilities that claim to "double the capacity of your hard drive." This compression is always used in GIF image files, and offered as an option in TIFF. Typically a compressed palette color image is 60 to 80% of the original size. But for some images can create a larger file than the original uncompressed image requires. Depending on the image complexity compression efficiency may vary. For the same set of data files our approach leads to a more compressed file even if the dictionary size is made constant. This algorithm for data compression is a wide field which is making its own niche in numerous appliedfields and technologies, providing tools for some of the most elementary yet cumbersome operations which are considered to be major steps towards the future technology.

Pseudo Activity Development for Effective Information Diffusion in Online Social Network

Dr.Akhil Khare,

International Journal of Computer Applications (0975 – 8887)
Volume 179 – No.36, April

Abstract

Online social networks are dynamic social interaction platforms for billions of users worldwide. Information and ideas are rapidly disseminated among these users through online social interactions. The online interactions among online social network users generate a huge volume of data that provides the opportunity to study human behavioral patterns. A social network is generally assumed to be viewed as graphs, where vertices denote users and edges represent relationships among users. The importance of a user in a network can be calculated by using metrics imported from graph theory. Social influence is recognized as a key factor that governs human behavior. It indicates the attitude of certain individuals to be affected by other subjects' actions and decisions. A social network, in reality, is evolving dynamically and continuously. Such evolution is coupled with the spread of information on top of the network: the network topology affects the channels of information diffusion; the birth and death of connections in the network are, in turn, triggered by the traffic. As Information spread on networks, it can be observed that the cascades which ensue as agents can get infected. The diffusion process is affected by both the actions of agents and the underlying network structure. This paper focuses on existing research in this domain and possible research methodology for ongoing research

Conclusion

The proposed system need and methodology is discussed in this paper. The pseudo flow of information diffusion in the online social network is provided, where LinkedIn, MANET system, and Pinterest will be considered as a key element for analysis. This system will provide significant contribution to identify security elements, marketing elements for ecommerce and can also be useful for various domain user analyses.

A Metrics Suite For Empirical Analysis Of Dynamic Coupling In Object-Oriented Systems

Dr.Akhil Khare,

JASC: Journal of Applied Science and Computations
ISSN NO: 1076-5131

Abstract

Structural properties and static code analysis is the way to define and measure coupling. Coupling measurement has traditionally been performed using static code analysis, because most of the existing work was done on non object oriented code and because dynamic code analysis is more expensive and complex to perform. For modern software systems, focus on static analysis can be problematic because although dynamic binding existed before the advent of object orientation, its usage has increased significantly in the last decade. This paper describes how coupling can be defined and precisely measured based on dynamic analysis of systems. We refer to this type of coupling as dynamic coupling. An empirical evaluation of the proposed dynamic coupling measures is reported in which we study the relationship of these measures with the change proneness of classes. Preliminary results suggest that some dynamic coupling measures are significant indicators of change proneness and that they complement existing coupling measures.

Conclusion

This paper provides a formal, operational definition of dynamic coupling measures for object-oriented systems. The motivation for those measures is to complement existing measures that are based on static analysis by actually measuring coupling at runtime in the hope of obtaining better decision and prediction models because we account precisely for inheritance, polymorphism and dynamic binding. Though no comparison with static coupling and size measures could be performed in the earlier study, those combined results constitute evidence that dynamic export coupling measures are significant indicators of change proneness. The results above should be qualified in a number of ways. But, this is out of the scope of this paper as the purpose of analyzing change proneness was only to provide an empirical validation of our dynamic coupling measures. Another practical limitation is that using dynamic coupling requires extensive test suites to exercise the system. Such test suites may not be readily available. Future work will include investigating other applications of dynamic coupling measures (e.g., test case prioritization), and the costbenefit analysis of using change proneness models such as the ones presented in the current work. These models may be used for various purposes, such as focusing supporting documentation on those parts of a system that are more likely to undergo change, or making use of design patterns to better anticipate change.

Energy Efficient Single Path with Multi Hop Routing Protocol for Mobile Coordinated Wireless Sensor Networks

D.Manasa , Dr. Sehsam Anand

International Journal of Engineering and Technical Research (IJETR)
ISSN: 2321-0869 (O) 2454-4698 (P), Volume-7, Issue-11, November 2017

Abstract

Abstract—Mobile access coordinated wireless sensor network (MC-WSN) is an energy efficient scheme for time-sensitive applications. In conventional sensor networks with mobile access points (SENMA), the mobile access points (MAs) traverse the network to collect information directly from individual sensors. While simplifying the routing process, a major limitation with SENMA is that data transmission is limited by the physical speed of the MAs and their trajectory length, resulting in low throughput and large delay [2]. This problem is resolved by the MCWSN architecture, for which a major feature is that: through active network deployment and topology design, the number of hops from any sensor to the MA can be limited to a pre-specified number. The optimal topology design for MCWSN that minimizes the average number of hops in multi-hop using single path is implemented and throughput analysis is done using energy as the criteria. Putting MC-WSN in the bigger picture of network design and development, the topology is provided network modeling and characterization. Under this general framework it can be seen that MCWSN reflects the integration of structure to ensure reliability/efficiency and ad-hoc enabled flexibility. Index Terms— MCWSN, CCH, CH, SN, MA, UAV, throughput, energy efficiency.

Conclusion

Mobile access coordinated wireless sensor networks (MC-WSN) architecture was proposed for reliable, efficient, and time-sensitive information exchange. MC-WSN exploits the MAs to coordinate the network through deploying, replacing, and recharging nodes. The hierarchical and heterogeneous structure makes the MC-WSN a highly resilient, reliable, and scalable architecture. It provides the optimal topology design for MC-WSN such that "the average number of hops from any sensor to the MA is minimized". The performance of MC-WSN is analyzed in terms of throughput. It shows that with active network deployment and hop number control, MC-WSN achieves much higher throughput and energy efficiency over the conventional SENMA. The analysis also indicated that with hop number control, network analysis does become more tractable. Moreover, putting MC-WSN in the bigger picture of network design and development, it provides a unified framework for wireless network modeling and characterization. Under this general framework, it can be seen that MC-WSN reflects the integration of structure-ensured reliability/efficiency. The idea of hybrid networks, which actually reflects the "convergence of centralized and ad-hoc networks". The evolution of the centralized and ad-hoc networks to hybrid networks indicates that: for wireless communications, we would need both network centric management as well as ad-hoc flexibility in the same time, the network should provide sufficient flexibility by following authorized ad-hoc communications among the nodes or devices.

Evaluation of Distance Measures for Feature based Image Registration using AlexNet

Dr. B. Sandhya

J(IJACSA) International Journal of Advanced Computer Science and Applications,
Vol. 9, No. 10, 2018

Abstract

Image registration is a classic problem of computer vision with several applications across areas like defence, remote sensing, medicine etc. Feature based image registration methods traditionally used hand-crafted feature extraction algorithms, which detect key points in an image and describe them using a region around the point. Such features are matched using a threshold either on distances or ratio of distances computed between the feature descriptors. Evolution of deep learning, in particular convolution neural networks, has enabled researchers to address several problems of vision such as recognition, tracking, localization etc. Outputs of convolution layers or fully connected layers of CNN which has been trained for applications like visual recognition are proved to be effective when used as features in other applications such as retrieval. In this work, a deep CNN, AlexNet, is used in the place of handcrafted features for feature extraction in the first stage of image registration. However, there is a need to identify a suitable distance measure and a matching method for effective results. Several distance metrics have been evaluated in the framework of nearest neighbour and nearest neighbour ratio matching methods using benchmark dataset. Evaluation is done by comparing matching and registration performance using metrics computed from ground truth.

Conclusion

Trained CNN model, AlexNet, is used as feature extractor for registering images with variations such as zoom, rotation, lighting etc. Outputs of fully connected layers, fc6 and fc7 are used as feature descriptors by giving as input a region around the key point of image, which is detected using SIFT. In order to obtain good registration results, evaluation of various distance measures and matching methods is performed. Objective evaluation measures computed from ground truth are used to compare matching and registration performance. It has been observed that Cosine dissimilarity measure, followed by correlation, consistently gives better matching and registration across images of various deformations. Among the various matching strategies tested, results from one way nearest neighbour ratio with a threshold of 1.1 and two way nearest neighbour with a threshold of 0.8 are promising. Our future work involves verifying the effect of distance measures with other CNNs such as VGG and further to design a deepnet to learn similarity between image features.

Secure Data Dissemination In Wireless Sensor Networks Using Enhanced DIDRIP

Dr. H. Jayasree, N.Sabitha

Indian J.Sci.Res. 17(2): 52-525, 2018 ISSN: 0976-2876 (Print)
ISSN: 2250-0138(Online)

Abstract

Data discovery and dissemination protocols are applied to update configuration parameters & distributed management commands in Wireless Sensor Networks (WSN). Available protocols have two drawbacks: Firstly, they are constructed on centralized procedure; where data items are distributed by only base station and hence this procedure does not support emerging concept of multi-owner-multi-user WSNs. Secondly, these protocols were not built to support security so intruders can easily initiate attacks to harm the network. In this paper, we prefer first secure and distributed data discovery and dissemination protocol known as DiDrip. This enables the network owners to grant multiple network users with different permissions to simultaneously and directly disseminate data items to sensor nodes. The DiDrip protocol is enhanced (EDiDrip) to enhance the network life time in distributed wireless sensor network with pre-failure rectification technique. In this enhanced version of DiDrip protocol we replace a node in case of node failure in order to persist the process of data dissemination. DiDrip is demonstrated as provably secure by extensive security analysis. Our analysis reveals that EDiDrip can solve viable number of security issues that are identified.

Conclusion

Wireless Sensor Networks is a wide and open area in networking research, which is increasingly being deployed for monitoring applications. This demands the need for quickly and efficiently disseminating data to sensor nodes to reprogram them to suite the current needs of the application. We experimented EDIDRIP protocol, the first distributed information discovery and dissemination protocol that permits network owners and approved users to disperse information items into WSNs without hoping on the base station and with network life time management. From the results obtained, we conclude that the EDIDRIP protocol provides good energy efficient security architecture to wireless sensor network. The efficiency and security can be improved by adding additional mechanisms to ensure data confidentially in the design of secure and distributed data discovery and dissemination routing internet protocol.

An Optimal Key Management Technique For Secure Data Transmission In MANET

M. Anupama

Journal of Theoretical and Applied Information Technology 31st August 2017. Vol.95. No.16

 ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Abstract

Cryptographic techniques are commonly used for secure data transmission in wireless networks. Most cryptographic techniques, such as symmetric and asymmetric cryptography, often involve the use of cryptographic keys. Key management is one of the vital aspects of security in mobile ad hoc networks. In mobile ad hoc networks, the processing load and complexity of key management are strongly subject to restriction by the node's available resources like energy and the dynamic nature of network topology. The Key Management technique is proposed which uses symmetric key management. The distribution of keys in an authenticated manner is a difficult task in MANET. In this paper, we have proposed a secure and optimal key management system in MANET. Initially the mobile input nodes are selected with the aid of soft computing technique. The nodes are clustered by using Fuzzy C-means (FCM) clustering algorithm. The clustered nodes are then optimized in order to select the exact amount of nodes for communication. This optimization can be performed with the aid of Enhanced Bacterial Foraging Optimization (EBFO) technique. We use this for authenticating and key sharing to forward security parameters in a novel and secure way. For authentication, we will use the Elliptic Curve Deffie-Hellman (ECDH). This key exchange scheme shares a symmetric key among parties, which is necessary to have a low cost confidentiality in upcoming communications. This delivers a minimum overhead on the network by using ECDH.

Conclusion

Key management is vital part of security. Key management protocols play a key role in any secure group communication architecture. This study has confirmed that key management mechanism proposed to guarantee the security of conventional networks are not necessarily suitable or adaptable to MANETs. Novel techniques, designed specifically for MANETs, are necessary. Key management is an important area that will need resolution before wide-scale deployment of ad hoc networks will become practical. Although the key management for MANETs has reached a reasonable level of maturity, it is still a research area with room for innovation. When we have compared our proposed optimal key management secure data transmission system with the existing key management data transmission system, our proposed system has given better results and prove that our proposed system is better than an existing system. Further work will concentrate on refining the metrics. Additionally, it will be interesting to see whether the performance of the metrics may be enhanced by taking into account other factors such as signal strength. Finally, extending the link stability metric to a path rating metric seems promising for use in mobile ad hoc networks.

Reducing Denial-Of-Service Attacks Using Software Puzzle

G. Vijay Kumar

International Journal of Innovative Research in Science, Engineering and Technology, ISSN(Online): 2319-8753 ISSN (Print): 2347-6710

Abstract

Denial-of-service (DoS) and distributed DoS (DDoS) are the major threats in cyber-security. As a countermeasure to such threats client puzzle scheme is implemented. The client puzzle demands a client to perform computationally expensive operations before being granted services to the client from a server. However, an attacker can inflate the capability of DoS/DDoS attacks with fast puzzle solving software and/or built-in graphics processing unit (GPU) hardware to significantly weaken the effectiveness of client puzzles. In order to prevent DoS/DDoS attackers from inflating the puzzle-solving capabilities, a new client puzzle referred to as software puzzle is implemented. Unlike the existing client puzzle schemes, which publish their puzzle algorithms in advance, a puzzle algorithm in the implemented software puzzle scheme is randomly generated only after a client request is received at the server side and the algorithm is generated such that: a) an attacker is unable to prepare an implementation to solve the puzzle in advance and b) the attacker needs considerable effort in translating a central processing unit puzzle software to its functionally equivalent GPU version such that the translation cannot be done in real time.

Conclusion

Software puzzle scheme is implemented to overcome the drawbacks of existing client puzzle scheme which generates a client puzzle in advance and also to overcome GPU-inflated DoS attack. The implemented software puzzle scheme adopts software protection technologies to ensure challenge data confidentiality and code security for an appropriate time period. Hence, it has different security requirement from the conventional cipher which demands long-term confidentiality only. Since the software puzzle may be built upon a data puzzle, it can be integrated with any existing server-side data puzzle scheme, and easily deployed as the present client puzzle schemes do. Although this scheme focuses on GPU-inflation attack, its idea can be extended to thwart DoS attackers which exploit other inflation resources such as Cloud Computing. For example, suppose the server inserts some anti-debugging codes for detecting Cloud platform into software puzzle, when the puzzle is running, the software puzzle will reject to carry on the puzzlesolving processing on Cloud environment such that the Cloud-inflated DoS attack fails. In the implemented software puzzle, the server has to spend time in constructing the puzzle. As a future enhancement, the server time has to be saved to construct the client-side software puzzle for better performance.

A Position Based Energy Efficient Clustering In WSN

G. Vijay Kumar

International Journal of Scientific Research and Engineering Studies (IJSRES) Volume 4 Issue 2, February 2017 ISSN: 2349-8862

Abstract

Wireless Sensor Network (WSN) consists of several tiny and low-power sensors which use radio frequencies to perform distributed sensing tasks. Minimizing the energy consumed while ensuring the connectivity of a network is an important issue to be addressed in WSNs because the batteries powering the sensors may not be accessible for recharging. Clustering in WSNs is an effective technique for prolonging the network lifetime. In this project, we first propose a clustering technique in WSNs named energy-efficient homogeneous clustering then second part is route optimization technique in clustered WSNs. The first parameter to select the cluster head is an energyefficient homogeneous clustering periodically selects the cluster heads according to their residual energy and the secondary parameter is the utility of the sensor to its neighbours. A route optimization technique in clustered WSNs among obstacles uses the shortest path algorithm. In this way, the selected cluster heads have equal number of neighbours and residual energy that reduces the average hop count, packet delay and energy-consumption of WSNs.

Conclusion

By introducing the concept of clustering we found that the life of network got increased thus the quality of service has also increased. We mainly focused on energy-efficient clustered WSNs to prolong the lifetime of WSNs. We also proposed a technique to optimize the routing path among obstacles in clustered WSNs. We simulated the performance of the proposed EHC and ROT and the enhanced Tree Based protocol for different network scenarios and demonstrated that the energy consumption and average hop count in WSNs are reduced due to the clustering of sensors and optimization of routing path, hence the lifetime of WSNs is increased. The parameters tested for the quality of the service are hop count, packet delay, time and energy. In future work, we would like to focus on applying a Fuzzy logic algorithm for route optimization.

Classification of Liver Data using a New Algorithm

Bantu Saritha - Associate Professor

International Journal of Engineering Technology Science and ResearchIJETSR
www.ijetsr.comISSN 2394 – 3386Volume 4, Issue 9September 2017

Abstract

This paper demonstrates the results of a very fast recently discovered, algorithm which was deployed to classify liverfunction data. This data was from a hospital in Hyderabad and the prediction of the algorithm was very accurate and itcan be used for rapid initial diagnosis.

Conclusion

Physician's responsibility is to diagnose disorders of patients and treat them at the earliest. Any wrongdiagnosis can put in danger a patient's life and may even cause his/her death. In this regard, the use ofdifferent methods of artificial intelligence and expert system is a promising strategy for the future. In thispaper, an algorithm called separation of points by planes has been used to classify diseased liver patients fromthe healthier and helped in diagnosing the dangerous hepatitis or liver disorder. This method could diagnosehepatitis or liver disorder in the best state with the accuracy of 85.1%. Total time taken for the completion oftraining is 1 second and testing is 1 second (on a Laptop

Classification of Diseased Plants using Separation of Points by Planes

Bantu Saritha - Associate Professor

International Journal of Engineering Technology Science and ResearchIJETSR
www.ijetsr.com ISSN 2394 – 3386Volume 4, Issue 9September 2017

Abstract

A person easily cannot identify a diseased tree by mere eyesight. Different trees are exposed to differentdiseases. In this paper, our aim is to solve this problem using our algorithm. To serve this purpose, a dataset was takenfrom an online repository named UCI. It is Wilt dataset that consists of some diseased trees along with other land coverthat are fed to the algorithm to identify whether the tree is diseased or not. There are training and testing samples for the'diseased trees' and for 'other land cover'. The data comprises of numerical values related to the texture information,generated by segmenting a Pan-sharpened image and also the segments contain spectral information and textureinformation from the Quickbird multispectral image bands and the panchromatic image band respectively.

Conclusion

In this paper a new algorithm "separating a given set of points by q planes in m-dimensional space" is appliedon Wilt dataset which is fetched from UCI Machine Learning repository. The accuracy obtained using thisalgorithm is 90.4% in the very less time span of 1 second. This method achieved high accuracy whencompared to the accuracy obtained using MLP Neural Network and K Nearest Neighbour methods. Duringour literature survey it is acknowledged that the major techniques for detection of plant diseases are: Neuralnetwork, fuzzy logic, WEKA tool and SVM for classification and K-means for clustering. Now, through thispaper we have proved that, "separation of N points by planes in m-dimensional space" is the best and fastestalgorithm in classifying the diseased plants from the others as shown in above table. Therefore, there may bescope for improving the existing methodology.

A Framework For Comparative Analysis OfWSN Attacks And Counter Measures Recommendations

Mohammed Abdul Azeem

International Journal of Advanced Research in Computer Science, Volume 9, No. 2, March-April 2018 ISSN No. 0976-5697

Abstract

The growth in the need for customized services in hand held devices and sensor based applications are continuously motivating the wireless networks, wireless communications and wireless infrastructures. In the last decade the wireless communication has evolved around the MANETs and IoT devices. Nevertheless, the demands for wireless sensors have not decreased due to less costly and simple deployments measures. The wireless networks especially running on the tiny operating systems are designed and programmed to perform very specific tasks. Also, the processing capabilities of these devices are limited. Henceforth, it is difficult to incorporate additional services into the devices such as routing management, data processing or security. The routing management protocols or the data processing frameworks are often the essential part of the framework. Nevertheless, due to the bottleneck between performance and service availability, the service providers ignore the security issues. Considering the wide use of the wireless sensors ranging from healthcare to tactical usage, it is the demand of the modern research to re-address the security measures of the wireless sensor network. In the recent past, the researchers and practitioners have witnessed a number of attacks on WSN infrastructures and policies. The attacks were diversified in terms of distortions of the information, damage to the network or sometimes vulnerability to the user identifications. Hence, none of the single frameworks are capable of detect all types of attacks on WSN. It is been observed that during any attacks on the WSN, the parametric values related to power, energy and response time changes drastically. Henceforth, any measure of the changes and continuous monitoring may lead to finding a pattern in the data tenting to standard formulations. Thus this work proposes a novel framework to detect the behavioural malfunction of the wireless sensor networks based on the energy, power consumption and response time of the nodes. This is proposed to be the major outcome of this work. Yet another novel outcome of this work is to associate the detection model with the attack response knowledge base in order to generate timely recommendations to avoid the damages. The objective of this work is to create a responsive system for controlling the damages caused by any attack on wireless sensor network for making the world of wireless communication more trustable.

Conclusion

The world of wireless communication is increase along with the deployment demand for wireless sensors. The need to process data also demands the establishment of wireless sensor networks. Nevertheless, the requirements for the security for these deployed networks cannot be ignored. In order to provide proper security mechanism is the need of the current research. Thus this work analyses the types of attacks on WSN and provides a generic framework to detect the attacks based on the network parameters. Also, the lack of attack simulators motivated this work to build a significantly advanced attack simulator frameworks to observe the changes in the network parameters. This outcome will certainly help in building more network configurations with high security. The work also contributes to the counter measures during any attack, thus building a better world for wireless sensor networks.

A Review on Secure Routing Protocols in Wireless Sensor Networks for IOT Applications

Mohammed Abdul Azeem

International Journal Of Innovative Research In Technology © September 2017 | IJIRT | Volume 4 Issue 4 | ISSN: 2349-6002

Abstract

The Wireless Sensor Network (WSN) in present generation has gained its popularity due to its applicability nature in various areas. The cost and structural complexity of a WSN are very low. In addition, through the continuous improvement, WSN has been utilizing in vast applications. The system interconnected with computing device, digital and mechanical instruments, animals, people or other objects is called Internet of things(IoT). The IoT allows objects to be sensed or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention. When IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems. In general, a WSN consists of a sensor node (SN) that gathers the data from the atmosphere/environment. An SN exhibit very low power battery (LPB) and if the battery power gets drained SN will stop its functionality. Once the battery power is drained, it is impossible to recharge it back due to the wide spread network structure. The unfunctionality of an SN may lead to failure of the routing protocol. Commonly a routing protocol facilitates an efficient routing path among the SNs. The security of data over the WSN is always a biggest issue which needs to be resolved. Many of the researchers have explained their views for energy efficient, secure routing protocol for a WSN. It is apparent that security will pose a fundamental enabling factor for the successful deployment and use of most IoT applications and in particular secure routing among IoT sensor nodes, thus mechanisms need to be designed to provide secure routing communications for devices enabled by the IoTtechnology.This survey analyzes existing routing protocols and mechanisms to secure routing communications in IoT, as well as the open research issues. We further analyze how existing approaches ensure secure routing in IoT, their weaknesses, threats to secure routing in IoT and the open challenges and strategies for future research work for a better secure IoT routing. Index terms- Security; Routing; IoT; WSNs; 6LowPAN

Conclusion

WSN is an important part of modern communication systems, in WSN sensor node sense data, collect data from other nodes then process that data and then transmit this collected data to the base station. The IoT could be described as the pervasive and global network which aids and provides a system for the monitoring and control of the physical world through the collection, processing and analysis of generated data by IoT sensor devices. It is projected that by 2020 the number of connected devices is estimated to grow exponentially to 50 billion. This paper surveyed different categories of routing protocols to save energy and extend the life time of sensor network, all security issues such as different attacks to which WSNs are vulnerable are being presented. We have summarized and compared all Secure Routing Protocols in WSNs for IoT applications.

A Mathematical Computational Design of Resource-Saving File Management Schemefor Online Video Provisioning on ContentDelivery Networks

Dr.A.V.Krishna Prasad

International Journal of Mathematics Trends and Technology (IJMTT) – Volume 50 Number 4 October 2017

Abstract

This research paper discusses amathematical computational design of resource-saving file management scheme for online videoprovisioning on content delivery networks.

Conclusion

In this paper, we examine an online video placement scheme for superior utilization and energy-saving in cloud delivery networks. We introduce a new problem that dynamically places incoming video subscribers to CSs to limit the number of active machines as well as the replication overhead. This problem considers both transmission bandwidth and storage space constraints and is modeled in a general manner. It can therefore be applied effectively to various types and scales of CDNs. By classifying servers into different types, our proposed ADP scheme places and reorganizes video subscriptions on their arrival and departure. Through analysis, we demonstrate the effectiveness of ADP regarding performance and overhead. The worst-case overhead of ADP is limited, and the performance difference to the optimum is bounded. The outstanding performance of ADP is also evidenced by the simulations. The results show that ADP significantly outperforms the compared scheme under various conditions and maintains performance approximate to the optimal solution. In addition, the replication overhead of the system is also limited. To the best of our knowledge, ADP is the only scheme that addresses this placement problem and provides all the mentioned advantages. We notice that other types of approaches may effectively reduce the server number (although they might produce heavier migration overhead; e.g., by analyzing and predicting the incoming subscriptions or using machine learning to redistribute replicas).

A Cloud Computing Emerging Security Threats and Its Novel Trends in Knowledge Management Perception

Dr.A.V.Krishna Prasad

International Journal of Emerging Technology and Advanced EngineeringWebsite: www.ijetae.com
(ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 7, Special Issue 2, December 2017)

Abstract

Cloud computing is one in all the newest raisinginnovations of the trendy net and technological landscape.With everybody from the White house to major on-linetechnological leaders like Amazon associate degreed Googlemistreatment or giving cloud computing services it's actuallypresents itself as an exciting and innovative methodology tostore and use Knowledge on the web. Knowledge Management(KM) started over 20 years a gone and its importance werecompleted by the leading organizations. It's currently thoughtof as associate degree integral part of any concern. Economicprocess has competed a major role in however business isconducted and therefore the necessity of innovative metriclinear unit grew. The emergence of data and pc Technologies(ICT) created it doable to place innovative ideas into apply inseveral areas as well as metric linear unit. This paperdiscusses the trends in Knowledge management manner} newrising technologies have compacted the way Knowledge ismanaged. One in all the foremost outstanding technologiesinside the ICT has been the emergence of Cloud computingthat has considerably compact the means IT services areprovisioned. With its key characteristics, like on-demand self-service, IT resource pooling, speedy physical property, pay-as-you-go subscription model and reduced IT prices, it's inspirednumerous organizations to amend their business methods. Thetiny and medium scale organizations will currently availhosted services for major IT activities as well as metric linearunit through Cloud Computing, that was on the far side theirbudget before the arrival of Cloud Computing. The cloudsetting applications are mentioned intimately with regard tothe Knowledge management methods and their combinedability to cater to future desires during this space.

Conclusion

In this analysis, innovative aspects of metric linear unit were mentioned and several other innovative trends were known. A comprehensive discussion of the innovative application of Cloud Computing to the domain of Knowledge Management Systems was mentioned intimately. It showed however the transformation of this KMS to the Cloud setting has resulted in numerous edges, namely, value savings, improved business processes, client satisfaction and higher Knowledge illustration and management. This paper addressed security risks facing cloud suppliers and mentioned many recognized by the Cloud Security Alliance (CSA).

They include:

*Cyber attacks and hacking of sensitive Knowledge *Illegal local network access from cloud services.
*Stolen Knowledge from cloud computing employees.
*Attacks from other customers *Adherence and compliance of providers to security standards,
*Data loss Data Segregation from other customers. *Security culture among providers. *Evolving threats that may
target clouds. *Privacy concerns

Integrating Weka Into Web Application: Predicting Student's Performance

Dr.A.V.Krishna Prasad

Int. Journal of Engineering Research and Application www.ijera.com
ISSN : 2248-9622, Vol. 7, Issue 12, (Part -7) December 2017, pp.77-85

Abstract

In today s world, there are many stand alone data mining tools that can be used by the academicians to carry outdata mining tasks. Any Educational Institute can show the curiosity to know the future performance of recentlyjoined students. To address this, We have analyzed the data set containing information about students, andresults in first year of the previous batch of students. By applying the ID3 (Iterative Dichotomiser 3), C4.5,Naive Bayes, Multilayer Perceptron and K-Nearest Neighbour classification algorithms on this data, we havepredicted the general and individual performance of freshly admitted students in future examinations and madethe entire implementation dynamic to train the prediction parameters itself when new training sets are fed intothe web application.

Conclusion

In this paper, we used only classificationand regression modules of weka. In classification,we used five decision tree algorithms and inregression, we used linear regression and didpredictions on the student data set that is collectedfrom academic section. As of now, we predictedwhether the student passes or fails and whatpercentage he may get in his/her final examination.We tested our application with a moderate data sethaving fields like application id, merit marks, meritnumber, name, gender, location, admission type,caste and generated a model with an accuracy of80%. This model also displayed all the mismatchedrecords. Both singular and bulk evaluation areevaluated with equal ease.There is a scope of predicting whetherwhat class a student gets like first class, secondclass, distinction i.e. logistical regression can bedone, what attendance percentage can a studenthave etc. Extra-curricular activities can also havesignificant impact for predicting student sperformance. This can be extended to other wekamodules like clustering, association rule mining,selecting featured attributes, visualization.

Securing Cloud Data Using Encryption Algorithms

Subhashini Pallikonda
(IETE) Institution of Electronics and Telecommunication, OU Campus, Hyderabad, India
19th November 2017, www.conferenceworld.in ICRTESM – 17 ISBN:978-93-86171-79-5

Abstract

In Cloud computing technology there are a set of important policy issues, which include issues of privacy, security, anonymity, telecommunications capacity, government surveillance, reliability, and liability, among others. But the most important between them is security and how cloud provider assures it. Encryption is a well known technology for protecting sensitive data. This paper presents an overview of security issues and also analyzes the feasibility of applying encryption algorithm for data security and privacy in cloud Storage. It also tried to cover the various algorithms used by researchers to solve the open security problems. In this paper we have discussed about cloud computing security issues, mechanism, challenges that cloud service provider face during cloud engineering and presented the metaphoric study of various security algorithms.

Conclusion

In this paper encryption algorithms have been proposed to make cloud data secure, vulnerable and gave concern to security issues, challenges and also comparisons have been made between AES, DES, Blowfish and RSA algorithms to find the best one security algorithm, which has to be used in cloud computing for making cloud data secure and not to be hacked by attackers. Encryption algorithms play an important role in data security on cloud and by comparison of different parameters used in algorithms, it has been found that AES algorithm uses least time to execute cloud data. Blowfish algorithm has least memory requirement. DES algorithm consumes least encrypt-ion time. RSA consumes longest memory size and encryption time. By doing implementation for all algorithms in IDE tool and JDK 1.7, the desired output for the data on cloud computing has been achieved. In today s era demand of cloud is increasing so the security of the cloud and user is on top concern. Hence, proposed algorithms are helpful for today s requirement. In future several comparisons with different approaches and results to show effectiveness of proposed framework can be provided.

Big Data: Security Aspects, New Challenges and Opportunities

SubhashiniPallikonda, M Lakshmi Narasimha Reddy

(International Journal of Innovations & Advancement in Computer Science
IJIACS ISSN 2347 – 8616 Volume 6, Issue 12 December 2017

Abstract

The era of big data is being generated by everything around us at all times. Every digital process and social media exchange produces it. Systems, sensors and mobile devices transmit it. Big data is arriving from multiple sources at an alarming velocity, volume and variety. To extract meaningful value from big data, you need optimal processing power, analytics capabilities and skills. Big data has become an important issue for a large number of research areas such as data mining, machine learning, computational intelligence, information fusion, the semantic Web, and social networks. The combination of big data technologies and traditional machine learning algorithms has generated new and interesting challenges in other areas as social media and social networks. These new challenges are focused mainly on problems such as data processing, data storage, data representation, and how data can be used for pattern mining, analyzing user behaviors, and visualizing and tracking data, among others. Now a days, big data is a standout amongst the most talked point in an Information Technology industry. It will play a critical part in future. Big data changes the way that information is overseen and utilized. The various applications like, banking, education, healthcare, retail, traffic management, etc., use a big data to store huge amount of data. In this paper, we discuss the characteristics, security aspects, challenges and opportunities of big data.

Conclusion

We have entered an era of Big Data. Through better analysis of the large volumes of data that are becoming available, there is the potential for making faster advances in many scientific disciplines and improving the profitability and success of many enterprises. However, many technical challenges described in this paper must be addressed before this potential can be realized fully. The challenges include not just the obvious issues of scale, but also heterogeneity, lack of structure, error-handling, privacy, timeliness, provenance, and visualization, at all stages of the analysis pipeline from data acquisition to result interpretation. These technical challenges are common across a large variety of application domains, and therefore not cost- effective to address in the context of one domain alone. Furthermore, these challenges will require transformative solutions, and will not be addressed naturally by the next generation of industrial products. We must support and encourage fundamental research towards addressing these technical challenges if we are to achieve the promised benefits of Big Data.

Privacy and Security of Data in Cloud using Homomorphic Encryption

Subhashini Pallikonda,

International Journal of Innovations & Advancement in Computer Science
IJIACS ISSN 2347 – 8616 Volume 6, Issue 11 November 2017

Abstract

Cloud computing is a technology that is growing in popularity as it reduces the investment burden for infrastructure, software, hardware or any kind of resource in an organization. However, one of the biggest issues in implementing cloud remains data security. To ensure security, there are lots of traditional encryption algorithms such as play fair cipher and DES, but these algorithms are only used to encrypt plain text into cipher text in communication. For processing on cloud, it requires to convert cipher text into plain text which can become an easy target for hackers. This issue can be overcome with a popular algorithm, namely, homomorphic encryption. It is a technique which ensures secure transmission and secure processing of data on cloud without compromising privacy. In this paper, we have discussed the concept and significance of homomorphic encryption through examples. By using a case, the RSA algorithm is done and the practical use of partial homomorphic encryption technique is demonstrated. Also, the performance of RSA partial homomorphic encryption algorithm is compared with that of Paillier algorithm in terms of encryption and decryption time.

Conclusion

The cloud computing security based on fully Homomorphic encryption is a new concept of security which enables providing results of calculations on encrypted data without knowing the raw data on which the calculation was carried out, with respect of the data confidentiality. Our work is based on the application of fully Homomorphic encryption to the Cloud Computing security considering: The analyze and the improvement of the existing cryptosystems to allow servers to perform various operations requested by the client. The improvement of the complexity of the Homomorphic encryption algorithms and compare the response time of the requests to the length of the public key

Evaluation of Images Using Various Distance Metrics

Venkataramana Battula, Saritha Ambati

Int. Journal of Engineering Research and Application www.ijera.com
ISSN : 2248-9622, Vol. 8, Issue 1, (Part -V) January 2018, pp.29-34

Abstract

Due to the digitization of data and advances in technology, it has become extremely easy to Obtain and storelarge quantities of data, particularly Multimedia data. Image data plays vital role in every aspect of the systemslike business for marketing, hospital for surgery, engineering for construction, Web for publication and so on.Fields ranging from Commercial to Military need to analyze these data in an efficient and fast manner. The needfor image mining is high in view of such fast growing amounts of image data. Similarity and dissimilaritymeasures referred to as measures of proximity. Computing similarity measures are required in many datamining tasks. Categorical data, unlike numeric data, conceptually is deficient of default ordering relations on theattribute values. Devise distance metrics in data mining tasks for categorical data more challenging. Efficientextraction of low level features like color, texture and shapes for indexing and fast query image matching withindexed images for the retrieval of similar images by content . Features are extracted from images in pixel andcompressed domains. The feature extraction and similarity measures are the two key parameters for retrievalperformance. A similarity measure plays an important role in image retrieval. This paper compares differentdistance metrics such as Euclidean, Manhattan,Chebyshev, Canberra distances to find the best similaritymeasure for clustering the images.

Conclusion

K-Means using Chebyshev distancemeasure takes less time, occupies less space withminimum number iterations and SSE.

Image Retrieval Using Color Features

VenkataramanaBattula*, B Sandhya, A.V. Krishna Prasad*****

Int. Journal of Engineering Research and Application www.ijera.com
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Abstract

Due to the digitization of data and advances in technology, it has become extremely easyto obtain and store large quantities of data, particularly Multimedia data. Image dataplays vital role in every aspect of the systems like business for marketing, hospital forsurgery, engineering for construction, Web for publication and so on. Fields ranging fromCommercial to Military need to analyze these data in an efficient and fast manner. Theneed for image mining is high in view of such fast growing amounts of image data. In datamining, one typically works with immense volumes of raw data, which demands effectivealgorithms to explore the data space. In analogy to data mining, the space of meaningfulfeatures for image analysis is also quite vast. Recently, the challenge associated with theseproblem areas have become more tractable through progress made in machine learning andconcerted research effort in manual feature design by domain experts. Presently, tools formining are few and require human intervention. The approach commonly followed to minefrom Images i.e. extract patterns and derive knowledge from large collections of images,deals mainly with identification and extraction of unique features for a particular domain.Feature selection and extraction is the pre-processing step of Image Mining. Obviously thisis a critical step in the entire scenario of Image Mining. Though there are various featuresavailable, the aim is to identify the best features and thereby extract relevant informationfrom the images. Unique characteristics of image mining then analyze the overall processand discuss the main technology of image. The standard data mining techniques forclassification/ clustering are applied on the extracted features, such as color. The featuresextracted and the techniques used are then evaluated for their contribution to solving theproblem. Many different methods for measuring the performance of a system have beencreated and used by researchers, the most common of which are precision and Recall.

Conclusion

The set of 1000 images are clustered into 10 groups using Simple K-Means. The clusteringis performed on 18 color features extracted from each image. Given a query image, thecluster/group of images closest to the query image is found. Distance between the cluster'scentroids and the image feature vector is computed to find the cluster to which the imagebelongs to. And can find the nearest images of the given query image within the clusterusing KNN.At present all the extracted 18 features used for computation. In future reduction innumber of features can be pursued to reduce the computation.

Performance Evaluation Of Distance Metrics For TerraSAR-X Image Alignment

B. Sirisha

Journal of Advanced Research in Dynamical and Control Systems
Vol. 9, ISSUE 7, 2017

Abstract

Image alignment is the fundamental process in most of the remote sensing applications likeimage fusion ,reconstruction, navigation, retrieval, and mosaicing. These applications rely onaccurate image alignment, which in turn strongly depends on the distance measure used for findingimage correspondence. However the suitability of distance measure depends on the characteristicsof the images between which similarity has to be computed. Hence there is a dire need to identifysuitable distance measure for synthetic aperture radar images. We present a rigorous performanceevaluation of six distance measure namely Euclidean, Manhattan, Cosine,Chi-Square, Correlation and Bhattacharyya distance in both matching and aligning phase of thealgorithm. These results are validated against ground truth values by computing precision score andimage alignment error. The results prove that the most extensively used and familiar distancemeasures, such as the Euclidean and Manhattan distance do not always perform well and reach adesired similarity metric estimate. It has been proved that a cautious selection of a distance measurewill improve the alignment accuracy of SAR images.

Conclusion

In this paper we have validated the significance of selecting the suitable distance measure to variedSAR image category. We have also tested the experiments with SAR images that are geometricallydistorted and optical images. Six vector distance measures namely Euclidean distance, Manhattandistance, Cosine distance, Chi-Square distance, Correlation distance and Bhattacharyya distance areinvestigated in matching and aligning SAR images which belong to varied look angle usingobjective measures. The results are validated against ground truth values and precision score andimage alignment error is calculated for each distance measure to identify the suitable distancemeasure. The results prove that the most extensively used and familiar distance measures, such asthe Euclidean and Manhattan distance do not reach a desired similarity metric estimate,Bhattacharya distance irrespective to image deformation and distortion has outperformed otherdistance measures. It is subjectively assessed that the number of images aligned using Bhattacharyadistance and Manhattan distance is more compared to chi-square, correlation and Euclidian.

Evaluation of Local Feature Detectors and Descriptors for LookAngle Varied Terra-SAR X Band Images

B.Sirisha, B. Sandhya

International Journal of Control Theory and ApplicationsISSN : 0974-5572
International Science PressVolume 10 Number 30 2017

Abstract

Due to exponential growth of remote sensing sensors, the use of high resolution SAR images in diverseapplications like land classification, climate monitoring, disaster management, map compiling and updating havereceived a remarkable boost. Such applications make use of varied image processing techniques like changedetection, image fusion, 3D visualization, image alignment, which directly rely on feature extraction techniques. Thesuccess of such applications greatly depends on identifying a suitable feature detector/descriptor. Though researchin the fi eld of feature extraction, is extensive for optical images, little work has progressed for synthetic aperturеradar (SAR) images whose interpretation is not always straightforward, because of the non-intuitive, side-lookinggeometry . The focus of this paper is to investigate and analyse the behaviour of state of art detectors and descriptorson look angle varied SAR images. We present a rigorous performance evaluation of the widely used detector anddescriptor combinations on the Terra SAR X band images using objective measures like repeatability, precisionand recall. The performance is evaluated using ground truth homography on a dataset comprising of all the affi netransformations like rotation, scale and induced speckle noise. Through this investigation useful insights have beengained for applying state-of-the art local features to Terra SAR-X band images with diverse properties.

Conclusion

In this paper we have assessed performance of widely used local feature detectors and feature descriptorson look angle varied Synthetic Aperture Radar images. Look angle variation between SAR images greatlyaffects the geometry and characteristics of images.We have studied the effect of look angle variation in featuredetection and description for state of art detectors and descriptors.A dataset consisting of all possible geometricdeformation has been built from look angle varied SAR images, and a ground truth homography matrixcomputed. Metrics like repeatability, precision and recall are used for evaluation. It has been observed thatsingle detector descriptor combination cannot be efficient for all kinds of images and deformations. Classicalfeature detectors like SIFT, is still robust and shows good performance for scale varied SAR images. HoweverHessian Affi ne with SGLOH2 and Hessian Laplace with sGLOH descriptor have shown good performance forLook angle varied SAR Images with induced speckle noise. In addition Hessian Affi ne with MROGH certainlyis robust in fi nding consistent matches across rotation deformation. As observed, SIFT is sensitive to noise andperformance dropped when speckle noise was added to images. In addition, it cannot address deformationsother than scale, like rotation. Hence it is efficient to use affi ne invariant detectors together with descriptors likesGLOH, when two SAR images have look angle and rotation based deformation.

Bag-of-Spatial Words(BoSW)Framework for Predicting SAR Image Registration in Real Time Applications

B.Sirisha, B. Sandhya

Elsevier Procedia Computer ScienceJournal ISSN: 1877-0509

Abstract

SAR Image registration is a precursor for several remote sensing applications, which need precise spatial transformation betweenthe real time moving image and fixed off-line image. In such applications, the processing time in finding whether the moving imagescan be registered with fixed image constitute an overhead. Hence we have approached the problem by trying to predict if the givenSAR images can be registered or not even without registering them. The proposed image registration approach incorporates aclassifier into the standard pipeline of feature based image registration. The attributes for the classifier model are derived fromfusing the spatial parameters of the feature detector to the descriptor vector in bag of visual words framework.c 2017 The Authors. Published by Elsevier B.V.Peer-review under responsibility of the scientific committee of the 7th International Conference on Advances in Computing &Communications.

Conclusion

Registering SAR images varying in look angle is a challenging task as small variation in look angle changes thephotometric and geometric characteristics of SAR image to a large extent. The proposed approach can predetermine ifthe images can be accurately registered . The advantage of this approach is that, the parameters needed are computedfrom the features extracted as part of registration pipeline using BoW framework. It is demonstrated that the detectorparameters when fused in the descriptor BoW framework improves the accuracy of prediction. The fused BoW imagerepresentation is extensively tested on a large dataset of SAR images to find the exact error of registration. Whentrying to register two images blindly, i.e. without knowing the kind of deformation or common overlap between them,the fusion of feature detector and descriptor parameters are used in the backdrop of BoW model that is effective inpredicting the outcome of registration. The proposed registration approach has been demonstrated to be effective interms of time as compared to the standard image registration approach.

Iterative Synthetic Aperture Radar Image Registration using ViewSynthesis (IIRVS)

B.Sirisha, B. Sandhya

Elsevier Procedia Computer ScienceJournal ISSN: 1877-0509

Abstract

Image registration is a preprocessing operation in several synthetic aperture radar (SAR) image applications. View synthesis approach is incorporated in the standard pipeline of feature based image registration, to feed feature detector with additional syntheticviews of an image. Incorporating view synthesis improves the registration performance albeit at the cost of additional memory andtime to be spent on generation of views and feature extraction across all the views. Hence an iterative approach is proposed whichgradually increases the views to be generated till the images are registered. The evaluation results show that the proposed approachachieves high-precision and robust registration of look-angle varied TerraSAR-X images.

Conclusion

An iterative SAR image registration using view synthesis (IIRVS) is proposed to provide robust and accurateregistration. It has been observed that even an affine invariant detector like Hessian Affine is limited in addressingregistration of SAR images. Hence the need to generate multiple synthetic views. However, adding views in thefeature extraction greatly increases the complexity in terms of time and space. Hence instead of generating equalnumber of views for every pair of images, an iterative approach is used which gradually increases the number ofviews until the images are registered. The issues like parameters for generation of views, estimation of registrationerror, increment in views were solved by extensive testing on a considerable dataset of SAR images. Our future workincludes finding relation between deformation of images and the optimum views needed for registring them.

A Framework for Image Alignment of TerraSAR-X Images Using FractionalDerivatives and View Synthesis Approach

B.Sirisha, B. Sandhya

Journal of Intelligent System 2020; 29(1): 364–377

Abstract

Conventional integer order differential operators suffer from poor feature detection accuracy andnoise immunity, which leads to image misalignment. A new affine-based fractional order feature detection algorithm is proposed to detect syntactic and semantic structures from the backscattered signal of aTerraSAR-X band stripmap image. To further improve the alignment accuracy, we propose to adapt a viewsynthesis approach in the standard pipeline of featurebased image alignment. Experiments were performedto test the effectiveness and robustness of the view synthesis approach using a fractional order feature detector. The evaluation results showed that the proposed method achieves high precision and robust alignmentof look-angle-varied TerraSAR-X images. The affine features detected using the fractional order operator aremore stable and have strong capacity to reduce sturdy speckle noise.

Conclusion

AIAVS is used to address challenging geometric deformation that can arise between source and target images. However, in case of Terra SAR-X images, in addition to geometric deformation, we need to address the problems arising due to sturdy speckle noise. It is observed that integer order feature detectors fail to detect more numbers of feature points; hence, we have developed a fractional derivative-based feature detector to counter this problem. Incorporating fractional-based affine detector in view synthesis approach improves the accuracy of Terra SAR-X image alignment even in the presence of speckle noise.

Design and Implementation of 6lowpan Using Coapin Internet of Things

M.V.R Jyothisree

International Journal of Engineering Research in Computer Science and Engineering(IJERCSE)Vol 4, Issue 12, December 2017

Abstract

IPv6-enabled low-power wireless personal area networks of smart objects (6LoWPANs) play an important part in theInternet of Things (IoT), especially on account of the Internet integration (IPv6), energy consumption (low-power), and ubiquitousavailability (wireless). This paper presents our experience of designing and implementing 6LoWPANs for developing IoTapplications. The performance evaluation provides a comprehensive analysis on several communication aspects between6LoWPANs and regular IPv6 networks such as energy consumption, network performance, and service communication.

Conclusion

In IoT, research work was focused on implementation of6LowPan using CoAP .Further ,there are other algorithmsthat can be implemented in IoT and compare theirperformance based on a set of network parameters.

Performance Evaluation of RPL under Black Hole Attackand Flooding Attack in Internet of Things using Contik iOS

M.V.R Jyothisree

IJRECE VOL. 6 ISSUE 2 APR.-JUNE 2018 ISSN: 2393-9028 (PRINT) | ISSN: 2348-2281 (ONLINE)

Abstract

The Internet of Things (IoT) is a novel paradigmthat is rapidly gaining ground in the scenario of modernwireless telecommunications. The basic idea of this concept isthe pervasive presence around us of a variety of things orobjects – such as Radio-Frequency Identification (RFID) tags,sensors, actuators, mobile phones, etc. – which, throughunique addressing schemes, are able to interact with eachother and cooperate with their neighbors to reach commongoals. RPL supports message confidentiality and integrity.Supports Data-Path Validation and Loop Detection. Securityis a highly challenging issue in Internet of Things.Understanding possible forms of attacks is the first steptowards developing good security solutions. The presence ofmalicious nodes will affect the performance and reliability ofthe network. Flooding consists of generating a large amountof traffic through DIS messages, causing nodes within rangeto send DIO messages (used to advertise information aboutDODAG's to new nodes) and reset their trickletimers(supposed to increase as the network stabilizes). Notethat, if secure DIS are used, this attack can still be performedusing a compromised node. Black hole attack, aims to dropall the packets that the malicious node is supposed to forward,combined with a sinkhole attack, it can be very damaging as itcauses the loss of the whole deflected traffic. This attack canbe seen as a denial of service attack

Conclusion

Our first goal was to build a convenient framework fortesting a malicious node into Cooja simulations. R PL AttacksFramework is a very promising as it already handles variousinteresting features for quickly designed and implementingmalicious nodes.Our second goal was to test and show the effects of somechosen attacks. Indeed, we have shown some relevant attacks,uniformly chosen amongst the presented taxonomy, and theirexpected results on some relevant WSN topologies.

Research Methodology on Offline and Online Signature Verification and Forgery Detection

Haritha Damarla

Int. Journal of Engineering Research and Application www.ijera.com
ISSN : 2248-9622, Vol. 8, Issue 1, (Part -V) January 2018, pp.29-34

Abstract

This research review paper discusses about Offline and Online Signature Verification and Forgery Detection.In this paper we discuss various methods used in offline signature verification like DTW,HMM,GMM and Fuzzy Modellig. We propose to use SVC2004 Database of online signatures, making use of various measurements a digital signature tablet provides for the modelling of verification and forgery detection system.

Conclusion

This research review paper discusses about Offline and Online Signature Verification and Forgery Detection.

Reducing Denial-Of-Service Attacks Using Software Puzzle

K. Asha Rani, G. Vijay Kumar

International Journal of Innovative Research in Science, Engineering and Technology ISSN(Online): 2319-8753 ISSN (Print): 2347-6710

Abstract

Denial-of-service (DoS) and distributed DoS (DDoS) are the major threats in cyber-security. As a countermeasure to such threats client puzzle scheme is implemented. The client puzzle demands a client to perform computationally expensive operations before being granted services to the client from a server. However, an attacker can inflate the capability of DoS/DDoS attacks with fast puzzle solving software and/or built-in graphics processing unit (GPU) hardware to significantly weaken the effectiveness of client puzzles. In order to prevent DoS/DDoS attackers from inflating the puzzle-solving capabilities, a new client puzzle referred to as software puzzle is implemented. Unlike the existing client puzzle schemes, which publish their puzzle algorithms in advance, a puzzle algorithm in the implemented software puzzle scheme is randomly generated only after a client request is received at the server side and the algorithm is generated such that: a) an attacker is unable to prepare an implementation to solve the puzzle in advance and b) the attacker needs considerable effort in translating a central processing unit puzzle software to its functionally equivalent GPU version such that the translation cannot be done in real time.

Conclusion

Software puzzle scheme is implemented to overcome the drawbacks of existing client puzzle scheme which generates a client puzzle in advance and also to overcome GPU-inflated DoS attack. The implemented software puzzle scheme adopts software protection technologies to ensure challenge data confidentiality and code security for an appropriate time period. Hence, it has different security requirement from the conventional cipher which demands long-term confidentiality only. Since the software puzzle may be built upon a data puzzle, it can be integrated with any existing server-side data puzzle scheme, and easily deployed as the present client puzzle schemes do. Although this scheme focuses on GPU-inflation attack, its idea can be extended to thwart DoS attackers which exploit other inflation resources such as Cloud Computing. For example, suppose the server inserts some anti-debugging codes for detecting Cloud platform into software puzzle, when the puzzle is running, the software puzzle will reject to carry on the puzzlesolving processing on Cloud environment such that the Cloud-inflated DoS attack fails. In the implemented software puzzle, the server has to spend time in constructing the puzzle. As a future enhancement, the server time has to be saved to construct the client-side software puzzle for better performance.

Reversible Data Hiding in Encrypted Images with Private Key Cryptography

Wajahath Hussain Razvi, Dr.Ch.Samson

International Journal of Engineering and Technical Research (IJETR)
ISSN: 2321-0869 (O) 2454-4698 (P) Volume-7, Issue-11, November 2017

Abstract

This project proposes a reversible scheme for cipher images which are encrypted using a simple cipher involving key bunch matrix. Key bunch matrix is a simple and convenient method to encrypt an image. The secret text data should be converted into its equivalent decimal values using EBCDIC code. The decimal values are converted into binary; then the data is embedded into cipher image by using lossless steganography technique based on the key and sent to the receiver. The secret data is extracted from the received image using key. The receiver generates decryption key and decrypts the image using the same key. The scheme is able to embed secret data in encrypted image in a secure manner without any loss.

Conclusion

Reversible data hiding in encrypted images using private key cryptography is implemented in this project, the cipher pixel values are replaced with new values which contains embedded data in LSB. Here, the hidden data can be extracted directly from the encrypted image by using key. The embedding operation does not affect the original image. The prevention of data attack can be reduced and Information security can be provided at greater extend. Total lossless data recovery is possible at the time of data extraction. The data embedding is lossless and also secure as it is a key based method. Image encryption is simple and provides better security.

Simulation of Routing protocol for Low power and Lossy Networks with Cooja Simulator

Nithya Lakshmi N M. Hanmandlu

International Journal of Computer Sciences and Engineering Open Access
Research Paper Volume-5, Issue-8 E-ISSN: 2347-2693

Abstract

Low power and Lossy Networks now regarded as one of the most extensive study areas are comprised of a huge number of constrained nodes with restricted power, memory and processing facility. Besides, nodes in these networks consistently function on batteries and shows evidence of unpredictable communication often. Routing in such constrained networks is extremely tough since the available protocols were not suitable for low-power and lossy networks and thus the Internet Engineering Task Force (IETF) ROLL Working Group proposed an IPv6 based Routing Protocol for Low power and Lossy Networks called RPL capable of forming network routes issuing information about routing among nodes and adapting to network topologies. This paper mainly focuses on the simulation study of routing protocol for low power and lossy networks with Cooja simulator

Conclusion

Low power networks are rapidly increasing thereby demanding a good routing solution based on IPv6 addressing scheme to route vast data. RPL was proposed to address this issue where we are concerned with the simulation study of the protocol. The simulations are performed using Cooja simulator in Contiki operating system with MRHOF objective function employing ETX metric. RPL helps in building network routes undergoing topology changes. Based on the analysis of results, it is observed that RPL provides a good routing solution for LLNs.

An Improved PSO-SIFT Algorithm for Remote Sensing Images Using Scharr Operator

Praveen Kumar,D.Sirisha , Dr.AkhilKhare

Abstract

The Performance of Position Scale Invariant Feature Transform (PSO-SIFT) algorithm on SAR images decreases in the presence of speckle noise which leads to false feature point detections and matches. The owing inherent characteristicsof SAR images like broad dynamic range and the multiplicative nature of speckle noise, thegradient magnitude is strengthened on homogeneous regions. Hence the false detection'son high contrast regions are not suppressed. In order to make feature detection robusttowards the speckle noise, we have investigated the use of Scharr operator in thedevelopment of feature detector paving the way for a new scale invariant feature detectorbased on the Position Scale Invariant Feature Transformdetector. The new scale invariantdetector, called improved PSO-SIFT, allows a stable and fine feature pointselectionwithout fine tuning the approach. It yields good results compared with those of the contemporaryfeature detectors like PSO-SIFT, SAR SIFT and SIFT on the TSX image data-set.

Conclusion

In this letter, we have proposed an improved PSO-SIFT method is adapted to remote sensing images. It relies on a new gradient computation method adapted to SAR and optical images and robust to complex non-linear intensity transformation of images. In addition, a feature point matching algorithm that combines the image location, image scale, and image rotation of each keypoint to beselected from a large database of other keypoints will increase the number of correct correspondences has been proposed. . Experimental results on SAR and optical images show that our method reveals better performance than thePSO-SIFT Sobel, Prewitt, Tiansi,Modified G-Lfractional derivative filter V=1, SIFT and the SAR-SIFT algorithm in terms of thescore of repeatability and correctly matched number of keypoints.

Faculty Achievements

Faculty Name	Category	Level	Title	Date DD-MM-YYYY	Description
Tiruvayipati Sujanavan	*Appreciation*	*National*	Contributing as Mentor	06-07-2017	For guidance during "Smart India Hackath on 2017" under Ministry of Commerce and Industry
Vikram Narayandas	*Appreciation*	*Institution*	Awarded Certificate of Appreciation	19-09-2017	Coordinator for "Analytics using R" One day workshop in MVSREC
Gummedelli Srishailam	*Achievement*	*National*	Programming Essentials in C, CISCO	28-11-2017	Qualification for CLA: Programming Language Certified Associate Certification
Daggubati Sirisha	*Award*	*National*	Paper Presenter Award at International Conference	05-01-2018	Awarded to the CSI member Faculty who presented papers at prestigious International Conferences-Tier:1 during 01/07/2017 to 30/06/2018
Tiruvayipati Sujanavan	*Appreciation*	*Institution*	Developer for "Course Exit Survey"	24-01-2018	Web Application to survey students and map the course outcomes for various subjects
Kanajam Muralikrishna	*Appreciation*	*Institution*	UX Tester	24-01-2018	Web Application to survey students and map the course outcomes for various subjects
Vikram Narayandas	*Appreciation*	*Institution*	Awarded Certificate of Appreciation	31-01-2018	MVSREC for Cisco activities

Faculty Achievements

Faculty Name	Category	Level	Title	Date DD-MM-YYYY	Description
Kanajam Muralikrishna	*Appreciation*	*Institution*	For efforts & services as a Cisco NetAcad Instructor	31-01-2018	Cisco Activities at MVSREC
T. Srikanth	*Appreciation*	*Institution*	Chief Faculty Coordinator	17-02-2018	Certificate of Excellence
Vikram Narayandas	*Award*	*National*	Expert level Instructor Excellence Award	24-03-2018	In recognition of Expert Level Instructor Excellence and lasting contributions to the CISCO Networking Academy Program.
Kanajam Muralikrishna	*Award*	*National*	Expert Level Instructor Excellence Award	24-03-2018	In recognition of Expert Level Instructor Excellence and lasting contributions to the CISCO Networking Academy® Program

Student Achievements

Roll Number	Name of the Award	Name of International Institution / Organisation from where the award has been received
2451-14-733-024	OU III Rank	OU
2451-14-733-020	OU IV Rank	OU
2451-14-733-008	OU V Rank	OU
2451-14-733-129	OU VI Rank	OU
2451-17-733-117	Gold Medal for Academic Excellence	MVSREC
2451-16-733-065		
2451-15-733-067		
2451-16-733-168	Best Paper Award , Innovative Technologies in Engineering-2018	OU
2451-16-733-133		
2451-15-733-064	I Prize in Project Expo,	MVSREC
2451-15-733-154	Grade-Elite,NPTEL	NPTEL
2451-16-733-018	II Prize in Paper Presentation ,	MVSREC
2451-16-733-019	II Prize in Paper Presentation	MVSREC
2451-15-733-048	II Prize in Googled	MVSREC
2451-14-733-022	MBA	IIM
2451-14-733-004	MBA	UCLAN
2451-14-733-179	Score-294	GRE
2451-14-733-132	Score-296	GRE

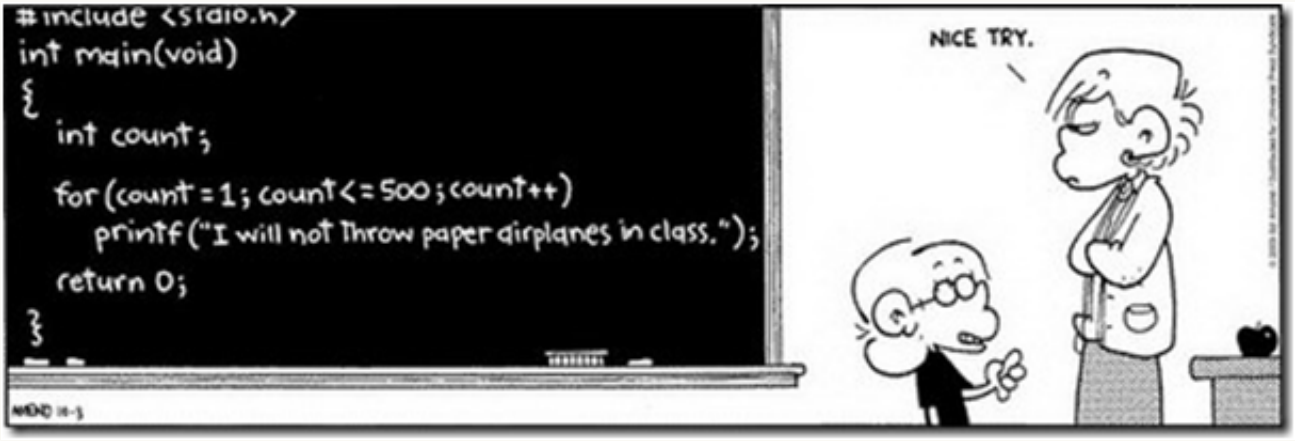
Jokes

1. A young computer science student is on the phone with his father...
   His father says: "so how have your classes been going?"
   The son replies: "not bad. I did really well on my test on hexadecimal today! It was only worth fifteen points, but I'm still happy about it."
   "Oh yeah? What grade did you get?"
   "An F!"

2. What's the object-oriented way to become wealthy?
   Inheritance.

3. I changed my password to 'incorrect'. So whenever I forget what it is the computer says "Your password is incorrect". (Not advisable!).

4.



Smart Imposition!

CIA : Computer Industry Acronyms

CD-ROM: Consumer Device, Rendered Obsolete in Months
PCMCIA: People Can't Memorize Computer Industry Acronyms
ISDN: It Still Does Nothing
SCSI: System Can't See It
MIPS: Meaningless Indication of Processor Speed
DOS: Defunct Operating System
WINDOWS: Will Install Needless Data On Whole System
OS/2: Obsolete Soon, Too
PnP: Plug and Pray
APPLE: Arrogance Produces Profit-Losing Entity
IBM: I Blame Microsoft
MICROSOFT: Most Intelligent Customers Realize Our Software Only Fools Teenagers
COBOL: Completely Obsolete Business Oriented Language
LISP: Lots of Insipid and Stupid Parentheses
MACINTOSH: Most Applications Crash; If Not, The Operating System Hangs
AAAAA: American Association Against Acronym Abuse.
WYSIWYMGIYRRLAAGW: What You See Is What You Might Get If You're Really Really Lucky And All Goes Well.

Dr.D. Sirisha.,
Asst. Prof., ally Lucky And All Goes Well.

Tricky Riddles

1) WHAT CAN BE SEEN ONCE IN A MINUTE,
TWICE IN A MOMENT,
AND NEVER IN A THOUSAND YEARS?

2) I AM NOT ALIVE, BUT I HAVE 5 FINGERS. WHAT AM I?

3) A TRUCK DROVE TO A VILLAGE AND MET 4 CARS. HOW MANY VEHICLES WERE GOING TO THE VILLAGE?

4) WHAT BEGINS WITH T, ENDS WITH T, AND HAS T IN IT ?

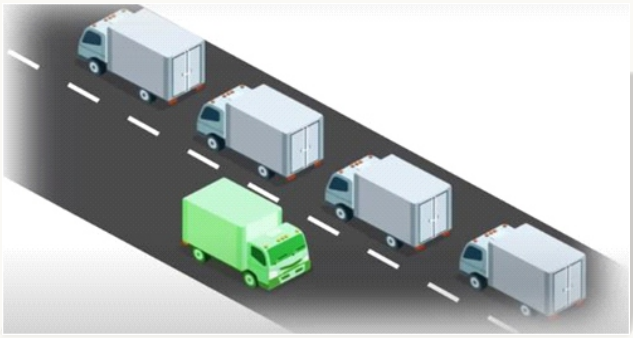
5) TWO FATHERS AND TWO SONS ARE IN A CAR, YET THERE ARE ONLY THREE PEOPLE IN THE CAR. HOW IS THIS POSSIBLE ?

Answers:

1. WHAT CAN BE SEEN ONCE IN A MINUTE,
TWICE IN A MOMENT,
AND NEVER IN A THOUSAND YEARS?
The Letter 'M'

2. A GLOVE

3) ONE TRUCK



4) IT'S A TEAPOT

5) They ARE GRANDFATHER, FATHER AND SON

M.Naga Rani
Programming Assistant

MATURI VENKATASUBBA RAO (MVSR) ENGINEERING COLLEGE

(Sponsored by Matrusri Education Society, Estd.1980)
Affiliated to Osmania University, Recognized by AICTE
EAMCET/ PGECET/ ICET Code: MVSR

Department of Computer Science and Engineering

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