

CYBERBLITZ 2019



RSET

RAJAGIRI SCHOOL OF
ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE



Activities & Achievements



Articles



Artwork

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DEPARTMENT VISION

To become a Centre of Excellence in Computer Science & Engineering, moulding professionals catering to the research and professional needs of national and international organizations.

DEPARTMENT MISSION

To inspire and nurture students, with up-to-date knowledge in Computer Science & Engineering, ethics, team spirit, leadership abilities, innovation and creativity to come out with solutions meeting the societal needs.



PROGRAM EDUCATIONAL OBJECTIVES

Graduates shall have up-to-date knowledge in Computer Science & Engineering along with interdisciplinary and broad knowledge on mathematics, science, management and allied engineering to become computer professionals, scientists and researchers.

Graduates shall excel in analysing, designing and solving engineering problems and have life-long learning skills, to develop computer applications and systems, resulting in the betterment of the society.

Graduates shall nurture team spirit, ethics, social values, skills on communication and leadership, enabling them to become leaders, entrepreneurs and social reformers.

PROGRAM OBJECTIVES

Engineering Knowledge

Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

Problem Analysis

Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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.

Design / Development of Solutions

Conduct investigations of complex problemm

Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern tools usage

Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

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.

Engineering & Society

Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Environment & Sustainability

Ethics

Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Modern tools usage

Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.

Project Management & Finance

Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments..

Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.

Individual & teamwork

Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.

life-long learning

PROGRAM SPECIFIC OBJECTIVES

▶ Computer Science Specific Skill

The ability to identify, analyze and design solutions for complex engineering problems in multidisciplinary areas by understanding the core principles and concepts of computer science and thereby engage in national grand challenges.

▶ Programming and Software development Skill

The ability to acquire programming efficiency by designing algorithms and applying standard practices in software project development to deliver quality software products meeting the demands of the industry.

▶ Professional Skill

The ability to apply the fundamentals of computer science in competitive research and to develop innovative products to meet the societal needs thereby evolving as an eminent researcher and entrepreneur.





FROM HOD'S DESK

NEED FOR INTERDISCIPLINARY RESEARCH



Dr. Sminu Izudheen

HOD of ComputerScience Department

Today, as our world is more connected, new 'big questions' surround us. Some questions that humankind is facing today are too new, and too big, to be addressed with the traditional disciplinary boundaries. Getting out of the disciplinary boundaries has become essential because the problems to be confronted spill across borders, cultural divides and fields of knowledge. Without two biologists, a physicist and a crystallographer coming together, the structure of DNA would not have been determined. Without an interdisciplinary approach, we would have never landed on the moon and the Internet would have never been invented. The whole purpose of science is to satisfy curiosity and make life better. Problems of global importance that have practical consequences, such as disease prevention, economic development, social inequality, global climate change and many more invite and even demand interdisciplinary participation. Advancement of artificial intelligence present question we have never had to ask

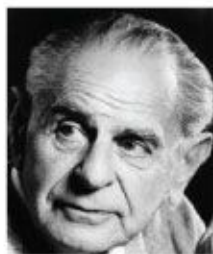
before, questions that are not just of a technical nature but also ethical, legal and sociological. Engineers have to become interdisciplinary because their job requires it. For instance, the design of an everyday product like a motor vehicle requires the integration of knowledge and skills from disparate disciplines such as mechanical, electronic and computer engineering, battery technology and energy systems, environmental and sustainability engineering, and ergonomics.

There are plenty of opportunities for researchers to get involved in interdisciplinary research. There are many funding opportunities that focus on global challenges and one must be prepared to work in partnership with researchers from other disciplines and organizations.

The future will be full of challenge and opportunity, most of which we cannot now predict. As 21 st century engineers, it is only through interdisciplinary research you will be able to respond to these changes, to innovate, seize new opportunities and improve quality of life, both at home and abroad.

"We are not students of some subject matter, but students of problems. And problems may cutright across the borders of any subject matter or displine."

- Karl Popper



EVENTS ORGANIZED BY CYBERBLITZ IN 2019

INAGURATION	Resourse Person: SN Vijayarajan Senior Cyber Security consultant at Timenet Infoco for S3, S5 & S7 Students	30/08/19
3 MTS IDEA	IDEA presentation competition for S3, S5 & S7 Students	20/09/19
HELLO WORLD 3	Conducted training sessions for the students of HSS OF JESUS KOTHAD	04/10/19
IGRATO 2.0	Dance competition for S3, S5 & S7 Students	27/09/19
Mr. & Ms. TECHIE	Coding Competition for CSE Students	11/10/19
MEET THE TALENT	Technical session handled by Ms. Pooja vinod of S7 CSE C for CSE Students	17/10/19
TECHTOON	Technical drawing competition for CSE Students	25/10/19
BLIND CODING	Coding and debugging competition for Second and First year Students	22/02/19
CYBER TRIATHLON 2.0	Quiz Competition for CS Students	18/03/19

Students Corner



major achievements by student

Online National level mock placement contest first rank 11-Mar-19
Ms.Pooja Vinod

Cognizant Maker Challenge 13-Feb-19
Mr,Glin Zachariah,Mr.George V jose,Mr.Kiran Jose,Mr.Karun Jossy

Best Paper award in National Conference on "Innovative Technologies
in Computing ,Embedded and Power Engineering" 6-17 May 2019
Ms.Jubitta John,Ms.KavyasreeM ,Ms.Keerthana S , Ms.Monica Eugene

SAKURA EXCHANGE PROGRAM
BY JAPAN SCIENCE AND TECHNOLOGY AGENCY 4-15 MARCH 2019
Mr.Joshua Joseph

Student scholarship at gracehopper celebration 6-8 Nov 2019
pooja vinod

foreign technical immersion program
at swinburne sarawak mobility program 9-45 Sep 2019
Anamika R



inter & intra college events

quiz

- Mathematics club day celebration
Ebin Thankachan
1/31/2019 quiz second prize
- Mathematics day celebration at Adisankara
Ebin Thankachan
2/6/2019 quiz first prize
- AURORA 1.0 at TOC H
Nipun Anoob
20-21 MARCH 2019 Tech quiz Participated
- AURORA 1.0 at TOC H
Roshan Anish Medama
20-21 MARCH 2019 Tech quiz Participated
- NAKSHATHRA 2019 AT Saintgits college
Sulakshana Sara Mathew
15-16 Feb 2019 Auto quiz Participated
- MATHEMATICS QUIZ COMPETITION
Abhishek Anil
2/6/2019 Maths quiz First prize
- AWARENESS CAMPAIGN
Nikitha Theresa Antony
12/02/19 quiz Third prize



arts

- Ekathra 2K19 at Sree Buddha
Ashley Suzanne Mathew
9 May 19 celesta first prize
- BRAHMA 19 at adi sankara
Ria Varghese
7-9 March 2019 Theme show second prize
- Nakhatra 2k19 at Saintgits
Sherin baby
15-16 feb2019 Milano Fashion show participated

SPORTS

- Annual sports and Games
Ganga Paul
11-30 March 2019 4x 100 m Relay first prize
- Annual sports and Games
Muhsin Ahamed Fazal
11-30 March 2019 Football Second prize
- Annual sports and Games
Nithi Thomas
11-30 March 2019 Throw ball first prize



- Annual sports and Games
Nikhila joshy
11-30 March 2019 Shotput Second prize
- Annual sports and Games
Nikhila joshy
11-30 March 2019 Throw ball first prize
- KTU D-Zone Womans Tornment
Anisha T Anilkumar
19/11/19 Badminton First prize
- KTU D-Zone Womans Tornment
Gayathri Jayadharan
20/10/19 Badminton First prize
- KTU D-Zone Mens Tornment
Don Antony
26/11/19 Handball First prize
- KTU D-Zone Mens Tornment
Frederic Thomson
10/11/19 Football First prize
- KTU D-Zone Mens Tornment
Frederic Thomson
20/10/19 chess First prize
- KTU D-Zone Mens Tornment
Frederic Thomson
22-24 NOV 2019 Football First prize

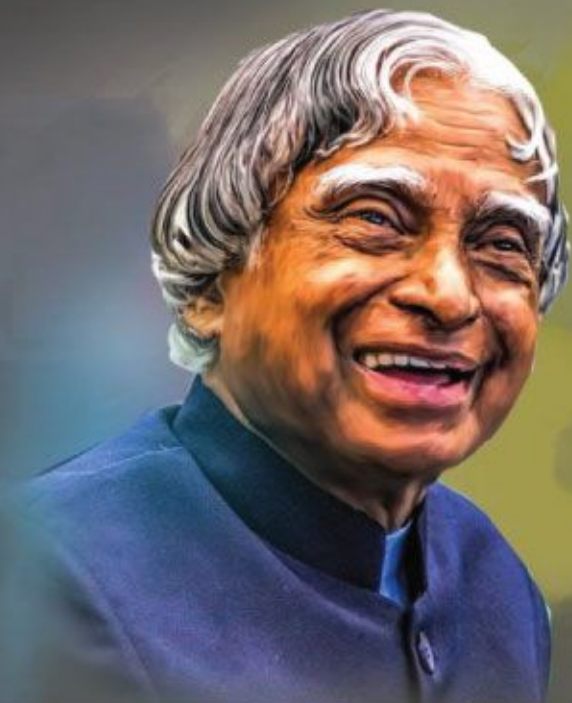
music

- Incident at NIT
Benjamin John Varghese,Ashiley Suzanne Mathew
9 May 19 UNPLUGGED first prize
- Incident at NIT
Benjamin John Varghese,Ashiley Suzanne Mathew
9 May 19 Acapella first prize
- Sanskriti
Ashlie Suzanne Mathew
21-23 march 2019 Western solo participated
- Hestia 19
Ashlie Suzanne Mathew,Joanne Mary Jons
28-31 MARCH 2019 UNPLUGGED second prize
- Ragam at NIT
Ashlie Suzanne Mathew
22-24 march 2019 Western solo second prize
- Ragam at NIT
Benjamin John Varghese,Ashiley Suzanne Mathew
22-24 2019 Acoustics second prize





A.P.J.



EMPOWERING MINDS THROUGH EDUCATION

India is one of the emerging economies of the 21st century and a land of opportunities. The strength of the nation and the future lies in the hands of the youth force.

"If we release the locked potential in every child, there is nothing that India cannot achieve."

-A.P.J. Abdul Kalam

When I was in third grade, I got the opportunity to meet the former president A.P.J. Abdul Kalam. He made a special visit to my school to interact

with students. In the auditorium he made us recite the Greek hymn "When there is righteousness in the heart, there is beauty in the character; when there is beauty in the character, there is harmony in the home; when there is harmony in the home, there is order in the nation and when there is peace in the nation, there is peace in the world."

According to Dr. Abdul Kalam, the most important persons in a child's development are his parents and primary school teacher. He said, "Each of you will have wings of fire to fly. This will lead you to knowledge." He concluded his speech with "Knowledge makes you great." I was so thrilled when each of us received a copy of the book "Wings of Fire" by Dr. A.P.J. Abdul Kalam.

Students need to define and create

their own paths if they want to become unique persons. To become a unique person, four steps are needed. First one is have a great aim or clear objective in life, acquire knowledge continuously, work hard towards objectives and persevere towards your goal.

What is the purpose of education to the society?

Education is an endless journey through knowledge and enlightenment. An educated society makes sure that the younger generations are also literate. Literate parents are most likely to send their wards to schools. The only hope for the development of the nation lies in the education of its people. Law and order is maintained in an educated society. Social and financial needs for its members can be provided by an educated society.

A literate group of people have higher self-esteem and can access good facilities and living standards. There is more awareness about health and hygiene in a literate society.

Educated individuals are more likely to take unbiased and wise decisions in choosing their political representatives thus leading to the nation's growth. Protecting the environment and the importance of conservation can be better understood by literate society.

An educated society does not discrim-

inate between genders and equal opportunity is given to all. Social and economic development can happen only if there is gender neutrality. "You educate a man; you educate a man. You educate a woman; you educate a generation.

How should the 21st century learning be like?

Students should contribute to the nation's economic growth. The education system should be based on five components: research and enquiry, creativity and innovation, capacity to use high-end technology, entrepreneurship and moral leadership. Students should be imparted with skills so that they find their way through the sea of knowledge. Through technology, we can become life long learners, which is a skill for sustained economic development. We must learn to work in groups as this helps in managing knowledge effectively. It's important that students use the latest technologies to aid their learning process. Students should be curious and self motivated to learn new technologies. From the beginning itself the aptitude for entrepreneurship should be cultivated in the child. Risks and Challenges should be taken as it makes a person stronger. The ability to have a compelling and powerful dream or vision for the betterment of the society as well to do the right thing and influence others to do the same is moral leadership.

*An investment in education pays the

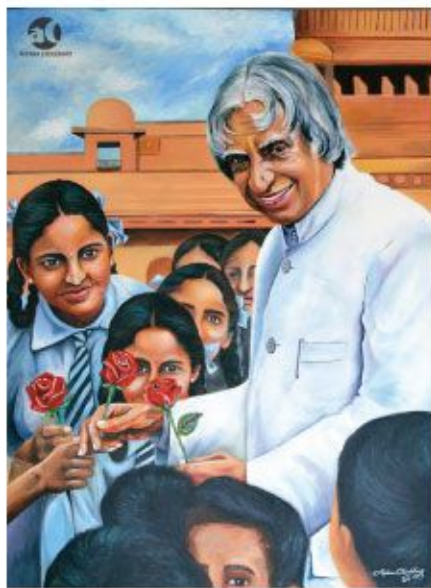
best." - Benjamin Franklin

But is this education making students stressed and worried about failure in life?

In the Indian educational system, students go through many exams that help students to analyse their strengths and weaknesses. There is heavy competition that unleashes a student's full potential. Most students memorize the facts rather than thoroughly understanding the concept. There is no freedom to think creatively and students rely on textbooks. Textbooks do not mention the relevance of the topic in practical life. There is a current obsession for marks among students.

Taking example of a famous personality, Albert Einstein who used to study in a German school. He liked history but he found no point in learning dates when they were always available in the books. His teacher shouted at him and sent him home, as he was a disgrace to the school. Einstein didn't want to learn things by heart rather he wanted to study subjects that interest him. He was brilliant at mathematics and his maths teacher gave him a recommendation letter for higher studies in maths. His teacher explained that he was wasting time here and that Einstein knew more than the teacher. "Every young person wants to be unique. But the world all around is doing its best, day and night, to make each of them just like everybody else" A.P.J. Abdul Kalam

Our attitude towards marks and grades needs to change. Logical thinking and creativity needs to be encouraged by teachers. "Tell me and I forget, teach me and I remember, involve me and I learn." - Benjamin Franklin Practical education is more important than theoretical since mugging up is not required, the knowledge retains in our mind, better understanding develops, improves skills, involves application and deals with real life situations.



We might not always succeed in life. Some times we face failures in life. This does not mean that we give up. Its important to understand that failure can teach us a lot more than success. Most people would have experienced failure in their life some time or the other. The fear of failing prevents us from moving ahead in life. Hence we are unable to make progress in life. Valuable lessons can be learnt from these failures and we would have a better future.

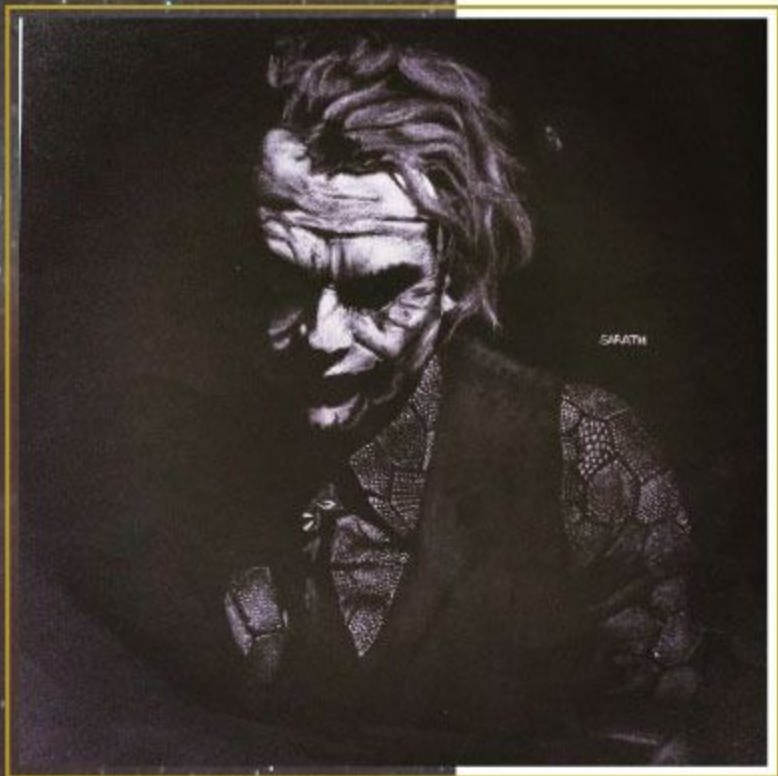
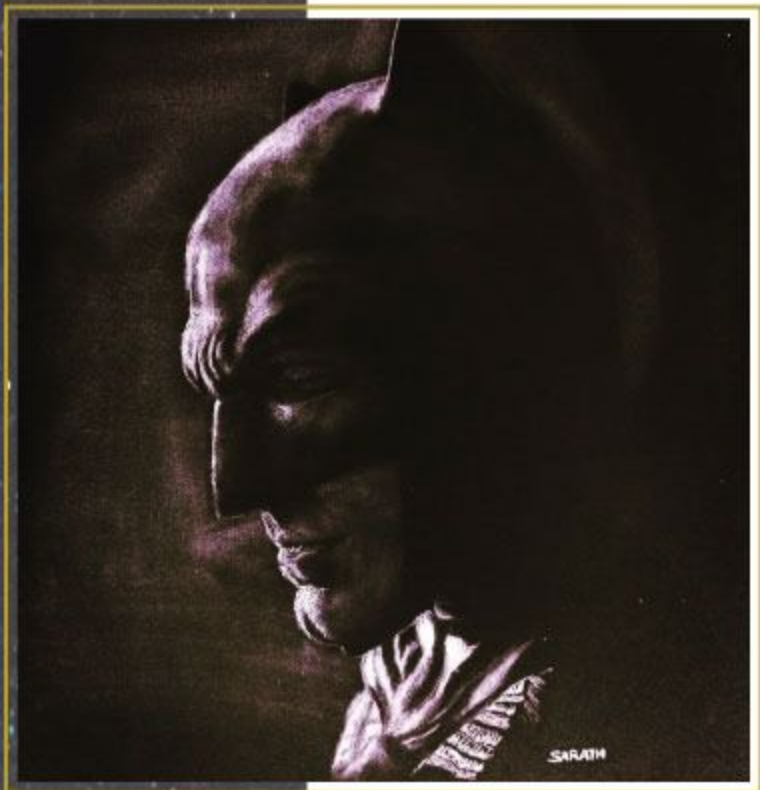


Taking example of Ferruccio Lamborghini who was the owner of a tractor manufacturing company. He was fond of luxury cars such as Ferrari but he was frustrated about the inferior quality and mechanical problems. So he decided to complain to Enzo Ferrari the owner of Ferrari. Enzo just said "The problem is not with the car but with the driver!" and advised him to continue his tractor business. Taking this as a challenge, through years of toil and perseverance he succeeded in manufacturing Lamborghini, one of the most extravagant cars in the world. Hard work and perseverance can help us reach our goal. We need to face failure and breed success.

Jobs that existed in the past might not exist in the future so it's important to develop basic skills in the student. The education system must challenge creative minds in order to make India socially and technologically developed country.



**Article by ,
Amala Menon
S7 CS Alpha
Student of RSET**



From
Sarathi's
Sketch book
∞





Sarath Pradeep
S7 CSE Gamma
Student
REST

Faculty Corner



FACULTY PUBLICATIONS

A Review on different Image Enhancement Methods
International Conference on Advanced Computing and Communication Systems,
March 15-16,2019
IEEE Conference
- Alka Menon Kuttikat,Amitha Mathew



Decentralized Isolated Educational Content Aggregation System
International Journal Of Information Systems and computer Sciences,
Volume 8, Issue 2 ,pages 77-80, Publisher Warse, 2019
UGC approved Journal
- Roshan Shibu, Praveen S Raj, Yakoob Yousaf Syrus, Dr. Varghese S Chooralil



**Efficient Route recommendation system based on Keyword
using candidateroute generation and travel route exploration**
International journal of advanced trends in computer science and engineering,
volume 8, issue 3, pages 419-425,
the world academy of research in science and engineering, 2019
Scopus Journal
- J Jaison, Dr. Varghese S Chooralil, Joseph John



Security and privacy via optimized block chain
International Journal of advanced trends in computer science and engineering,
volume 8, issue 3, pages 415-418, WARSE, 2019
Scopus Journal
- Monica Thomas, Dr. Varghese S Chooralil



False Color Based Visual Privacy Protection
Journal of Emerging Technologies and Innovative Research,
Vol.6, No. 5, pp: 68-76, May 2019
UGC approved Journal
- Sruthi Viswanath and Jincy J. Fernandez

Dual Sentimental Analysis On Product Reviews

International Journal of Engineering Science Invention (IJESI)

ISSN (Online): 2319 - 6734, ISSN (Print): 2319 - 6726

www.ijesi.org || Volume 7 Issue 10 Ver II || Oct 2018 || PP 48-53

UGC approved Journal

- Shilpa A.B, Jisha G



Practical analysis of representative models in classifiers: A review

AIDE 2019 IEEE Conference

- Angela Mathew, Sangeetha Jamal



Effect of Community Structures in Protein-Protein Interaction Network in Cancer Protein Identification

Current Science SCI Journal

- Sminu Izudheen, Eljose E Sajan, Ivan George, Jeevan John, Chris Shaju Attipetty



Fuzzy mapping model for document classification

October 2019, TENCON 2019 IEEE conference

- Angela Mathew, Sangeetha Jamal



A review on Image Synthesis

6th International Conference on

Advanced Computing and Communication Systems(ICACCS19)

Scopus(Conference) conference

- Fathima Shirin, Meharban MS



A methodology for Short-term Electric Power Load Forecasting

International Conference on Advances in

Computing & Communications (ICACC 2019), Nov 2019

IEEE conference

- Anu Mariya Joykutti, Smithu Izudheen

GENERATIVE ADVERSARIAL NETWORKS: (GANs)



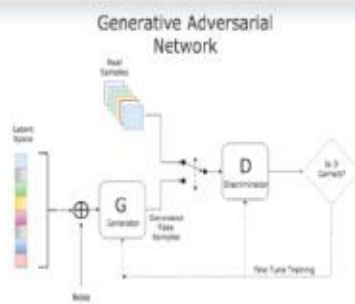
Ms. Meharban MS
Assistant Professor
RSET

Deep learning has also shown great ability in content generation. In 2014 Goodfellow proposed a generative model, called Generative Adversarial Networks (GANs). GANs contain two networks, a generator and a discriminator. The discriminator tries to distinguish fake images from real ones; the generator produces fake images but it tries to fool the discriminator. Both networks are jointly trained in a competitive way. The resulting generator is able to synthesize plausible images. GAN variants have now achieved impressive results in a variety of image synthesis and editing applications.

Realistic image synthesis is the process of creating images that are, in some way, accurate representations of a real scene. This can reduce design time and improve the designs products, architecture, and environments. If the images are accurate enough, they can be used to guarantee the availability of certain visual information tries to distinguish real samples from generated ones.

The detailed architecture of GAN as shown in the figure. So far GANs have been primarily applied to modelling natural images. They are now producing excellent results in image generation tasks, generating images that are significantly sharper than

those trained using other leading generative methods based on maximum likelihood train in objectives.



Important Applications of GAN

1. Generating image from sketch

In this work they present a Generative Adversarial Network framework that transforms input sketches into images. They proposed sketchy GAN, a GAN-based, end-to-end trainable sketch to image synthesis approach that can generate objects from 50 classes. The input is a sketch illustrating an object and the output is a realistic image containing that object in a similar pose.

2. MRI to CT synthesis

GANs can be used for synthesis of CT data from MRI images. This is quite interesting since MRIs don't have a dose problem.



3. Text to image (StackGAN)

Text to image is one of the earlier application of domain transfer GAN. We input a sentence and generate multiple images fitting the description.

4. Super resolution

Create super-resolution images from the lower resolution. This is one area where GAN shows very impressive result with immediate commercial possibility.

5. Image inpainting

Repair images have been an important subject decades ago. GAN is used to repair images and fill the missing part with created

6. Create Anime characters

Game development and animation production are expensive and hire many production artists for relatively routine tasks. GAN can auto-generate and colorize Anime characters.

7. Image colorization

Over the last decade, the process of automatic image colorization has been of significant interest for several application areas including restoration of aged or degraded images. This problem is highly ill-posed due to the large degrees of freedom during the assignment of colour information. Many of the recent developments in automatic colorization involve images that contain a common theme or require highly processed data such as semantic maps as input.

DESIGN OF EXPERIMENTS FOR TEACHERS



Mr. K. S. Mathew
Professor
RSET

"Design of Experiments (DoE)" is a method or technique used by organizations to improve the quality of their existing or new products

and services.

Introduced by Dr. Genichi Taguchi in 1924.

This technique determines which combinations of design variables produce optimum result/performance/quality. The process involves following steps: (i) design initial design variables/technical specifications of the product (ii) make the sample/prototype product (iii) measure the output quality/result/performance (iv) adjust the design variables based on performance measurement (v) repeat steps (ii) to (iv) till the performance is good & as per the expectations. Does it seem complicated? Don't worry. Here are few simple examples.

Quality of the coffee your mother makes or your wife makes - which is better? I know, it is a difficult question. But, I am sure, everyone will agree that the coffee made by your

wife and mother taste different. Why is it different? It is different because of the proportion of ingredients used for making coffee is different. Your mother had done lot of experiments by changing the proportion of ingredients based on the feedback from her husband about the taste of coffee to finally decide the "secret" mix of ingredients for her "brand" of coffee. This is what is called Design of Experiments. I am sure, all of you have tasted coffee from Indian Coffee House (ICH). The quality of ICH coffee is same in every branch inside or outside Kerala, regardless of who the cook is. They had done DOE to determine the proportion of ingredients for their brand of coffee.



Pizza Hut uses "Design of Experiments" whenever they introduce a new flavor Pizza. You can see offers of personal Pan Pizza's of new flavor free with every medium or large size Pizza's for a day or two or for 100 customers. Then, they ask for your feedback about the new flavor pizza. Based on the feedback from the customers they change the ingredients and try it for another 100 customers and get their feedback. This experiment will be continued till they are satisfied with the feedback from the customers and then finalize the ingredients for the new flavor pizza.

Another example is the strength of concrete in construction industry. Builders make concrete blocks with specific mix and these blocks will be tested for strength. The experiment will be repeated by varying the mix proportion, till they are satisfied with the strength of concrete intended for the specific purpose.

Teachers can also use DoE to improve the quality/effectiveness of their lectures and courses. The quality of our lectures & courses depends on various ingredients like organization/planning, content, delivery, assessment methods etc. etc. We should try to get regular feedback (formal & informal) from students, especially after initial few lectures and then try to change the proportion of these ingredients based on the feedback. Repeat this 'experiment', till you get a good feedback



from majority of your students. This will help us in improving our lectures & courses, which is nothing but 'Design of Experiments'.

To summarize, Design of Experiments is a simple tool/technique used by organizations to improve the quality of their products and services. It involves, designing experiments with varying combinations of design variables and then measuring the output performance. This helps in determining the right combination of design variables for the optimum output quality or performance. Few example applications are: Quality of coffee, Quality of pizza, Strength of concrete, etc.





A Canvas painting by,

Mr. K. S. Mathew
Proffessor
RSET







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