INFORMATION SCIENCE AND ENGINEERING

About the Department

The ever-expanding role of IT in Education, Entertainment, Business Enterprises, Industry, Science, and Public and Private Sectors have influenced personal lives to a great extent. This has compelled the need to remain on the cutting edge of the technology to provide quick and easy access to information. ISE@GAT responds to this by producing graduates with much needed technical knowledge and skills capable of developing professional products and services.

Vision of the Department
To excel in teaching and research in the field of Information Science and Engineering to meet emerging challenges of society.

Mission of the Department
❖ To inculcate strong academic foundation in the Information Technology domain for successful career and lifelong learning.
❖ To strengthen research and development activities through interaction with industry.
❖ To instill professional ethics and social values with concern for environment.

Program Educational Objectives (PEOs)
PEO1. Identify and develop IT solutions to solve societal problems.
PEO2. Accelerate career path or engage in entrepreneurship with leadership qualities, professional ethics, soft skills and teamwork.
PEO3. Engage in improving professional knowledge through continuing education and research in engineering or management.

Program Specific Outcomes (PSOs)
PSO1. Analyze, develop, debug and test application software to meet specified requirements.
PSO2. Understand and analyze the system architecture, organization of computer communication systems.
PSO3. Understand the features of system software in information systems.
PSO4. Design and develop applications for information security.

Principal's Desk

Dr. Rana Pratap Reddy
Principal

It's indeed a matter of great satisfaction and pleasure to inscribe few lines as Preface of the *Inside Out*, the newsletter of Dept. of Information Science and technology at Global Academy of Technology. *Inside Out* truly portrays all the flavors of the department encompassing academic, co and extra-curricular outcomes and achievements of both students and faculty members.

ISE Dept @ GAT is galloping with zeal to uplift the department. Students get ample opportunities and platforms to exhibit their talent, sharpen their skills and acquire new ones. The research indices of the team also calls for appreciation. The high placement record and the earned university ranks in recent times are testimony to the commitment, dedicated inputs and strategic outcomes by the students and the faculty members of the department.

I hope *Inside Out* continues to capture happenings, highlight achievements and brings out creativity in the team members behind the good show. Wishing the team and the newsletter all the success in future endeavors. Keep rolling the good work!

HOD's Desk

Dr. Ganga Holi
HOD

To excel in teaching and research in the field of Information Technology to meet emerging challenges of society is the vision of the department through dedicated faculty aligned towards overall development of students. Department organizes various activities to enhance the students' knowledge and motivate them to participate in various competitions.

To support overall development of the student, sports, cultural and fun activities are organized to bring out the creativity of students with full spirit thus providing experiential learning environment. I am pleased to share that our students are consistently excelling in their placement process in highly reputed companies like Infosys, IBM, Mind Tree, NTT Data etc.

CO-CURRICULAR ACTIVITIES

A three day workshop on "Basics of Cyber Security" was organized by Department of ISE from 16th to 18th October 2019 in association with BITES. The aim of the workshop was to give introduction to cyber security and attacks. Dr. Ram P Rustagi, Professor, Dept. of CSE, KSIT and Prof. Alka Agarwal were the resource persons for the workshop. Pentesting and Vulnerability testing were exercised as a part of workshop. Introduction to Web security, HTTPS and Man in the Middle Attack were introduced in the workshop. Finally some of the SQL Injection Attacks was addressed by taking 10 most seen web applications.

A guest lecture on " Animation and its Applications in Industry" was organized by the Department of ISE on 9th August 2019. The objective of this guest lecture was to provide student exposure to the area of Animation Technologies and Softwares used in animation Industry. The schedule included expert lecture and interactive session along with animation movie clips on Chhota Bheem etc. The main purpose of this guest lecture is to provide information about the new demanding area of software developments in Movies, Advertising, Print Media, (Magazines, News-papers etc.), TV production and Gaming. R.K. Chand, Co-Founder and Director of Business Development for Mumbai based Golden Robot Animation was the resource person

A three day Webinar series on "Cyber Security and Career Planning Strategy" was organized by Department of ISE from 20th to 22nd July 2020. The motive behind this webinar was to impart knowledge on Cyber Security Attacks and make familiar with Wireshark tool. Since its necessary for the students to make themselves Job ready, the webinar included even Career planning and Strategies. Over 100 students participated in this webinar from various branches and various colleges across Bangalore. The sessions was very interactive and students gained good knowledge about various attacks and threats that are involved in the Cyber world. They also learnt Wireshark tool which can used for packet analysis and capture.

Education is the most POWERFUL WEAPON which you can use to change the WORLD.
—Nelson Mandela

"Talk To Yourself Once In A Day... Otherwise You May Miss Meeting An Excellent Person in this World"

PROJECTS @ GLUG, GAT

Healthcare Planner App

The project aims at collecting details about our conditions and medications as prescribed by the doctor. This generally is a one-off sheet, and many of us tend to lose it. These general prescriptions are never stored by any medical organization. Hence, it is difficult to retrieve it, if we lose it. Many a times, these prescriptions are handy for future visits. It technically stores all medical records, prescriptions on Cloud. With the click of a button, we can retrieve our records, and prescriptions. The users of the App can enter their details, medical conditions, etc., and can view them as necessary. Additionally, medication and appointments reminder is implemented. This helps us to take any medications, prescribed drugs, etc., on time.

Project Done by:
Samved S Mani, 6th sem, ISE

Vehicle Authorization System

This project actively aims to automate the authorization of different vehicles arriving and departing from a specified location where this system is installed. This project is relevant to many different organizations like Offices, banks, Government Buildings, etc. This project also is of great benefit to apartment complexes.

Project Done by: Faiz Ahmed – ISE , Shanthanu Nagesh – ISE, Amith R – EEE-1st sem

Automated Attendance System

The main intent of this project was to reduce the burden of the lecturers to take attendance every hour. This usually used to happen in the last few hours of the class, which most importantly could be used to clarify doubts of the students. Adding to this, we also aimed to reduce the attendance proxy or marking false attendance by other students, despite the fact that the latter was absent in the classroom.
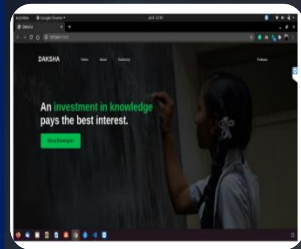
Project Done by: Abhishek V Tatachar, Vishwas K V -4th sem

Guided By,
Prof. Dheeraj D
Assistant Professor

Effect of Artificial Intelligence on the world around us

You might have been imagining how Netflix gives you the right suggestion on which movie or show to watch, as though the app has been just been personalized according to your interests. Netflix makes use of one of the high accuracy predictive technology and predicts the shows that you might be interested in watching based on several parameters such as your previous viewing history, what people with similar taste consider watching or what time of the day you're watching the show. These are in fact mentioned in their article "How Netflix Recommendations System works". It's not just Netflix for that reason; most of the e-commerce website gives you personalized suggestions on what to buy, or what people who bought the same item also bought. All this is because of the advancement in Artificial Intelligence, abbreviated as AI.

This blog is about Artificial Intelligence. AI has interested me for the one major reason, its capability to evolve the world around us and the effect it already has on a global scale. AI has a vast effect on today's world. I will be discussing about five important factors where AI has affected the world.

Impact on jobs:

Frankly an AI machine, which the man himself created, is proving to be more intelligent than him. Most of those jobs which needed a lot of human interactions are now being done Artificial Intelligent systems. These systems are proving to be more useful as the efficiency they provide is high and they are more cost effective. What's positive, there are two things, one being the cost cutting, many industries that had to pay a huge amount of salary are now saving money, and two the need of software engineers in the industry is going to increase, this is because even though these systems are smart there has to be someone designing these systems.

AI in healthcare:

AI plays a very important role in healthcare. How? One of the key purpose for which AI is used in healthcare is diagnosis. The accuracy that AI can provide in this field will surely reduce the average percentage of misdiagnosis by reducing the chances of error. AI can be further used in Radiology which involves imaging to diagnose and treat diseases with in the human or animal body. AI can be used detect fractures and injuries using digital image processing. Statistics and data analysis can be used to determine what quantity of a drug has been sold, how frequently a practitioner has suggested the drug and to what level has a drug been useful.

AI in finance:

In the last few years, AI has been a game changer in the field of finance. Investors and bankers are using AI to do investments. AI algorithms are helpful as predictions they make are quite accurate and help the investor make more profits. In a similar way AI is also helping the companies to make better strategies to reach out to the right investors and customers. Companies are reducing on costs by making use of AI for resource management, business analytics and make advancements and plans based on their past data, which in fact is one import factor for any company irrespective of the field. As they say "Learn from your past mistakes".

AI in cyber security:

Cyber Security is one important factor in today's world. Despite the fact of there has been a lot of cybercrimes that are happening we can also see that there has been several malware, ransom ware and virus that could corrupt data on your computer. AI can be used to detect potential threats to the system and block them as a safety measure. Another important concept is the use of bio metrics. Usually passwords are used to secure data. But considering today's technology and computing capabilities, it is easily possible to crack the passwords by few permutation and combination methods. On the other side use of bio metrics, which makes use of digital image processing proves to be accurate and useful.

AI in crime reduction:

Artificial intelligence can be made used to detect and prevent crime. The practical implementation would be or rather is a crime detection system and have a quick response team that could prevent a happening crime. Several facts have to be considered while building such a system in order to capture every small information. AI can also be used in crime investigation, locating of important evidences in crime scenes would really prove helpful during the investigation process. Again considering the amount of details and precision that the system has to look into because every small details is crucial in such a case.

Concluding, has AI affected us? It's a definite yes, AI has affected most aspects of human life. This is not the end of it, artificial intelligence has more to offer us, there is more to come. In any case there would be one question that would always wander around; will there be a time when artificial intelligence would have a dominating status on human? This one question will always encourage us to explore more about Artificial Intelligence without limiting ourselves to a single aspect.

Abhishek V Tatachar,4th sem, ISE

TAKSHASHILA UNIVERSITY

Takshashila University is the world's first University established in 700 BC. More than 10,500 students swarming in from different parts of the world to garner knowledge and education. The campus accommodated students who came from as far as Babylonia, Greece, Arabia and China and offered over sixty different courses in various fields such as science, mathematics, medicine, politics, warfare, astrology, astronomy, music, religion and philosophy. Entrance exam to Takshashila was very difficult and only 3 out of 10 students were selected. Panini, the famous Sanskrit grammarian, kautilya(chanakya), charaka, the famous physician of ancient India and Chandragupta Maurya were the products of this University. The famous treatise Arthashathra by Chankya have been composed in Takshshila itself. The University consisted of three buildings: RatnaSagar, Ratnodavi and Ratnayanjak.

The archaeological site of Takshashila was designated a UNESCO World Heritage Site in 1980.

Sources: Internet
Shruthi K R, Asst. Professor, Dept. of ISE

AWARDS AND RECOGNITIONS

ALMUNI SPEAK

BITES - XCELERATOR STUDENT PROJECT AWARDS

CERTIFICATION OF PARTICIPATION

- Sameer G Mathad
- B Akash
- Pruthvi L
- Sanjana C S
- Pooja S
- T Akhila
- Tejaswini K R
- Tejaswini J S
- Ananya
- Shivani K S
- Revathi B S

More than 80 Certifications done by students of the 4th sem and 6th sem in various online platforms like Coursera, Udemy, Datacamp and many more

Independence Day Drama

Website Development for Sevayana Trust

- Abhishek V Tatachar
- Shivanee Kondur
- Vishwas K V
- Saadhvi Hosmane
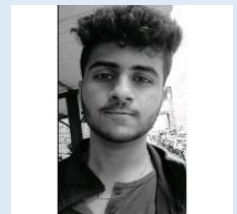
While there is a lot the real world teaches you, only a good institution can prepare you for it. ISE at GAT has been the mentor for me. I would like to thank the faculty, who was most helpful and guided me at every step in sharpening my skills, also providing constant support and encouragement.
- Sandesh S
(Batch 2015-2019) @KPMG.

Chandan K S – 4th sem in & as
Dr. B R Ambedkar

FACULTY PUBLICATIONS

Sl.No	Name of the Faculty	Title of the paper	Name of the Journal
1.	Prof. Ganga Holi	Convolution Neural Networks approach for Medical ImageAuthentication	Journal of Information Systems and Telecommunication
2.	Prof. Jyoti Neeli	A novel secure routing scheme using probabilistic modelling for better resistivity against lethal attacks	International Journal of Electrical and computer Engineering
3.	Prof. Sridhar R	Energy efficient chaotic whale optimization technique for data gathering in wireless sensor network	International Journal of Electrical and computer Engineering
4.	Prof. Ganga Holi	RNN Based Machine Translation and Transliteration for Twitter Data	International Journal of Speech Technology
5.	Prof. Ganga Holi	An optimal and secure watermarking system using SWT-SVD and PSO	Indonesian Journal of Electrical Engineering and Computer Science
6.	Prof. Jyoti Neeli	Trust-based Secure Routing against Lethal Behavior of Nodes In wireless Adhoc Network	International Journal of Electrical and computer Engineering
7.	Prof. Manasa C	Statistical Analysis of Voice Based Emotion Recognition using Similarity Measures	First International Conference on Advanced Technologies in Intelligent Control, Environment, Computing and Communication Engineering (ICATIECE- 2019), DSATM, Bangalore
8.	Prof. Sharmila C	IOT- Based Cross- Functional Agribot	Springer-Part of the algorithms for Intelligent Systems book series
9.	Prof. Dheeraj D	Performance analysis of classifiers on offline Handwritten signature	IEEE Bangalore Section
10.	Prof. Deepthi V S	Behaviour Analysis and Detection of Blackhole Attacker Node under Reactive Routing Protocol in MANETs	IEEE Bangalore Section
11.	Prof. Ganga Holi	Assessment of Joint Space in Knee Osteoarthritis using Particle Swarm Optimization Technique.	International Journal of Innovative Technology and Exploring Engineering.
12.	Prof. Ganga Holi	Medical Image Authentication by SWT and SVD	International Journal of Recent Technology and Engineering.
13.	Prof. Sridhar R	Classification and Identification of Leaf Diseases using Deep Learning	International Journal of innovative technology and exploring Engineering
14.	Prof. Sharmila C	Sequential Analysis of Image to Text	International Journal of Research in Engineering, Science and Management
15.	Prof. Jyoti Neeli	Spam: Detection of spam for Reviews in online	Journal of Emerging Technologies and Innovative Research
16.	Prof. Dheeraj D	Study of Machine Learning vs Deep Learning Algorithms for Detection of Tumor in Human Brain	International Journal of Computer Sciences and Engineering
17.	Prof. Manjula N	DC Store: A deduplication- Based Cloud-of-clouds Storage Services	Journal of Emerging Technologies and Innovative Research
18.	Prof. Deepthi V S	Detection of facial micro expressions and textual tracking for paralyzed using computer version	International Journal of Computer Sciences and Engineering
19.	Prof. Manjula N	E-Commerce Cart Abandonment: Exploring Consumer Behavior's and Reasons for Cart Abandonment	International Journal of Engineering Research & Technology
20.	Prof. Manjula N	Signature Localization and Signature Classification	International Journal for Research in Applied Science & Engineering Technology
21.	Prof. Shruthi K R	An artificial intelligence based routing for underwater wireless sensor networks	4th IEEE international conference on Electrical, Electronics, Communication, Computer technologies and Optimization Techniques. GSSS institute of technology, Mysuru

Books are the means by which we build bridges between cultures
*Dr. Sarvepalli Radha Krishnan*

STUDENT PUBLICATIONS

SL. No	USN	NAME	TITLE	Name of the Journal	Volume/Issue/ISSN	Month/Year
1.	1GA15IS044	Suraj S	IoT-Based Cross-Functional Agribot	Springer –part of the Algorithms for Intelligent Systems book series	DOI:10.1007/978-981-15-0633-8_159 ISBN: 978-981-15-0632-1	Feb 2020

SL. No	USN	NAME	TITLE	Name of the Journal	Volume/Issue/ISSN	Month/Year
1.	1GA16IS023 1GA16IS039 1GA16IS060	Keerthana Raksha K R Thanuja V,	Classification and Identification of Leaf Diseases using Deep Learning	International Journal of innovative technology and exploring engineering	paper accepted	
2.	1GA16IS057 1GA16IS032 1GA16IS058 1GA16IS059	T. Akhila S. Pooja J. S. Tejaswini K. R. Tejaswini	Sequential Analysis of Image to Text	International Journal of Research in Engineering, Science and Management	Volume-3 Issue-5 ISSN (Online): 2581-5792	May 2020
3.	1GA16IS043 1GA16IS024 1GA16IS047	Raviteja N Lavanya M, Sangeetha S	An Overview on Object Detection and Recognition	International Journal of Computer Sciences and Engineering	Vol.-8, Issue-2, E-ISSN: 2347-2693	Feb 2020
4.	1GA17IS015 1GA17IS042 1GA17IS064	Bhumika J Rashmi R. Kotiyan Sonal T.H.	A Survey on Early Detection and Prediction of Heart Diseases using Machine Learning and Data Mining Techniques	International Journal of Computer Sciences and Engineering	Volume-8 , Issue-2 , Page no. 31-34 ISSN: 2347-2693	Feb 2020
5.	1GA17IS003 1GA17IS022 1GA17IS045	Ambara G Kartikey Rai SahilChowdary	Implementation of emotion based music recommendation system using SVM algorithm	International Research Journal of engineering and Technology	Vol 7, Issue 2, e-issn: 2395-0056	Feb 2020
6.	1GA16IS062 1GA14IS019	Yashaswini V A Harshitha.M.K	Spam: Detection of spam for Reviews in online	Journal of Emerging Technologies and Innovative Research	Vol 7, Issue 2 ISSN: 2349-5162	Feb 2020
7.	1GA16IS063 1GA16IS049 1GA16IS055 1GA16IS036	Pavithra Sanjana Girish Spoorthy M Angadi Priyanka	DC Store: A deduplication-Based Cloud-of-clouds Storage Services	Journal of Emerging Technologies and Innovative Research	Vol 6, Issue 6, ISSN-2349-5162	Jan 2020
8.	1GA15IS002 1GA16IS002 1GA16IS029 1GA16IS028	Adithya Varambally Akshaya S Mukesh Madavi Mohammed Mughees	Critical analysis of machine learning vs deep learning algorithms for small and large datasets	Journal of Emerging Technologies and Innovative Research	Vol 6, Issue 6 ISSN: 2349-5162	Dec 2019
9.	1GA16IS011 1GA16IS025 1GA16IS030	Ashwin Kumar K Likith J Nagendra Prasad H M	Deep learning approach to detect objects using drone computing	International Journal of Computer Sciences and Engineering	Vol 7, issue-12 e-issn:2347-2693	Dec 2019
10.	1GA16IS046 1GA16IS038 1GA16IS048 1GA16IS012	Sameer G Mathad Pruthvi L R Sanjana C S B Akash	Detection of facial micro expressions and textual tracking for paralyzed using computer version	International Journal of Computer Sciences and Engineering	Vol 7, issue-12 e-issn:2347-2693	Dec 2019
11.	1GA16IS010 1GA16IS027 1GA16IS016 1GA16IS013	Aradhana A Poojary Megha S Bhat C S Aishwarya B M Nandini Mahesh	Soil, Water and Air Quality Monitoring System Using IOT	International Research Journal of engineering and Technology	Vol 6, Issue 12, e-issn: 2395-0056	Dec 2019
12.	1GA15IS027 1GA15IS025	Nikitha C Navyashree S	Signature Localization and Signature Classification	International Journal for Research in Applied Science & Engineering Technology	Vol. 7, Issue IX ISSN: 2321-9653	Sep 2019

STUDENT PUBLICATIONS

Sl.No	USN	Name of the Student	Title of the paper	Name of the Conference	Year
1.	1GA16IS043 1GA16IS024 1GA16IS047	Raviteja N Lavanya M, Sangeetha S	The Virtual Eye: Object detection, Recognition, and Emotion Detection	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
2.	1GA16IS004 1GA14IS062 1GA15IS038	Ananya Revathi B S Shivani K S	DCCD - Detection & Classification of Cyber-attacks using Deep neural network	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
3.	1GA16IS057 1GA16IS032 1GA16IS058 1GA16IS059	T. Akhila S. Pooja J. S. Tejaswini K. R. Tejaswini	Extraction and Reading of Line Word Character Segments Directly from Printed Text Document	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
4.	1GA15IS002 1GA16IS002 1GA16IS029 1GA16IS028	Adithya Varambally Akshaya S Mukesh Madavi Mohammed Mughees	Critical Analysis of Machine Learning vs Deep Learning Algorithms or Small And Large Datasets	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
5.	1GA17IS015 1GA17IS042 1GA17IS064	Aradhana A Poojary Megha S Bhat C S Aishwarya B M Nandini Mahesh	An IoT Based System to Monitor Soil, Water and Air Quality for Better Living	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
6.	1GA17IS003 1GA17IS022 1GA17IS045	Ambara G Kartikey Rai Sahil Chowdary	Implementation of Music Recommendation System using CNN	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
7.	1GA16IS063 1GA16IS049 1GA16IS055 1GA16IS036	Pavithra Sanjana Girish Spoorthy M Angadi Priyanka	DCSTORE-A Deduplication-Based Regional Cloud Storage Services	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
8.	1GA15IS050 1GA16IS037 1GA16IS050	Veda R Babu Priyanka M Saurabh Kumar Basak	Categorization of Species using Machine Learning	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
9.	1GA16IS046 1GA16IS038 1GA16IS048 1GA16IS012	Sameer G Mathad Pruthvi L R Sanjana C S B Akash	Wink to Communicate and Feelings for Music Application for Paralyzed using Computer Vision	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
10.	1GA17IS015 1GA17IS042 1GA17IS064	Bhumika J Rashmi R. Kotiyan Sonal T.H.	Implementation And Comparative Analysis of Classification Algorithms for Early Detection and Prediction of Cardiovascular Disease	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
11.	1GA16IS011 1GA16IS025 1GA16IS030	Ashwin Kumar K Likith J Nagendra Prasad	Deep Learning Approach to Detect Objects Using Drone Computing	Online International Conference on "Recent Trends in Computer Science and Information Technology" (ICRCSIT–20) on 17th & 18th June 2020	June 2020
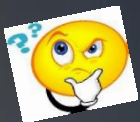
What goes in the place of question mark?

$$3 + 4 = 5$$
$$5 + 12 = 13$$
$$1 + 4 + 8 = 9$$
$$1 + 1 + 3 + 5 = ?$$

PEDAGOGICAL INITIATIVES

Faculty @ Department of ISE makes use of various Pedagogical Approaches in the Teaching Learning Process. This blended learning has created interest among the student community. Pedagogical Initiatives include Project based learning, Flipped Classroom, Model and Chart Making, Seminar Presentations, Quizzes, Hands on Sessions and many more. Due to outbreak of Corona in March 2020, completed country faced lockdown. This didn't stop ISE faculties from teaching students. Faculties updated their teaching skills using Online Platforms. Quizzes, Flipped Teaching, Presentations and active learning methods continued in online mode. Animations, Videos, step by step explanation of programs were included in the Teaching Process.
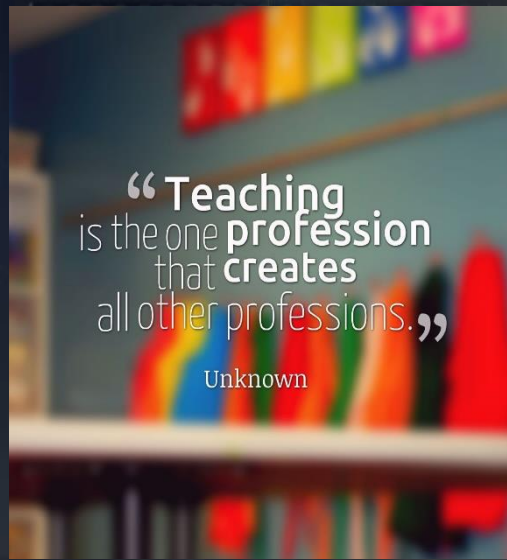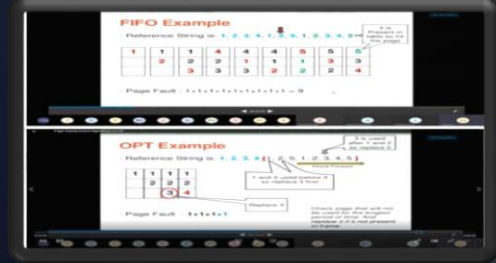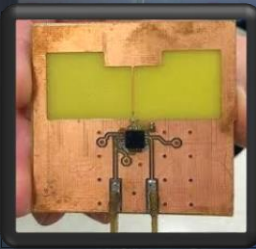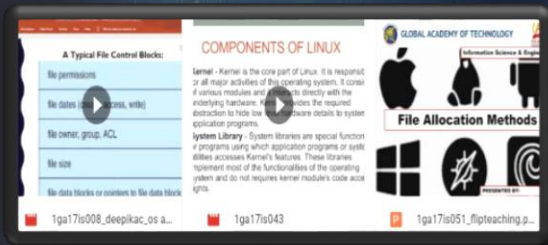
ART AND PHOTO GALLERY

Photography By:
Saadhvi Hosmaane, 4th sem

TALENT IS A PURSUED INTEREST.
ANYTHING THAT YOU'RE WILLING TO
PRACTICE. YOU CAN DO"
BOB ROSS

Art By :
Shruthi K R
Assistant
Professor

ART AND PHOTO GALLERY

Photography By: Sanjay T C. 4ᵗʰ sem

Transfer learning in computer vision tasks

By DJ, Tech Guru

Deep convolutional neural network models may take days or even weeks to train on very large datasets. A way to short-cut this process is to re-use the model weights from pre-trained models that were developed for standard computer vision benchmark datasets, such as the ImageNet image recognition tasks.

What is Transfer Learning?

Transfer learning generally refers to a process where a model trained on one problem is used in some way on a second related problem. In deep learning, transfer learning is a technique whereby a neural network model is first trained on a problem similar to the problem that is being solved. One or more layers from the trained model are then used in a new model trained on the problem of interest.

What is Computer Vision?

Computer Vision, often shortened to CV, is defined as a field of study that seeks to develop techniques to help computers "see" and understand the content of digital images such as photographs and videos. The problem of computer vision appears simple because it is trivially solved by people, even children.

Why Deep Learning for Computer Vision?

Deep learning methods are popular, primarily because they are delivering on their promise. Some of the first large demonstrations of the power of deep learning were in computer vision, specifically image recognition. More recently in object detection and face recognition, five promises are:

The Promise of Automatic Feature Extraction. Features can be automatically learned and extracted from raw image data.

The Promise of End-to-End Models. Single end-to-end models can replace pipelines of specialized models.

The Promise of Model Reuse. Learned features and even entire models can be reused across related tasks.

The Promise of Superior Performance. Techniques demonstrate better skill than classical methods on challenging tasks.

The Promise of General Method. A single general method (e.g. convolutional neural networks) can be used on a range of related tasks.

Models for Transfer Learning:

Three of the more popular models are as follows. These models are both widely used for transfer learning both because of their performance, but also because they were examples that introduced specific architectural innovations, namely consistent and repeating structures (VGG), inception modules (Google Net), and residual modules (Res Net).

VGG (e.g. VGG16 or VGG19), GoogLe Net (e.g. InceptionV3), Residual Network (e.g. ResNet50).

Description:

Information about the Staff's presence in their cabin

Idea:

Students approach teachers to clarify their doubts, etc. If the staff is not present in his/her cabin, the student disturbs the other staffs or they may have access to the cabin without the knowledge of the staff. To avoid these circumstances, we have a device setup outside the staffroom, to indicate the presence of the teacher in his/her cabin.

Passive Infrared ray Sensor [PIR Sensors]:

It detects the motion of humans based on the heat produced by them. We can change the sensing pattern and delay easily. Therefore, this makes us possible to detect only human motion within the range of 110 degrees and the width of 3m to 7m. PIR senses motion for every 3 seconds or the delay time that is manually set, the motion is detected and the LED glows.

The PIR sensor is placed on the monitor, it senses the movement of the teacher in front of the device, passes the signal to microcontroller, in turn, the microcontroller turns the led on/off, based on the input received. If any object falls or is in motion, the PIR does not sense the object as sensitivity is manually set, so it only senses human motion.

DID YOU KNOW?

- ✓ 15 minutes of exercise everyday can add 3 years to your life
- ✓ If you read a speech before you go to bed, you will remember it better in the morning
- ✓ You can die from fear, because the body releases a big amount of adrenaline which can be toxic in amounts

pngtree.com

Never wait for a perfect moment, just take a *moment*, and make it perfect.

Student Editor

Sudeep R S
4th sem,
Dept. of ISE

Faculty Editor

Shruthi K R
Asst. Professor
Dept. of ISE