MARCH, 2017

SRMS College of Engineering, Technology & Research, Bareilly

CAMPUS-ANVESHAN

e- NEWSLETTER

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PRINCIPAL'S DESK

Cognitive Computing

The area of artificial intelligence is always evolving and within this context cognitive computing is emerging as most promising technology. Cognitive computing is the simulation of human thought processes in a computerized model. Cognitive computing involves self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way the human brain works. The goal of cognitive computing is to create automated intelligent systems that are capable of solving problems without requiring human assistance. The goal of cognitive computing is to simulate human thought processes in a computerized model. Using self-learning algorithms that use data mining, pattern recognition and natural language processing, the computer can mimic the way the human brain works in this computing. It makes a new class of problems computable. It addresses complex situations that are characterized by ambiguity and uncertainty; in other words it handles human kinds of problems. Cognitive computing systems make context computable. They identify and extract context features such as hour, location, task, history or profile to present information set that is appropriate for an individual or for a dependent application engaged in a specific process at a specific time and place. While computers have been faster at calculations and processing than humans for decades, they haven't been able to accomplish tasks that humans take for granted as simple, like understanding natural language, or recognizing unique objects in an image. Cognitive computing is oriented for providing such capabilities to computers.

Dr A K Srivastava

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WORKSHOP ON INDUSTRIAL ROBOTICS USING ARDUINO: 21st MARCH 2017

On March 21st, 2017, a workshop on 'INDUSTRIAL ROBOTICS USING ARDUINO' was organized by student coordinators Mr.Waquar Hussain(IV year, SRMSCET) and Ms. Shivangi Gupta(III year ,SRMS CETR-) under the guidance of Er. B.R. Dutta (HOD ECE Department) and Mrs. Preeti Verma (Asst. Professor EC Department) of Electronics & Communication Department in the College.

It was an extraordinary initiative taken by the ECE Department as the workshop provided promising knowledge of RISC based Microcontrollers and Arduino development board and their ever growing use in the present day world. The best part of the workshop that the Hardware and Software thorough knowledge were provided to the students by the student coordinators. The College Management has provided all hardware parts without any charge of money to each group of students during workshop. This workshop was attended by the 50 students of II year and III year of ECE, EE and CSE branches.

The workshop commenced with the motivational addressing of Principal Dr. A.K. Srivastava. This marked the beginning of the first session in which videos on Industrial Automation and presentations prepared by the student coordinators were shown for enriching experience regarding Arduino. Some new terms like Darlington pair, H- Bridge, Ultrasonic Sensors, Opt coupler, etc. were also coined in this session. The second session involved practical implementation. It gave the students a hands-on experience on Arduino IDE. Also, robots were provided to the students for practical experience and they were explained how to program these robots and make them work smoothly by Faculty Incharge, Er. B.R.Dutta and Mrs. Preeti Verma along with student coordinators. This workshop proved that the college is capable of conducting such activities on its own without any support from external resources.

Er. B.R. Dutta came up talking about facts, innovations and telling about increasing automation all around. He inspired the students to expand the horizon of their minds and start working on some projects on robotics and automation all around. He inspired the students to expand the horizon of their minds and start working on some projects on robotics and automation on their own. The day was concluded with a quiz given to the students which involved questions related to all what was talked about whole day. The students scoring maximum marks were given certificates of merit as well as all the students were given certificate of participation. The day ended on a good note as the students gave enthusiastic and appreciative response about all day long.

CONFERENCE ON CONTEMPORARY RESEARCH IN COMPUTING & INFORMATICS: 25th MARCH 2017

Success belongs to those who believe in the destiny of their dreams and make every possible effort to turn it into reality.

On March, 25th, 2017 Shri Ram Murti Smarak Trust organized the 4th National Conference on he Contemporary Research In Computing & Informatics hosted by Shri Ram Murti Smarak College of Engineering Technology & Research.

The event was inaugurated by seeking blessings from goddess Maa Saraswati and lamp lightening by honorable Chairman Shri Dev Murti Ji. Ocassion was blessed by the presence of Trust Secretary Aditya Murti ji, Trust Administrator Er. Subhash Mehra, Madam Richa Murti , Head of the Computer Science Dept. SRMS CET Prof. L.S Maurya along with the Heads of the various departments from SRMS CET & SRMS CETR.

Key note Speaker for the conference was Mr. Piyush Kapoor and Prof. M.N. Hoda The main objective of the Conference was to imbibe that as technology is the need of the hour, so our actions should speak the same.

Prof. Mr. M.N. Hoda taught the students about the various emerging research topics of computer science through his age of experience and various testimonials.

He also gave various motivational examples to help the students better develop their skills. Further the conference was headed by Mr. Piyush Kapoor and Dr. Krishnan Kumar who emphasized the students on different topics like "AZILE" and "HADOOP" which is an open source Java-based programming framework that supports the processing and storage of extremely large data sets in a distributed computing environment. It is part of the Apache project sponsored by the Apache Software Foundation and addressed the gathering on artificial neural network respectively.

Furthermore, several students of various colleges participated and presented their research work along with briefing on various emerging topics in the field of computer sciences. The entire Conference was summed up in four key points emphasizing on sound subject knowledge, cooperating with others, communications skills and quality presentation. The event was headed under the guidance of Mr. Shailesh Saxena who is the head of the department of computer science engineering in SRMS CETR. Finally the event ended by giving momento to various chief guests and concluding speech by principal, Principal SRMS CETR Prof. Anant Kumar Shrivastava.

REPORT ON ART COMPETITION FREEDOM OF EXPRESSIONS:

30th MARCH 2017

"Those who are gifted with the talent of expressing thoughts using brushstrokes, today on 30th March,2017, the Creations Club(Creative Wing) of Student's Welfare Club , VERVE of SRMSCET&R provided a platform to showcase their talent and impress everyone.

Like every year this year again SRMSCET&R organized an art competition with the new theme "FREEDOM OF EXPRESSION". Theme was appropriate in a sense of providing freedom to youngsters with the equal emphasis on power of concentration and creativity.

When you set those brushes and pencils free, they do wonder and can depict any dreams on a piece of paper.

With this aim of canvassing thoughts into reality, aforesaid mega creative event "Freedom of Expressions" was started by taking blessings from Chairman Shri Dev Murti Ji who congratulate students for their active participation and encourage them to give their best in the allotted time.

Principal SRMS CETR Prof. Dr. Anant Kumar Srivastava motivated the participants from different academic domains and specialization to come forward and surprise the audience with the bent of artistic trait hidden inside each of them.

In a short span of 2 hours' participants created wonderful sketches and painting which was at par with any international standards of cultural & art festival. Started on a high note, it brought upon the magic which students had in their hands. With about 65 participants from all over the trust, the scenario itself turned into a masterpiece. This event was coordinated by Ms. Priya Verma (3rd Year B.Tech) and Ms. Rashmi Mishra (2nd Year B.Tech).

There were three categories under this event, namely:

- Oil painting/Water color painting
- Pencil color sketching
- Waste material art

The competition was carried on with enthusiasm and the participants were on high spirits.Finally, the gallery looked beautiful with an array of paintings all around. Each and every participant fill the canvas with a special art of its own class that adds difficulty for judges to finalize the winners.

Event was marked with the presence of important members of the SRMS Trust: Trust Secretary Aditya Murti, Madam Richa Murti, Asha Murti & Ambika Murti, and Trust Administrator Er. Subhash Mehra, Principal SRMS CET Dr. Prabhakar Gupta, Principal SRMS CETR Prof. Dr. Anant Kumar Srivastava, Training & Placement Head Anuj Kumar, Dean Student welfare SRMS CET &CETR Mr. Santosh Khare & Devender Gangwar .

VALUE ADDED COURSE DEVELOPMENT

Mr. Bishwajeet Kumar, Asst. Professor-CS, developed and conducted workshop including 8 hour practical training module on NS-2 with special emphasis on experiments and implementation. It helped the students to develop different type of project concerned to Adhoc Network, MANET, Mobile computing. The training started for different batches of the students.

During this workshop following concepts were covered.

- Introduction – Background and Overview
- Components and tools of NS2
- Tcl/OTcl Programming
- Creating a wired Scenario and Enhancing the NAM output
- Generation of node-movement and traffic-connection for wireless scenarios-creating a Wireless Scenario
- Creating Wired-cum-wireless Scenarios
- Tracing Support **-**Format for wired Traces, Old Format for wireless traces and Revised format for wireless traces
- Post Trace Processing & Graph Generation

Ms. Shikha Arya Asst. Professor-CS, developed and conducted workshop including 6 hour practical training module on PHP with special emphasis on experiments and implementation. It helped the students to develop different type of project concerned to website development.

During this workshop following concepts were covered.

- Introduction – Background and Overview
- Fundamental concepts: Syntax, data type, functions, loops etc
- Time and date function
- Form design
- File handling
- Session management
- Cookies
- SQL Database connectivity

Mr. Jitendra Singh, Asst. Professor-CSE Department, developed and conducted workshop of 15 hours on Advance Java entitled as " JAVA DEVELOPMENT : Desktop Applications and Web Applications" with special emphasis on experiments and implementation. Outcomes after completing this course were : **Understanding** concepts of JAVA (Core and Advance) specifically for Desktop and Web Applications, **Implementation** of JAVA concepts in NetBeans IDE , will enhance Programming Skills and Confidence to develop software projects, **Enable to response** of Interviewer paper- pen based questions in JAVA language, **Enhance** the understanding of area of Software Projects (Desktop as well as Web Applications) to implement JAVA and NetBeans IDE and Highly Expected to motivate towards development of Web and Desktop Applications by herself/himself.

This workshop was open for all the ongoing batches of CSE Department.

During this workshop following concepts were covered with practical implementation.

- Introduction – Background and Overview
- Core Java Basics
- Introduction to NetBeans IDE
- Core Java Advance Concepts
- Servlet in Action
- JSP in Action
- Desktop and Web Application Development

At the end of the workshop projects were assigned in group, progress of work and query handling is done according to the time-table scheduled.

PLATINUM-MOLYBDENUM CARBIDE EXPEDITES HYDROGEN FORMATION FROM WATER AND METHANOL:

Researchers in china have developed a catalyst which will enable more practical hydrogen fuel all vehicles.
Ring Ma from peking university in Beijing & co-workers make hydrogen & CO_2 from methanol-water, which in traditional approach happens at 200-350^{0}C but in presence of platinum-molybdenum carbide catalyst it can happen at 150-190^{0}C.

Compiled by:
Dr. Ritu Singh
HOD (Basic Science Deptt.)

8 COMMON PHISHING ATTACKS AND HOW TO PROTECT AGAINST THEM:

In 2017, there's one surefire way to be made a fool – being a victim of a phishing attack. Phishing refers to attempts to make a sucker out of you. The ***phishers*** want to take your usernames, passwords, credit cards and money. They approach you through the Internet or telephone pretending to be a legitimate person or agency.

8 Common Phishing Attacks

1. Whaling (or cyber-whaling) targets the highest-level company executives who handle finance and data decisions. Assuming business leaders aren't suckered by the common pitch, phishers prepare special approaches called harpoons.

2. **Harpooning** uses personal details secured from other business sources and social networks, so the email language appears unique to the individual and confidential. The email might also include the sort of attachment the recipient would be pressed to open, like a subpoena, contract or tax form.

3. Spearfishing does the same as harpooning on a less sophisticated level. It targets anyone in the organization or database with just enough personal information to tempt the recipient to open the mail.

4. Fake phishers indulge in deceptive fishing by sending emails that present as a legitimate company, such as PayPal, MasterCard, Wal-Mart or others. Recipients are fooled into thinking the request for personal information is legitimate.

5. **Pharming** is a malicious technology scheme to convert the alphabetical Domain Name System (DNS) of websites into a numerical IP address which then redirects browsing users to a malicious location even if the victim entered the correct website search.

6. **Mimic phishing** imitates trusted sites like Drop box, Google Docs or Outlook. Messages offer absolute duplicates of the sign-in screens for such sites and lure victims to enter their personal sign-in username and password.

7. Nigerian schemes promise delivery of a big payoff if the victim makes an advance payment or fee to secure the grant.

8. Banking scams and tax frauds announce a problem with banking or tax records and demands personal information to correct the problem.

How to Protect Against Them:

1. Banks, tax authorities and trusted agencies never ask for personal information online.

2. Email addresses of a sender must correspond to a legitimate business domain name.

3. Never click any unverified link. For example, there's no need to click-through an email message if the actual website is available.

4. Optimize your system. For example, put some effort into white and black listing your incoming emails by your customizing the system's filtering.

5. Avoid URLs that begin with http:// rather than https://. Look for the lock icon in the URL line.

6. Do not respond to emails demanding an "urgent" response. Call the source to verify their identity and proceed accordingly.

7. Look for amateur work with poor language and spelling.

8. Refuse to sign onto a site through Facebook or other social media access.

Compiled by:
Ms. Arti Mishra
Asst. Professor (CS Deptt.)

THE GROWING IMPORTANCE OF THE SAFE OPERATING AREA IN MOSFET CIRCUIT DESIGN:

Hot swap circuits are the gateway to board power and a MOSFET failure can damage the expensive processing electronics downstream of the device, in addition to the hot swap controller itself. Field failures, exposing MOSFET weakness, may involve costly recalls and consequent damage to reputation.

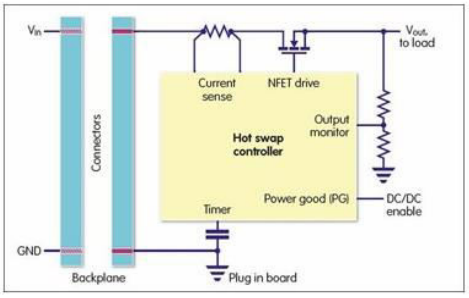

Fig. 1 Hot Swap Controller

Hot swap controller ICs enable such board insertion and removal from live systems by soft starting the supply, avoiding connection sparks, backplane supply glitches and card resets. The controller IC drives a power MOSFET switch placed in series with the supply entering the board (see figure 1). The common reason for MOSFET failure is that insufficient attention was paid to its safe operating area (SOA) during selection. Instead, the MOSFET may have been selected primarily for its drain-source on Resistance (Rds(on)) and maximum drain current (Id(max)).

The new design may also have been based on an older one with lower load capacitance in which the same MOSFET worked perfectly.

Safe operating area

The SOA is a measure of a MOSFET's power handling capacity for pulsed and DC loads. The x-axis is usually the MOSFET drain-to-source voltage (Vds), while the y-axis is usally drain current (Id), with both axes plotted using a logarithmic scale. On such graphs, straight lines (each for different pulse width, tp) depict constant MOSFET power and each line represents the power dissipation allowed in the MOSFET for a specific tp – and tp can range from microseconds to infinity (DC). For instance, for a 10ms wide pulse, a MOSFET could support 5V from drain to source with 50A flowing through it. This equates to a power dissipation of 250W. Lower power for the same pulse width ensures safe MOSFET operation, which would be denoted as an area of the graph beneath the 10ms line – and this leads to the term safe operating area.

Why is SOA important?

Most power MOSFETs are applied in circuits where they switch on and off quickly, spending only nanoseconds in the high dissipation transition state. In such applications, SOA is not a primary concern. In contrast, SOA is very important in hot swap circuits, which provide inrush current control (soft start), current limiting and circuit breaker.
MOSFET while Vds ramps down from 12V (12Vin − 0Vout) to almost 0V 12Vin − 12Vout). When a short-circuit occurs at the load, the controller will limit the current to 6A with 12V (12Vin − 0Vout) across the MOSFET. This 72W dissipation state lasts for 1.2ms until the circuit functions. To understand why, let's think about start-up waveforms for a hot-pluggable board. When the board is inserted into a 12V backplane supply, the hot swap controller waits for the connector contact bounce to finish before soft-starting the MOSFET gate. The output voltage follows and reaches 12V in 40ms. For this soft-start period, a capacitive charge current of 200m breaker timer expires. In situations such as start-up inrush and current limiting, a hot swap MOSFET is required to handle significant power for periods ranging from hundreds of microseconds to tens of milliseconds and attention needs to be paid to its SOA performance.

Guaranteed SOA

Linear Technology offers a family of integrated MOSFET hot swap controllers that simplifies the hot swap designer's task by eliminating the time spent scouring MOSFET data sheets for the best fit.

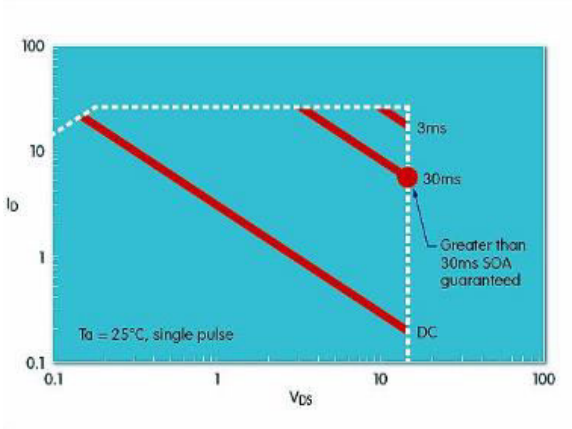

Fig. 2 .*The guaranteed safe operating area graph for the LTC4234*

The latest additions to the family – the LTC4233 and LTC4234 (see fig 2) – are 10A and 20A hot swap controllers respectively, with integrated MOSFET and current sensing for supplies ranging from 2.9V to 15V. This covers the standard supplies of 3.3V, 5V and 12V. By integrating the two most critical and largest hot swap components – the power MOSFET and sense resistor – these controllers free design time better spent on adding more valuable features to the end product and also release board area.

Reference link

1.http://ftm.futureelectronics.com/2016/05/future-electronics-the-growing-importance-of-the-safe-operating-area-in-mosfet-circuit-design/

2.http://www.newelectronics.co.uk/electronics-technology/keeping-mosfet-operating-areas-safe/153281/

3. http://www.eetimes.com/document.asp?doc_id=1227104

Compiled by:
Ms. Sonam Rathore
Asst. Professor (EC Deptt.)

ACHIEVEMENTS & RECOGNITIONS

Mr. Shailesh Saxena received the approval of his research topic and guide for the PhD program enrolled in M.J.P Rohilkhand University, Bareilly.

The Topic is - "Performance Analysis And Optimization of Cloud Data Centers Under Energy Efficiency Strategies"
Name of Guide is - Dr. Ravindra Singh , Head, Deptt. of CS & IT, M.J.P. R.U. Bareilly

"BAN ON BEACONS"

The Narendra Modi government announced on Wednesday that from the next month only emergency services will be permitted to use sirens to cut through busy roads.

"From May 1, no vehicle will have a Red light. There will be no exceptions."

The Red beacons have become lightening Rod for the public disgust at official corruption and the VVIP culture, of the country's elites.

The Supreme Court described the misuse of the beacons as a menace to the society and said they had become a fashion of status symbol.

Momentum of the ban has been steadily growing

In the past months the newly elected ministers are too heeding in the same direction for safeguarding the country, INDIA.

Deepanshi Verma
CS IInd Year

NEWS IN PICTURE

SOME GLIMPSES

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