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Research Articles

Wireless Transmission of Electricity

Donna

Laser Communication System

Naveen

Object Oriented Database Design - A Concept

Suresh K. Durgappa

Global Economic Crisis and its Impact on Indian Advertising Industry

Avinash B. N.

Commentary

XML 3D HTML Extension Making Online Shopping Experience 3D!

Manjunath - I sem

Research Minds



Contents

Advisors

Dr. D. L. Prabhakara
Dr. Umesh M. Bhushi

Editorial Board

Editor
Dr. K. Vidyavathi
Co-Editor
Mr. Sunil Kumar
Ms. Neetha Kamath
Mr. Naveen T. P.

Streams

- Engineering
- Management
- Health Sciences
- Technology
- Science

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Editorial

- Dr. Umesh M. Bhushi

Research Articles

- **Wireless Transmission of Electricity**
Donna
- **Laser Communication System**
Naveen
- **Object Oriented Database Design - A Concept**
Suresh K. Durgappa
- **Global Economic Crisis and its Impact on Indian Advertsing Industry**
Avinash B. N.

Commentary

- **XML 3D HTML Extension Making Online Shopping Experience 3D!**
Manjunath - I sem

Insights of HR Symposium @ Sahyadri

Book Reviews

- **“The Leader who had no title”**
Mr. Jayanna Veeranna Gorabal





Principal
Dr. U. M .Bhushi

The explosive advances in knowledge, instrumentation, communication, and computational capabilities create a mind-boggling playing field for the next generation. Amidst the plethora of challenges, Engineering will not operate in a vacuum separated from society in 2020, any more than it does now. Both on a macroscale, where the world's natural resources will be stressed by population increases, and on a microscale, where engineers need to understand how to work in teams to be effective, consideration of social issues is important to engineering. Therefore engineering education must produce technically excellent and innovative graduates, to enrich and broaden engineering education so that those technically grounded graduates will be better prepared to work in a constantly changing global economy. To be adaptable to this dynamic changes, students should be driven by passion, curiosity, engagement, and dreams so as to position for what lies ahead, rather than waiting for time to pass and then trying to respond....

Therefore engineering education is in the process of reinventing itself to move from mere curriculum to facilitate thought process towards fundamental research to move the field forward through which we can address overarching and grand questions. So there is a need to link research to relevant theory, Provide a coherent and explicit chain of reasoning, Replicate and generalize across studies, and disclose research to encourage professional scrutiny and critique.

Meanwhile, industry has decreased its own in-house fundamental engineering research, making it even more important that universities conduct advanced basic research. Thus, this is a part of the engineering education infrastructure that must be preserved.

In this endeavour, students are expected to think beyond and use the platform given like the “Research Minds”, the E-Journal of Sahyadri for technical upgradation either reading it or contributing to it.

“Learn as if you were to live for ever”

Wireless Transmission of Electricity



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Abstract -In times where we are making everything from telephone to internet wireless, the concept of wireless transmission of electricity is a breath of fresh air. The wireless transfer of electricity has been a sci-fi dream up to this point, and truly, if electricity could simply be in the air, in the same way radio waves and wi-fi signals are, it would change the world. We would truly have a clutter free world without wires and transmission lines. In our present electricity generation system we waste more than half of its resource. Especially the transmission and distribution losses are the main concern of the present power technology. The transmission and distribution system causes a loss of 26 to 30 % of the energy generated. The transmission of power without wires may be one noble alternative for electricity transmission. As the demand increases day by day, the power generation increases and the power loss is also increased .The main reason for power loss during transmission and distribution is the resistance of wires used for grid. The efficiency of power transmission can be improved to certain level by using high strength composite over head conductors and underground cables that use high temperature super conductor. But, the transmission is still inefficient.

Use this link to access the full text -

<http://sahyadri.edu.in/E-Journal/witricity.pdf>

Laser Communication System



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Abstract - Laser communication is one of the key area in wireless Communications. This paper includes analysis, optimization, design and system level development of signal transformation between satellites or any two sources. Which work similarly to fiber optic links, except the beam is transmitted through free space. While the transmitter and receiver must require line-of-sight conditions, they have the benefit of eliminating the need for broadcast rights and buried cables. Laser communications systems can be easily deployed since they are inexpensive, small, low power and do not require any radio interference studies. The carrier used for the transmission signal is typically generated by a laser diode. Two parallel beams are needed, one for transmission and one for reception.

Use this link to access the full text -

<http://sahyadri.edu.in/E-Journal/laser.pdf>

Object Oriented Database Design - A Concept



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Abstract -Database design has a long history. File based system to basic database systems popularly known as DBMS (Paradox, FoxPro) to most advanced RDBMS like MSSQL Servers, DB2 and Oracle. Object oriented database design is more recent and “clearly needs more work”. Over the long history of database design, many ad-hoc and empirical techniques has been used. There has also been a flurry of theoretical research that has provided us with some interesting insights, but has sometimes disappointed us in terms of practical realities. How can we bring together and extend the best of this work for use in designing object oriented database systems?Addressing this topic is an arduous task, and we do not pretend to have all the answers. Nevertheless, we present here a point of view that builds on and extends past successes, is practical, has a formal foundation with provable properties of interest, and makes adjustments for several types of application peculiarities. In doing so, we do not try provide a broad, superficial coverage of this vast area, but rather practically implemented solution in the form of some specific model transformations and algorithms for scheme and method-signature generation, and in the form of several specific adjustments based on insights about application peculiarities and theoretical anomalies.

Use this link to access the full text -

<http://sahyadri.edu.in/E-Journal/oodbdesign.pdf>

Global Economic Crisis and its Impact on Indian Advertising Industry



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Abstract - Advertising is a form of communication used to persuade audience, viewers, readers or listeners to take some action with respect to products, ideas, or services. Most commonly, the desired result is to drive consumer behavior with respect to a commercial offering, although political and ideological advertising is also common. Advertising messages are usually paid for by sponsors and viewed via various traditional media; such as newspaper, magazines, television commercial, radio advertisement, or new media such as websites and text messages. Commercial advertisers often seek to generate increased consumption of their products or services through "Branding," which involves the repetition of an image or product name in an effort to associate certain qualities with the brand in minds of consumers. Non-commercial advertisers who spend money to advertise items other than a consumer product or service include political parties, interest groups, religious organizations and governmental agencies. Nonprofit organizations may rely on free modes of persuasion, such as a public service announcement.

Use this link to access the full text -

<http://sahyadri.edu.in/E-Journal/finalglobal.pdf>

Commentary



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XML 3D HTML Extension Making Online Shopping Experience 3D!

Ever wondered if there is a way through which FlipKart can reach to more customers? Well, there is more than an idea that can take your shopping experience to a new height. It is the 3D view which is set to give you a 'feel' of what you are buying by looking at it virtually, but clearly. University of Saarland has just accomplished that.

Ahead of CeBIT 2012, Saarland University developers have spotted a '2D' problem associated with the conventional online shops. They have developed a **new HTML extension** called **XML3D** to let potential buyers interact with products. This novel idea probably comes from the 3D modeling software used in industries. Previously, if any website wanted to showcase various spatial aspects



of their product, they would have to click pictures through various angles. This was not an easy way of solving the problem. However, another way was to have a video of product displayed on the website that would give an insight of how the product actually looked like.

The extension developed by Saarland technicians is a way of improving the conventional measures adopted for displaying objects on sale. With XML3D, it is

now an easy task of embedding 3D content on web, earlier possible only through the use of video clips. The peculiarity of the 3D HTML extension is that, a programmer does not need to do anything extra for having the 3D attributes displayed on web. The extension forms a part of the web page's HTML code. This permits a programmer to use his usual designing skills to create a web page.

The computer scientists at Saarland have already completed implementing this extension for Firefox and Chrome. It is expected to be available in the latest versions of Safari, Chrome and FireFox. Also the internet giants have shown their interest in the latest technology. The present development will be demonstrated by Saarland University's Intel Visual Computing Institute at CeBIT 2012. As the web becomes more advanced, the graphical capability thus unleashed by applying similar technologies will find wide applications.

OSIM Upixe: Programmable USB massager

We know that USB devices can do all sorts of things, they can play our multimedia content, transfer our files, and so much more, but today we have a first USB device that can actually massage you while you're working on your computer. You might not know, but company OSIM is famous for its



massage chairs, and after massage chairs, they have decided to focus on something more compact, and that's how we got OSIM uPixie. OSIM uPixie is perfect if you're experiencing back pain due to long hours spent in front of your computer, and in order to use OSIM uPixie, you just need to connect it to your USB port and place it on your body and you're good to go. OSIM uPixie is using Electronic Muscle

Stimulation for the massage purposes, and it comes with four predefined massage programs, but you can easily develop your massage program as well, and you can even synchronize the massage with the music player on your computer.

Keyboard pants with Bluetooth keyboard, Wireless mouse and built in Speakers

We're all looking forward to the smart outfit that will have Internet access, but until that day comes, we'll have to settle with a different part of clothing that combines fashion and technology into one.



Carrying your keyboard with you at all times can be a hassle, especially if you don't have a compact keyboard that you can easily put in your pocket, but if you need to have your keyboard with you at all times, designer Erik de Nijs has the right solution for you.

Keyboard pants combine a pair of modern jeans with a Bluetooth keyboard, allowing you to wear your keyboard with you wherever you go. In addition to Bluetooth keyboard, these pants come with built-in speakers and a wireless mouse, so you won't have to worry about your input devices no more.

iHoverMast is The Unique High Altitude Spy Machine

Traditional surveillance systems are acceptable to a greater extent as they are quite portable and consume less portion of the hard disk to record data. But can you ever imagine the need to spy from the sky? Well, in order to tackle such a problem, **Sky Sapience** has developed a prototype which is a hovering surveillance system hanged on to a small vehicle that can be snooped from the sky.



The device code named as **HoverMast** can be deployed from an altitude of around **50 meters** in just **10-15 seconds**. The vehicle on which the machine sits looks like a SUV with some propellers fitted to it. Basically the machine is powered through cables from the ground and the fuel from the vehicle's tank is typically used for hovering. As a result the entire hover time totally depends on the fuel of the vehicle.

The HoverMast is equipped with cameras that capture live images both during day time and night time and

directs them through the cables to the ground station. The carrier vehicle can carry an additional load of around 6-9 kg which might include sensors, radar, signals intelligence systems or laser designators to identify targets for missiles.

The proposed application of HoverMast is for border security as said by a delegate from Sky Sapience. What more? The HoverMast can withstand wind speeds of up to 25 km/h and perform takeoff or landing in just 10-15 seconds. The prototype is set to be demonstrated in April and we expect the commercial production to commence by the end of this year.

Useful URL's

www.indiabix.com - Learn and practice Aptitude questions and answers with explanation for interview , competitive examination and entrance test.

www.doaj.org - The Directory of Open Access Journals (DOAJ) is website maintained by Lund University which lists open access journals.

www.4shared.com - websites provides online storage and sharing of file and eBooks and videos.



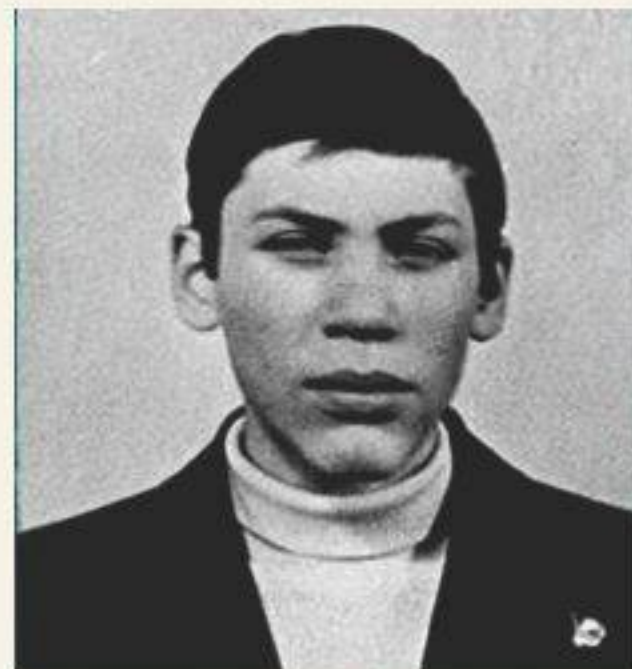
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5 Greatest Hacks of the World

CitiBank Robbery in 1995



In 1995 Russian geek and graduate of St. Petersburg Tekhnologicheskoy University Vladimir Levin hacked CitiBank servers and transferred around \$10.7 million into various accounts in USA, Finland, Holland, Germany and Israel.

Levin used a laptop computer in London, England, to access the Citibank network, and somehow obtained a list of customer codes and passwords. Then he logged on 18 times over a period of weeks and transferred \$10.7 million through wire transfers to accounts his group controlled in the United States, Finland, the Netherlands, Germany, and Israel. Citibank later

retrieved all but about \$400,000.

When Citibank noticed the transfers, they contacted the authorities, who tracked Levin down and arrested him at a London airport in March, 1995. He fought extradition for 30 months, but lost, and was transferred to the US for trial. He was convicted and sentenced to three years in jail, and ordered to pay Citibank \$240,015. Four members of Levin's group pleaded guilty to conspiracy to commit bank fraud, and served various sentences.

After the compromise of their system, Citibank updated their systems to use Dynamic Encryption Card, a physical authentication token. Following his arrest in 1995, anonymous members of hacking groups based in St. Petersburg claimed that Levin did not have the technical abilities to break into Citibank's systems, that they had cultivated access to systems deep within the bank's network, and that these access details had been sold to Levin for \$100.

Timothy Lloyd's Code Bomb

This USA hacker wrote six lines of code called logic bomb and installed it on Omega Engineering Corporation's systems. Omega Engineering is primary supplier of components to US navy and NASA. Lloyd's code bomb deleted Omega's design and production programs causing loss of almost \$10 million.

Lloyd worked with Omega Engineering for almost 11 years as a network administrator and according to stories he was fired back in 1996 because of his unavoidable attitude with peers. July 31st, 1996 was the date when Lloyd's code bomb exploded in response to one of Omega's employees logging in to the system. Code deleted or corrupted Omega's production and design programs and this hack is considered largest worker-related computer sabotage.

He was convicted in USA court and was put behind bars for several years.

Robbery of Navy Missile Codes



In 2001, Unknown hackers logged into a computer at a Navy research facility in Washington and stole the source codes to a missile guidance program.

Representatives of Exigent Software Technology, based in Melbourne, claimed that they built the stolen program, called "OS/COMET." The Air Force has installed OS/COMET, which can also be used to guide satellites and spacecraft, to a Global Positioning Satellite system in Colorado Springs, Colo., according to Exigent.

The software was secret when it was first used in the 1980s, but is now sold commercially. He said the intruder only got about two-thirds of the source codes.

Melissa Virus

The Melissa virus was the first of its kind to wreak damage on a global scale. Written by David Smith (then 30), Melissa spread to more than 300 companies across the world completely destroying their computer networks. Damages reported amounted to nearly \$400 million. Smith was arrested and sentenced to five years in prison.

Mafia Boy



Mafia Boy, whose real identity has been kept under wraps because he is a minor, hacked into some of the largest sites in the world, including eBay, Amazon and Yahoo between February 6 and Valentine's Day in 2000. He gained access to 75 computers in 52 networks, and ordered a Denial of Service attack on them. He was arrested in 2000.

Insights of HR Symposium @ Sahyadri



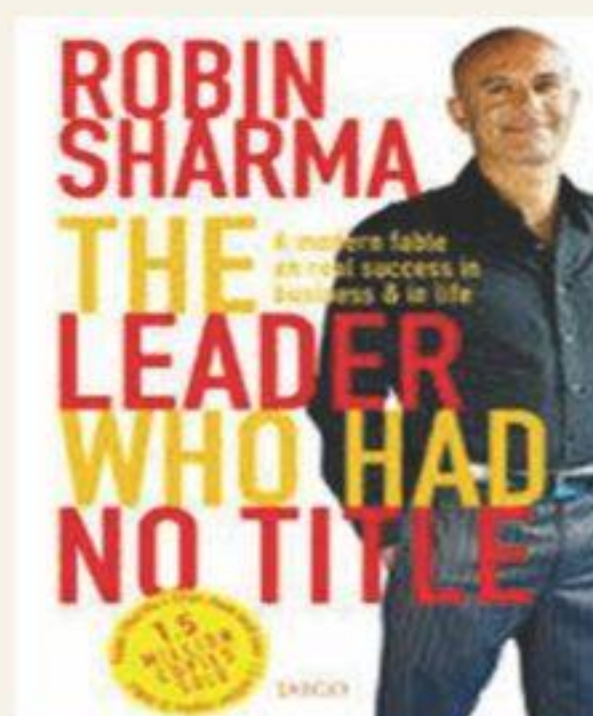
Mr. ES Chakravarthy, Center head, Talent Acquisition, TCS Bangalore. In his inaugural address pointed out the importance of Fundamentals, articulation skill and different cultural aspects such as culture of learning, facing challenges and teaming up with the others. Following this, in the session, he enlightened on Economic Slowdown and its impact on Human resource management. He briefed us with the changes of stake holders committee and gave a wide coverage on various IT trends involving by stakeholders. He concluded by saying understanding the young minds and making them leaders is one of the biggest challenge.

Mr. Praveen Kamath, Global Recruitment Head, Wipro, enlightened on the Topic: **"Talent and Reward Management Global Best Practices"**. In his address, he said that In the back ground of economic uncertainty Human resource manager has to assume new roles of human capital developer, functional expert, strategic consultant and business leader. HR has to understand the realities and meet the challenges of new businesses.

Mr. Anilesh Seth, Co-Founder KROW Bangalore, enlightened on the topic: **"Employee Retention Strategies & Solution"**. In the backdrop of economic uncertainty, employees have a choice. The employees who view the jobs just for time, who are flexible in terms of time, days and location, who are versatile, adaptable to change could survive the economic crisis.

Dr. Bino Paul, Professor, Tata Institute of Social Science, gave insights on the Topic: **"Indian Labour Market - Future trajectories"**. Dr. Bino Paul covered the various trends in Indian labour market: trends in employment status, employment by industry, trends in wage rate, distribution of workers, formal informal employment and elasticity of employment in tertiary sector. He threw light on literacy rate, incentives for general education, major reasons for non enrolment etc. He brought out the interesting demographic trends: dependency ratio across the various countries. His session covered trends in the employment status for male & female and for rural urban regions. He threw light on average wage per day across the various industry of work for various levels of educational qualification. He spoke on the generation and elasticity of employment across various sectors

Book Reviews



“The Leader who had no title”

By Robin Sharma



Reviewed by

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The book is about leadership. It is presented with lots of inspiring quotes. It is delivered in the form of a story, using different characters to illustrate leadership principles. Basically it follows the story of Blake who takes a journey to discover the leader within. The book inspires everybody can become a leader in his work without any title. It takes us a journey towards empowerment and encourages imbibing qualities of commitment in the work. Here author concentrates more on LWT Philosophy, one need not wait for a title, whatever the position and assignment comes in one's life he or she has to achieve it with 100%, and then only one can reach to the highest level in Life. In other sense for acknowledging, title and status are not the vital criteria but zeal and passion brings us hallmark. Robin Sharma elaborates by giving various illustrations like Anna – a member of the housekeeping staff at a luxury hotel. Anna teaches Blake about personal responsibility and the fact that he needs no title to be a leader.

In the book Jackson's message to Blake that the deeper in relationships will be the stronger in leadership, Jackson's defines and decode HUMAN word to Mr. Black

- Helpfulness
- Understanding
- Mingle
- Amuse
- Nurture

The book truly pushes the reader to realize one's potentiality and compels to channelize in the right path. The concept “The Leader Who Had No Title” applies to everyone regardless of position, power and have and haven't. As a matter of fact in the fast changing world leadership qualities plays exceptional role in moulding one's character. To understand one's innate skills and ability this book works as a teacher! I do believe that Robin Sharma's perception certainly forces the younger generation to galvanize towards magnanimous

Guidelines for Submitting Articles

Research Minds is devoted to the publication of original research work undertaken at the Sahyadri College of Engineering & Management, Adyar, Mangalore. The contents of this E-Journal pertain to research contributions in all areas where active research work is pursued in the Institute. Authors of articles published in this bulletin, retain the right to publish the contents of the same in other research forums including web-based publications, journals and periodicals.

The E-Journal welcomes the submission of manuscripts that meet the general criteria of significance and excellence. Papers will be published approximately one month after acceptance. All articles published in the SAHYADRI E-Journal will be peer-reviewed.

The following categories of articles are accepted for publication

Research Articles

E-journal welcomes original research papers in various areas of Engineering and Technology Management, Health Science, Basic Sciences etc.

- Articles must be no more than 8,000 words, including notes and references. Longer articles will not be processed.
- The Articles should be sent by email.
- Articles should be accompanied by an abstract of a maximum of 200-250 words.
- Authors are requested to follow Sahyadri E journal's manuscript format while preparing their articles. The manuscript format and example file is posted on
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 - <http://www.sahyadri.edu.in/e-journal/example.pdf>

Commentary

E-journal invites short contributions to the 'Commentary' section on the latest advancements in Science and Technology, Engineering and Management so that our readers can be up-to-date with the current developments in this competitive world.

Insights of Workshops/Seminars/Conferences

E-journal invites Insights of Workshops/Seminars/Conferences conducted and attended by students and faculty.

Book Reviews

With the objective of promoting reading habits among students and faculty, this E-Journal will publish book reviews.

Research Notes

Students, M.Phil and Ph.D. scholars are encouraged to send their comments and initial products of their research for the Notes Section. Articles should be no more than 3,000-4,000 words.

Research Abstracts

E-Journal invites Abstracts of Project work, M.Phil. and PhD works. Abstracts should be no more than 2,000-3000 words.

Discussion

E-Journal encourages readers to comment on articles published in the E-Journal. Submission should be 1000-1500 words

Letters

Readers of E-Journal are encouraged to comment (300-400 words) on published articles to the Letters column.

General Guidelines

- Writers are requested to provide full details for correspondence: postal address, phone numbers and email address.
(The email address of writers will be published along with the article).
- Authors are requested to prepare their soft copy version in text formats and not in PDF version
- Writers are requested to follow the manuscript template specified and go through the template and example file before writing their paper.

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