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1.

Authors: M. M. Manyuchi, A. Phiri, P. Muredzi, N. Chirinda

Paper Title: Bio-Conversion of Food Wastes into Vermicompost and Vermiwash

Abstract: Vermicomposting technology is the bio-conversion of organic waste into bio-fertilizers using earthworms. Vermicomposting is widely being used for solid waste management. Various food wastes were vermicomposted over 30 days using Eisenia fetida earthworms. Vermicompost and vermiwash were obtained as vermi-products. The vermicompost nitrogen, phosphorous and potassium composition was 2.1%, 0.29% and 0.19% respectively. Whereas, the vermiwash only contained 0.58% nitrogen and 0.47% potassium. Vermicomposting technology is necessary as a food wastes management strategy.

Keywords: Eisenia fetida, food wastes, vermicomposting, vermiwash, vermi-products.

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1-2

2.

Authors: Ajeet Bergaley, Anshuman Purohit

Paper Title: Structural Analysis of Crane Hook Using Finite Element Method

Abstract: Crane hook are highly significant component used for lifting the load with the help of chain or links. In the present paper a crane hook is purchased from the local market for Finite element analysis. The hook was tested on the UTM machine in tension to locate the area having maximum stress and to locate the yield point. The model of hook is prepared in CAE software having dimension and material similar to the crane hook which was purchased from the market. The results obtained were compared with theoretical analysis. Then cross section in which minimum stress induced for given load was modified through FEM.

Keywords: Finite Element Method (FEM), Crane Hook, Curved Beam, Universal Testing Machine (UTM).

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	Authors:	**Sushma, Jyoti Pruthi**
	Paper Title:	**Shortest Path Algorithms Techniques**

3.

Abstract: Shortest paths, or close to shortest paths, are commonly used in everyday situations. The paper reviews the various algorithms available for the problem. One of the famous technique Dijkstra's algorithm solves the single-source shortest path problem on any directed graph in O(m+nlogn) worst-case time when a Fibonacci heap is used as the frontier set data structure. Paper Setup must be in A4 size with Margin: Top 1.78 cm, Bottom 1.78 cm, Left 1.78 cm, Right 1.65 cm, Gutter 0 cm, and Gutter Position Top. Paper must be in two Columns after Authors Name with Width 8.59 cm, Spacing 0.51 cm. Whole paper must be with: Font Name Times New Roman, Font Size 10, Line Spacing 1.05 EXCEPT Abstract, Keywords (Index Term), Paper Tile, References, Author Profile (in the last page of the paper, maximum 400 words), All Headings, and Manuscript Details (First Page, Bottom, left side).Paper Title must be in Font Size 24, Bold, with Single Line Spacing. Authors Name must be in Font Size 11, Bold, Before Spacing 0, After Spacing 16, with Single Line Spacing. Please do not write Author e-mail or author address in the place of Authors name. Authors e-mail, and their Address details must be in the Manuscript details. Abstract and Keywords (Index Term) must be in Font Size 9, Bold, Italic with Single Line Spacing. All MAIN HEADING must be in Upper Case, Centre, and Roman Numbering (I, II, III…etc), Before Spacing 12, After Spacing 6, with single line spacing. All Sub Heading must be in Title Case, Left 0.25 cm, Italic, and Alphabet Numbering (A, B, C…etc), Before Spacing 6, After Spacing 4, with Single Line Spacing. Manuscript Details must be in Font Size 8, in the Bottom, First Page, and Left Side with Single Line Spacing. References must be in Font Size 8, Hanging 0.25 with single line spacing. Author Profile must be in Font Size 8, with single line spacing. Fore more details, please download TEMPLATE HELP FILE from the website.

Keywords: Best first search, combinatorial explosion , empirical time Euclidean, radius search.

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8-11

	Authors:	**Ugale Shrikant, Godse Gaurav, Kale Onkar**
	Paper Title:	**Visualization of Query Processing on Data Warehouse with UML**

4.

Abstract: Data transformations are the main subject of visual modeling concerning data warehousing dynamics. A data warehouse integrates several data sources and delivers the processed data to many analytical tools to be used by decision makers. Therefore, these data transformations are everywhere: from data sources to the corporate data warehouse by means of the ETL processes, from the corporate repository to the departmental data marts, and finally from data marts to the analytical applications Data warehousing involves complex processes that transform source data through several stages to deliver suitable information ready to be analyzed. Usually Database designer process and extract the data for their use or according to the business needs. Anyone from the organization can specify the query and get the data related to it from the data warehouse. There may be the case when the database designers or business analysts need to view query flow. In other words, if they want to analyze the flow of query in data warehouse that is how query actually flows from one table to another, they cannot easily visualize it. Though many techniques for visual modeling of data warehouses from the static point of view have been devised, only few attempts have been made to model the data flows involved in a data warehousing process. Besides, each attempt was mainly aimed at a specific application, such as ETL, OLAP, what-if analysis, data mining. Data flows are typically very complex in this domain; for this reason, designers would greatly benefit from a technique for uniformly modeling data warehousing flows for all applications. The visualization of query flow is interactive to the designer and analyst. If the designer have the model to view the internal flow then it will be easy for them to visualize the important data and attribute. UML has an activity diagram which shows the complete and accurate flow actions. So if we have activity diagram to specify the flow. It will be easy to the designers to understand the query.

Keywords: OLTP, OLAP, ETL, data warehouse, data mining.

12-14

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5.

Authors:	**Joseph Peter**
Paper Title:	**Modeling & Torque Ripple Minimization of Switched Reluctance Motor for High Speed Applications**

Abstract: This paper deals with the analysis, study and modeling of the torque ripple minimization setup for the closed loop control of Switched Reluctance Motor.SRM is becoming more and more popular for high speed industrial application environments due to its rugged and robust construction. For low cost, variable speed drives SRM are most widely used. But the torque pulsations in SRM are relatively higher compared to sinusoidal machines due to the doubly salient structure of the motor. Nonlinear inductance profile and pulse magnetizing make the torque ripple unavoidable. Both machine design and electronic control approaches have been used to minimize the torque ripples in SRM. This paper gives an extensive review of the origin of the torque ripple and approaches adopted to minimize the torque ripple.The mathematical modeling of three phase SRM is developed and integrated with different converter topologies in Matlab / Simulink environment along with control methods. The power spectrum density wave forms of torque are studied to verify the simulation results obtained.

Keywords: Switched Reluctance Motor, mathematical modeling & simulation, converter topologies, torque ripple minimization, Power spectrum density.

15-20

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Authors:	**Oguejiofor O. S, Aniedu A. N, Ejiofor H. C, Okolibe A. U**
Paper Title:	**Trilateration Based localization Algorithm for Wireless Sensor Network**

Abstract: A Trilateration based localization algorithm for determining the position of nodes in a wireless sensor network is proposed. Details regarding the implementation of such algorithm are also discussed. Experiments were performed in a testbed area containing anchor and blind nodes deployed in it to characterize the pathloss exponent and to determine the localization error of the algorithm. The pathloss exponent of the testbed area was computed to be n=2.2 where as the algorithm is shown to have localization error of 0.74m which is acceptable because is not much.

6.

Keywords: Algorithm, beacon, pathloss, Trilateration.

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21-27

7.

Authors: **Mahmood T. Yassen, Jawad K. Ali, Ali J. Salim, Seevan F. Abdulkareem, Ali I. Hammoodi, Mohammed R. Hussan**

Paper Title: **A New Compact Slot Antenna for Dual-Band WLAN Applications**

Abstract: The design of a simple two patch slotted antenna with an offset microstrip feed line is presented as a candidate for use in 2.4/5.2 GHz wireless local area network, WLAN, applications. The first patch has been designed as a rectangular shape and the other has been designed as an inverted L shape with a protruding stub. The proposed antenna has been supposed to be printed on an FR4 substrate with a thickness of 0.8 mm and relative permittivity of 4.6. The resulting antenna has been found to have a compact size of 25.75x22 mm2. The antenna offers dual –band characteristics with -10 dB return loss bandwidths of 2.3996 – 2.6309 GHz and 5.1335 – 5.8065 GHz for the lower and the upper resonating bands respectively. This dual-band resonant behavior makes the proposed antenna covering many communication services such as ISM, RFID, WLAN and WiFi applications. Modeling and performance evaluation of the proposed antenna have been carried out using a method of finite integration technique (FIT) based EM simulator, the CST MICROWAVE STUDIO.

Keywords: Compact antennas, Dual band antennas, Slot antennas, Wireless applications, WLAN.

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8.

Authors: **Ameena Tabassum, S. Satheesh, Ch. Ganapathy Reddy**

Paper Title: **Enhancement of Color Images with its RGB Representation using PDE**

Abstract: Image enhancement is important factor for better visual representation. An extension of scalar diffusion-shock filter coupling model is proposed where noisy and blurred images are denoised and sharpened. The proposed method is based on single vectors of gradient magnitude and second derivatives. In this paper we are presenting proposed method by comparing with previous method. The proposed algorithm is more efficient than previous work without creating false colors. The performance of proposed method with previous method is evaluated with parameters such as Mean Structure Similarity Index Measurement (MSSIM) and Peak Signal to Noise Ratio (PSNR).

Keywords: Enhancement, Diffusion, Shock filter, Noise, Blur.

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33-37

9.

Authors: **Neetu B. Yadav, Jayesh A. Shah, Rushabh A. Shah**

Paper Title: **Pervious Concrete: Solution for Low Cost Construction**

Abstract: Pervious concrete is known as No fines, gap graded or porous concrete. This concrete is a mixture of Cement, Corse Aggregate and with or without sand. Pervious concrete has an interconnected pore structure that freely allows the passage of water to flow through. This concrete is being used as paving material to solve or reduce the storm water runoff to the drainage system and minimize water logging problems. This paper covers some of the main properties and major uses of pervious concrete and its ecofriendly benefits. This concrete proves to be very beneficial if it utilize to its full extent in various flat work applications in India.

Keywords: Eco-Friendly, Low Cost Construction, Pervious Concrete, Storm Water Management.

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38-41

Authors: **Abdullah H. Alqahtani, Mohsin Iftikhar**

Paper Title: **TCP/IP Attacks, Defenses and Security Tools**

Abstract: The TCP/IP protocol suite is the foundation of Internet and is ubiquitous in almost all networks worldwide. It was written as a robust protocol, which is able to communicate despite node failures. The design parameters of TCP did not weigh security as important and placed an implicit trust on nodes. The result was a protocol which was reliable and robust, but contained myriad inherent security flaws, open to be exploited by a malicious entity as was amply demonstrated by Morris worm [1] in the early days of what is Internet today. This problem was aggravated by various faulty

10.	implementations of the TCP/IP protocol. Many vulnerabilities and corresponding attacks have been identified targeting TCP/IP protocol suite including spoofing attacks, denial of service attacks, authentication attacks and routing attacks etc. Design flaws of TCP/IP can be mitigated by applying layers of security mechanism in a network. But this application itself is open to exploitation. Various tools have been designed to analyze and identify the presence of such vulnerabilities and avenues of exploitation in TCP/IP suite. We describe the spectrum of attacks against TCP/IP suite and discuss various defense mechanisms and tools like firewalls, intrusion detection systems, protocol analyzers, sniffers and vulnerability scanners etc. We conclude with an analysis of these tools. **Keywords:** Network security, TCP/IP security, security tools, hacking, computer security. **References:** 1. Spafford, Eugene H. The internet worm incident. Springer Berlin Heidelberg, 1989. 2. Braden, Robert. "RFC-1122: Requirements for internet hosts." Request for Comments (1989): 356-363. 3. Barden, R. "RFC 1123: Requirements for InterNet Hosts-Application and Support." InterNet Network Working Group (1989). 4. Deering, Stephen, and Robert Hinden. "Internet protocol." (1998). 5. Chappell, Laura. "Inside the TCP Handshake." NetWare Connection (2000). 6. "Google", online, http://google.com (last accessed on 2 Jun 2013) 7. "Wireshark", online, www.wireshark.org. (last accessed on 25 May 2013) 8. CERT, "CERT Advisory CA-1996-21 TCP SYN Flooding and IP Spoofing Attacks," September 1996. 9. Bellovin, Steven M. "A look back at." Computer Security Applications Conference, 2004. 20th Annual. IEEE, 2004. 10. Tanase, Matthew. "IP spoofing: an introduction." Security Focus 11 (2003). 11. Ferguson, Paul. "Network ingress filtering: Defeating denial of service attacks which employ IP source address spoofing." (2000). 12. Heberlein, L. Todd, and Matt Bishop. "Attack class: Address spoofing."Proceedings of the 19th National Information Systems Security Conference. 1996. 13. Trabelsi, Zouheir, and Khaled Shuaib. "NIS04-4: Man in the Middle Intrusion Detection." Global Telecommunications Conference, 2006. GLOBECOM'06. IEEE. IEEE, 2006. 14. Harris, B., and R. Hunt. "TCP/IP security threats and attack methods."Computer Communications 22.10 (1999): 885-897. 15. Barbir, A., S. Murphy, and Y. Yang. "Generic threats to routing protocols." (2006). 16. Yan, Boru, et al. "Detection and defence of DNS spoofing attack." Jisuanji Gongcheng/ Computer Engineering 32.21 (2006): 130-132. 17. "TCPdump and libpcap", online, http://www.tcpdump.org/"(last accessed on 26 May 2013) 18. "KISMET", online, http://www.kismetwireless.net/ , (last accessed on 25 May 2013) 19. "ETTERCAP", online, http://ettercap.github.io/ettercap/, (last accessed on 25 May 2013) 20. "NESSUS vulnerability scanner", online, http://www.tenable.com/products/nessus (last accessed on 25 May 2013) 21. "Open VAS- Open Vulnerability Assessment System", online, www.openvas.org (last accessed on 25 May 2013). 22. "Core-impact", online, http://www.coresecurity.com/core-impact-pro (last accessed on 25 May 2013). 23. "Retina Network Security Scanner", online, http://www.beyondtrust.com/Products/RetinaNetworkSecurityScanner/ (last accessed 28 May 2013) 24. Roesch, Martin. "Snort-lightweight intrusion detection for networks."Proceedings of the 13th USENIX conference on System administration. 1999. 25. Leach, John, and Gianni Tedesco. "Firestorm network intrusion detection system." Firestorm Documentation (2003). 26. Zaraska, Krzysztof. "Prelude IDS: current state and development perspectives."URL http://www. prelude-ids. org/download/misc/pingwinaria/2003/paper. pdf(2003). 27. Allan, Ant. "Enterasys Networks Dragon Intrusion Detection System (IDS)." (2002). 28. Bro, I. D. S. "Homepage: http://www. bro-ids. org." (2013). 29. "Suricata Intrusion Detection System", online, http://suricata-ids.org/ (last accessed 31 May 2013) 30. Yao, Xiaoyu, and Chen ZHAO. "Research on Implementation and Application of Linux Kernel Firewall Netfilter [J]." Computer Engineering 8 (2003): 042. 31. Reed, D.: IP Filter. Online. http://coombs.anu.edu.au/~avalon/ip-filter.html (Last accessed 31 May 2013) 32. "Nmap", online, http://nmap.org/. (last accessed 1 Jun 2013) 33. "What is netcat?", online, http://netcat.sourceforge.net/, (last accessed 1 Jun 2013) 34. "hping", online, http://www.hping.org/ (last accessed 1 Jun 2013)	**42-47**