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| 1.    | <b>Authors:</b>  | <b>Prerna Yadav, Shubhra Saxena</b>   |          |
|       | <b>Paper Title:</b>  | <b>Performance Analysis of QOS Issues on AODV &amp; OLSR Routing for MANETs Applications using NS-3 Simulator</b> |          |
|       | <p><b>Abstract:</b> Routing protocols are interesting research area in Mobile ad-hoc network. The motivation behind research work is to explain performance evaluation of routing protocol in MANETs. It is quite difficult to determine which routing protocol is best. Each routing protocol has its own advantages and disadvantages. MANET has an open medium, changing its topology dynamically due to these characteristics so it can be accessible both legitimate users and malicious attackers. An ad hoc network is a collection of wireless mobile nodes that forms a temporary network without use of a predefined infrastructure or centralized administration. In this environment it may be necessary for each wireless mobile node to convey other nodes in forwarding a packet to its destination node due to the limited transmission, limited bandwidth and limited battery power of wireless network interfaces. Nodes are connected with each other through a wireless link in ad-hoc network. Each mobile node operates not only as a host but also as a router forwarding packets for other mobile nodes in the network. The nodes are free to join and left the network due to infrastructure less wireless network. Whenever a node in the network is down or leaves the network that causes the link between other nodes is broken. The affected nodes in the network simply request for new routes and new links are established. Routing is playing important role in mobile ad-hoc network (MANETs). Routing is providing paths b/w source and destination by using routing algorithms.</p> <p><b>Keywords:</b> MANET, AODV, OLSR, ZRP (Zone Routing Protocol), CBRP, Packet Delivery Ratio, End to End Delay, Routing Overhead, Packet Loss/Drop, NS – 3 Simulator, Quality of Services Issues</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Boukerche, Performance Evaluation of routing Protocol for AdHoc Wireless Network, Mobile Network and Application,2004.</li> <li>2. M.N Lima, A.L. Dos, Guy Pujoll., A Survey of Survivability in Mobile Ad Hoc Networks. IEEE Communications Surveys and Tutorials, 2009.</li> <li>3. Suresh Kumar, Diwakar Pandey. Traffic pattern based Comparison of Two Reactive Routing Protocols for Ad Hoc Networks. 2009 IEEE International Conference, pages 369-373, 2009.</li> <li>4. Srinivas Sethi, Udgata, Scalable Cluster Based on Ad hoc –on Demand Distance Vector Routing Protocol for MANET, 2010, IEEE.</li> <li>5. Suparana Das Gupta, Soumyabrata Saha, Souvick Ghosh et. al., LORP: Least Overhead Routing Protocol for MANET, In International Conference on Wireless Communication &amp; Sensor Computing, 2010, IEEE.</li> <li>6. N. Adam, M.Y, Ismail, Abdullah, Effect of Node Density on Performances of three MANET routing protocol, In International Conference on Electronic Devices, Systems and Applications, pp.321-325, 2020, IEEE.</li> <li>7. Kamal K. Chouhan, Amit Kumar et. al., Securing on- Demand Source Routing in MANETs, In International Conference on Computer and Network Technology, pp.294-297, 2010, IEEE</li> <li>8. Da Zhang and Chai Kiat Yeo. A novel architecture of intrusion detection system. In Consumer Communications and Networking Conference (CCNC), 2010 7th IEEE, pages 1 –5, jan. 2010</li> <li>9. Mary Anita, Vasudevan, Ashwani, A Certificate based Scheme to defend against worm hole attacks in multicast routing protocol for MANETs, In International Conference on Communication Control and computing Technologies, pp.407-412, 2010, IEEE.</li> <li>10. Jabbehdari, Shamaei et. al., IQos-ODMRP: A Novel routing Protocol Considering Qos Parameter in MANET, In International Symposium on Industrial Electronics and Applications, pp. 126-130, 2010, IEEE</li> <li>11. Mangrulakar and Atique, Trust Based Secured Adhoc on Demand Distance Vector routing protocol for mobile adhoc network, IEEE, 2010.</li> <li>12. Ibrahim, Nesar Ahmad, Salim Beg, Performance Evaluation of TCP Reno and Vegas over different routing protocols for MANETs, In International Symposium on advanced networks and Telecommunication Systems, pp. 82-84, IEEE, 2010.</li> </ol> |   | 1-4      |
| 2.    | <b>Authors:</b>  | <b>Omer Khalil Ahmed</b>  |          |
|       | <b>Paper Title:</b>  | <b>Assessment of Wind speed for Electricity Generation in Makhool Mountain in Iraq</b>                            |          |
|       | <p><b>Abstract:</b> Conventional energy usage has various environments that cause global warming and this effect has forced many countries to use renewable energy resources. Despite the abundance of renewable energy resources in Iraq, the use of solar and wind energy is still in its technological and economic infancy. Makhool mountain is located in north of Iraq. In Iraq, the electric power generated is not enough to meet the power demand of domestic and industrial sectors. The present study deals with the assessment of wind speed for the electricity generation over Makhool mountain (Latitude 35° 7' and Longitude 43°25') in Iraq by analyzing wind speed data during the period (January 2011 –November 2013).Monthly and annual wind speed, power and energy density at 10 m and 50 m above ground level calculated. The annual mean wind speed of Makhool is obtained as 3.87 m/s at 10 m/s and 5.87 m/s at 50 m. It can be seen that the wind is suitable for electricity generation. From the result this site has a great potential for harnessing wind energy. Also, Makhool Mountain is the best site for wind energy in Iraq in comparison with the other sites.</p> <p><b>Keywords:</b> Wind speed, Assessment, Electricity generation, Iraq.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. K. M. Y. Al-ubeidi, “Assessment of Wind speed for Electricity Generation in Technical Institute / Mosul,” Journal of kerala university, vol. 10, no. 3, pp. 228–240, 2012.</li> <li>2. S. K. Salman, “Development of a Prototype Renewable Energy System and its Modification to Suit Middle East Applications,” Iraq J. Electrical and Electronic Engineering, vol. 7, no. 1, pp. 55–59, 2011.</li> <li>3. N. Eskin, H. Artar, and S. Tolun, “Wind energy potential of Gökçeada Island in Turkey,” Renewable and Sustainable Energy Reviews, vol. 12, no. 3, pp. 839–851, Apr. 2008.</li> <li>4. D. A. I. Al-Tmimi, “Graphical and Energy Pattern Factor Methods for Determination of the Weibull Parameters for Ali Algharbie Station, South East of Iraq,” Eng &amp;Tech Journal, vol. 31, no. 1, pp. 98–108, 2013.</li> <li>5. S. S. Dihrab and K. Sopian, “Electricity generation of hybrid PV/wind systems in Iraq,” Renewable Energy, vol. 35, no. 6, pp. 1303–1307,</li> </ol>  |   | 5-10     |

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| 3.                  | <table border="1"> <tr> <td><b>Authors:</b></td> <td><b>Sneha P. Hirkane, N. G. Gore, P. J. Salunke</b></td> </tr> <tr> <td><b>Paper Title:</b></td> <td><b>Ground Improvement Techniques</b></td> </tr> </table>  | <b>Authors:</b> | <b>Sneha P. Hirkane, N. G. Gore, P. J. Salunke</b> | <b>Paper Title:</b> | <b>Ground Improvement Techniques</b>                      |       |
| <b>Authors:</b>     | <b>Sneha P. Hirkane, N. G. Gore, P. J. Salunke</b>   |                 |  |                     |   |       |
| <b>Paper Title:</b> | <b>Ground Improvement Techniques</b>   |                 |  |                     |   |       |
|                     | <p><b>Abstract:</b> Ground Improvement techniques are often used to improve sub soil properties in terms of their bearing capacity, shear strength, settlement characteristics, drainage, etc. These techniques have a wide range of applicability from coarse grained soils to fine grained soils. Depending upon the loading conditions and nature of soil, a suitable technique which is also economical needs to be adopted. This paper gives the concept and theory of a few ground improvement techniques and describes the practical application of these techniques.</p> <p><b>Keywords:</b> Bearing capacity, shear strength, settlement characteristics, drainage, etc.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Hughes, J.M.O. and Withers, N.J.: Reinforcing of soft cohesive soils with stone columns, Ground Engineering, (1974). (7), 3, p 42-49</li> <li>2. Slocombe, B.C., Bell, A.L. and Baez, J.I. The densification of granular soil using Vibroreplacement, Geotechnique, (2000), L. 6, p 715-726</li> <li>3. Hamed Niroudmand, Khairul Anuar Kassim, "Soil improvement by reinforced stone column based on experimental work "EJGE,(2011),16</li> <li>4. V. R. Raju, Y. Hari Krishna. Ground Improvement Techniques for Infrastructure Projects in Malaysia The 12th International Conference of International Association for Computer Methods and Advances in Geomechanics (IACMAG) 1-6 October, 2008 Goa, India</li> <li>5. SinaKazemian, Bujang, B. K. Huat Assessment and Comparison of Grouting and Injection Methods in Geotechnical Engineering European Journal of Scientific Research. (2009), 27, (2)</li> <li>6. Lo, S.R.,Mak,J., 2010 .Geosynthetic-encased stone column in soft clay: a numerical study .geotextiles and geomembrane 28,292-302.</li> <li>7. Dhar, A.S., Siddique, A., Ameen, S.F., (2011). Ground Improvement using Pre-loading with Prefabricated Vertical Drains. International Journal of Geoengineering Case Histories. (2011), 2, (2), pg no 86-104</li> <li>8. Foundation design manual.</li> <li>9. Foundation engineering by S.B. More and S.S. Jahagirdhar Nirali Prakashan.</li> <li>10. IS 15284(part 1):2003,design and construction for Ground improvement guidelines</li> </ol>  | 11-13           |  |                     |   |       |
| 4.                  | <table border="1"> <tr> <td><b>Authors:</b></td> <td><b>Vishal U. Misal, N. G. Gore, P. J. Salunke</b></td> </tr> <tr> <td><b>Paper Title:</b></td> <td><b>Analysis and Design of Prestressed Concrete Girder</b></td> </tr> </table> <p><b>Abstract:</b> In this present study, cost analysis and design of prestressed concrete girder is presented. The aim and objective can be summarized as to analyze and design the concrete girder under a IRC class 70 R loading. To formulate the entire problem for a couple of span under the loading mentioned above to obtain shear force and bending moment at regular intervals along the beam. To use the software STAAD PRO for the analysis and design of prestressed concrete girders. Before using the software for analysis it will be validated by comparing its results with the corresponding classical theory result. To carry out the parametric analysis for prestressed concrete I girder and box girder. To calculate the quantities of concrete and steel required as per the analysis and design carried out for the girders and to carry out the comparative study for the same.</p> <p><b>Keywords:</b> Box girder, Deck slab, I girder, Prestressed concrete.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. X.J. Chen, C.W. Shen and L. J. Jacobs: Prediction of Deflection for Prestressed Concrete Girders ACI materials journal. (1987), 83, (02) pp: 83-91.</li> <li>2. Robert F. Mast f: Lateral Stability of Long Prestressed Concrete Beams PCI Journals (1987), 32, (06) pp 86-107.</li> <li>3. Maewaka T., Ichiki T., Niki, T: Development of Ultra-high Strength Prestressing Strand (1991), 22, (02)</li> <li>4. Husham Almansour, Zoubir Lounis: Structural Performance of Precast Prestressed Bridge Girders Built with Ultra High Performance Concrete PCI Journal, (1993), 38, (4), pp 60-77</li> <li>5. Test and Analytical Approach to PC Grouting Based on Filling Performance (1994), 36, (3)</li> <li>6. Peter Lundqvist, Juha Riihimäki: Testing of five 30-year-old prestressed concrete beams PCI Journals. (1996), 41, (6)</li> <li>7. Enhanced Durability, Quality Control and Monitoring of Electrically Isolated Tendons (1997), 11, (2)</li> <li>8. Santa Maria: Theoretical-Experimental damage determination in prestressed concrete beams (2000), 5, (07)</li> <li>9. Live-Load Distribution Factors In Prestressed Concrete Girder Bridges Journal of Bridge Engineering, (2001), 6, (5).</li> <li>10. T. Patrick Earney: End cracking in pretensioned concrete girder: PCI journals, (2001), 42, (4) pg 102-108</li> <li>11. Chung C. Fu [1], Fellow, and Yi Tang[2]: Torsional Analysis for Prestressed Concrete Multiple Cell Box, Journal of Engineering Mechanics, (2001), 127, (1).</li> <li>12. Byung Hwan Oh, Kwang Soo Kim, and Young Lew: Ultimate Load Behavior of Post-Tensioned Prestressed Concrete Girder Bridge through In-Place Failure Test (2002), 99, (02)</li> <li>13. O.A. Rosenboom and S.H. Rizkalla: Fatigue Behavior of Prestressed Concrete Bridge Girders Strengthened with Various CFRP Systems (2002), 47, (1), pp. 76-93.</li> <li>14. Anchoring of Cables for Single Pylon Extradosed Post-tensioned Concrete Bridge [6]: (2002)</li> <li>15. Gladys Graciela, Cuadros Olave Evaluation of high strength concrete prestressed girder design, (2003), 6, (3)</li> <li>16. Makarand Hastak, Amir Mirmiran, Richard Miller, Ronak Shah, and Reid Castrodale: State of Practice for Positive Moment Connections in Prestressed Concrete Girders Made Continuous Journal of Bridge Engineering, 2003, (8), 5.</li> <li>17. Sabhahit, N and Hegde, Chetan GA: Optimum Design of Prestressed Concrete beam Journal of Structural Engineering, (2004), 31, (3). pp. 167-174.</li> <li>18. Dongning Li; Marc A. Maes; Walter H. Dilger: Thermal design criteria for deep prestressed concrete girders based on data from</li> </ol> | <b>Authors:</b> | <b>Vishal U. Misal, N. G. Gore, P. J. Salunke</b>  | <b>Paper Title:</b> | <b>Analysis and Design of Prestressed Concrete Girder</b> | 14-17 |
| <b>Authors:</b>     | <b>Vishal U. Misal, N. G. Gore, P. J. Salunke</b>  |                 |  |                     |   |       |
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**Authors:** R. B. Meshram

**Paper Title:** Tracking and Formation of Wheeled Mobile Robot Using Fuzzy Logic

**Abstract:** In this paper we propose a formation and motion control strategy for a group of wheeled mobile robot. Construction of perfect mathematical model is extremely complex due to inherent nonlinearities and other difficulties involved in obtaining reliable measurements. The aim of this work is to develop wheeled mobile robots, placed them in a leader follower framework and a motion controller based on Fuzzy Logic. Fuzzy logic gives human being like reasoning behaviour to a machine. It has been proved that fuzzy logic controllers are capable of using information retrieved from experienced human operator more effectively when compared with conventional controllers. The motion controller is designed using Interval type-2 Fuzzy logic. This will provide the robots the possibility to move from the initial to the final position. The simulation has been performed using MATLAB to investigate the performance of the proposed fuzzy controller.

**Keywords:** Wheeled mobile robot, formation, leader-follower, Interval type 2 fuzzy logic, fuzzy controller.

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