

Volume 2 Issue 6, May 2014

International Journal of Inventive

Engineering and Sciences

ISSN : 2319-9598

website: www.ijies.org



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Exploring Innovation: A Key for Dedicated Services

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	Paper Title:	Development of Genetic Algorithm based Neural Network Model for Predicting Workability and Strength of High Performance Concrete	
	<p>Abstract: This paper presents an results of experimental investigation conducted to evaluate the possibilities of adopting Genetic Algorithm (GA) based Artificial Neural Networks (ANN) to predict the workability and strength characteristics of High Performance Concrete (HPC) with different water-binder ratios (0.3, 0.325, 0.35, 0.375, 0.4, 0.425, 0.45, 0.475 & 0.5) and different aggregate binder ratios (2, 2.5 & 3) and different percentage replacement of cement by mineral admixtures such as Flyash, Metakaolin and Silicafume (0, 10, 20 & 30%) as input vectors. The network has been trained with experimental data obtained from laboratory experimentation. The Artificial Neural Network learned the relationship for predicting the Compaction factor, Vee-bee time, Compressive of HPC in 1300 training epochs. The Artificial Neural Network learned the relationship for predicting the Compressive strength, Tensile strength, Flexural strength and Young’s Modulus of HPC in 2000 training epochs. After successful learning the GA based ANN models predicted the workability and strength characteristics satisfying all the constraints with an accuracy of about 95%. The various stages involved in the development of genetic algorithm based neural network models are addressed at length in this paper.</p> <p>Keywords: Artificial Neural Network (ANN), Back Propagation (BP), Genetic Algorithm (GA), Mineral Admixtures (MA), Root Mean Square Error (RMSE). Workability characteristics and Strength Characteristics (SC).</p> <p>References:</p> <ol style="list-style-type: none">1. Cengiz Toklu.Y(2005) Aggregate blending using Genetic algorithms2. Davis L (1991) Hand book of genetic algorithms, (New York: Van No strand Reinhold)3. Hadi. N. (2000). Neural network applications in Concrete Structures, Compute & Struct. 8:373-384. I-Cheng Yeh (1999). Design of High –Performance Concrete Mixture Using Neural Networks and Nonlinear Programming .Journal of Civil Engineering, Vol.13, No.1.5. Jamil.M,ZainM .F.M, Basri .H.B.(2009)Neural Network Simulator Model for Optimization in High Performance Concrete Mix Design .European Journal of Scientific Research Vol.34 No.1, pp.61-686. Jenkins W.M. (1992) Plane frame optimum design environment based on genetic algorithm.7. M. Nehdi, Y. Djebbar and A.Khan, (2001). Neural Network Model for Preformed-Foam Cellular Concrete, ACI Materials Journal,8. Mohammad Iqbal Khan (2012) Predicting properties of high performance concrete containing composite cementitious material using neural networks Automation in construction, volume 22.9. Ni Hong-Guang, Wang Ji-Zong (2000) Prediction of Compressive strength of concrete by neural networks Cement and Concrete research - Cem. Concr. Res.volume 30:1245–1250.10. Noorzaii. J, Wan, S. J. S. Hakim, M. S. Jafarand W. A. M. Thanoon(2007) Development of artificial neural networks for predicting concrete compressive strength of concrete International journal of Engineering and Technology.Vol.4, No.2, 2007, pp. 141-153.11. Prathibha Aggarwal (2011) Prediction of compressive strength of self compacting concrete with fuzzy logics World Academy of Science, Engineering and Technology.12. Rajasekaran, S. and Vijayalakshmi Pai, G. A. (2003). Neural Networks, Fuzzy Logic and Genetic Algorithms, (Prentice Hall of India, New Delhi).13. Rajasekaran. S and R. Amalraj S. Anandkumar (2001). Optimization of mix proportions for high Performance Concrete using cellular genetic algorithms Proceedings of National Seminar on Concrete Technology for 21 Century Annamalaiagar : Annamalai University14. Sanad. A and Saka M.- (2001). C Prediction of Ultimate shear strength of reinforced concrete deep beams using neural networks , M.sc ThJ.Struct.Eng.,127(7),818-828.15. Serio Lai and Mauro. (1997) Concrete Strength Prediction by means of Neural Network Construction and Building Materials Vol11. No. 2, pp:93-9816. Serkan Subasi. D April (2009) Prediction of mechanical properties of cement containing class C fly ash using artificial neural network and regression technique, Academic Journals Vol.4 940 pp.289-29717. Sudarsana Rao. H and Ramesh Babu. B (2007). Hybrid neural network model for the design of beam subjected to bending and shear using Artificial Neural Networks, ACI Materials Journal, Vol.98, No.5, pp. 394-401.18. Sudarsna Rao. H,Vaishali. G and Beulah.(2012) Development of Genetic algorithm based neural network model for predicting workability of high performance concrete Vol.5,International Journal of Advances in Science and Technology19. Tarek Hazey, susan tully, Hesham Marzouk (1998) Prediction A neural network approach for predicting the structural behavior of concrete slabs Canadian journal of Civil engineering, 25(4): 668-667, 10.1139/198-009. Vol.98, No.5, pp. 402-409.20. Yeh. I. (1998). Model of Strength of High Performance Concrete using Neural Networks, Cem Conc. Rec., 28(12):1797 – 808.		
2.	Authors:	Athoub Mousa Khaled Alzuwayed	
	Paper Title:	A Survey of Active Filters	
	<p>Abstract: This paper presents and reviews the response of the low pass, high pass filter, band pass filter and band stop filters. Additionally, it presents and reviews the characteristic of Chebyshev, Butterworth and Bessel and how we implement each circuit then introduce examples for Sallen-Key Low-Pass Filter, Cascaded Low-Pass Filters and Multiple-Feedback Band-Pass Filter.</p> <p>Keywords: Bessel, Butterworth, Chebyshev characteristics, Pass filters.</p> <p>References:</p> <ol style="list-style-type: none">1. L. P. Huelsman and P. E. Allen, Introduction to the Theory and Design of Active Filters,”McGraw Hill, 1980, ISBN: 0-07-030854-3.2. H. Zumbahlen, Passive and Active Filtering,” Analog Devices AN281.3. A. I. Zverev, Handbook of Filter Synthesis, John Wiley, 1967.4. A. B. Williams, Electronic Filter Design Handbook, McGraw-Hill, 1981, ISBN: 0-07-070430-9.5. M. E. Van Valkenburg, Analog Filter Design, Holt, Rinehart & Winston, 19826. A. I. Zverev and H. J. Blinchikoff, Filtering in the Time and Frequency Domain, John Wiley anld Sons, 1976.7. S. Franco, Design with Operational Amplifiers and Analog Integrated Circuits, McGraw-Hill 1988, ISBN: 0-07-021799-8.		

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	Authors: Abbas Najim Salman, Bayda Atiya Khalaf, Haydar Sabeeh Kalash	
	Paper Title: Improved of Stein-Type Estimator of the Variance of Normal Distribution via Shrinkage Estimation	
3.	<p>Abstract: This paper concerned with pre- test single stage shrinkage estimator for estimating the variance (σ^2) of normal distribution $N(\mu, \sigma^2)$, when a prior estimate (σ_0^2) about (σ^2) is available from the past experiences of similar cases as well as the mean is known (say μ_0), by using Stein-type estimator, shrinkage weight factor $k(\cdot)$ and pre-test region R. Expressions for Bias, Mean Squared Error and Relative Efficiency of the proposed estimator are derived. Conclusions and numerical results are presented for Relative Efficiency and Bias Ratio. Comparisons were made with the existing estimators.</p> <p>Keywords: Normal Distribution, Stein-Type Estimator, Single Stage Shrinkage Estimator, Prior Estimate, Bias Ratio, Mean Squared Error and Relative Efficiency.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Al-Hemyari, Z. A. and Al-Joboory, A. N. "Pre-Test Estimator for Variance of Normal Distribution". Pro. 7th, Conf. of Iraqi Statistic. Assoc. [1995]. 2. Al-Juboory, A.N., (2002), "On Shrunk Estimators for the Parameters of Simple Linear Regression Model", Ibn-Al-Haitham J. for Pure and Applied Sciences, 15,(4A), 60-67[2002]. 3. Al-Juboory, A.N., "Pre-Test Single and Double Stage Shrunk Estimators for the Mean of Normal Distribution With Known Variance", Baghdad J. for Science, 7 (4), 1432-1442[2010]. 4. Al-Juboory, A.N." Single and Double Stage Shrunk Estimators for the Variance of Normal Distribution". Journal of Education, AL-Mustansiriyah. University, 2, 597-608[2011]. 5. Al-Juboory, A.N., "Estimate the Reliability Function of Exponential Distribution Via Pre-Test Single Stage Shrinkage Estimator". Accepted to publish, Tikrit of Mathematics and Computer Journal.[2012]. 6. Davis, R. L. and Arnold, J. C. ; "An Efficient Preliminary Test Estimator For The Variance Of Normal Population When The Mean is Unknown". Biometrika, 57, 674-677 [1970]. 7. Hirano, N., "Some Properties of An Estimator for the Variance of a Normal Distribution ". Ann. Inst. Statistic. Math., 25: 479-492 [1974]. 8. Pandey, B. N. "On Shrinkage Estimation of Normal Population Variance". Comm. Statis. Theor. Meth., 4,A8, 359-345 [1979]. 9. Pandey, B. N. and Singh, J. "Estimation of Variance of Normal Population Using Prior Information". J. Ind. Statist. Assoc., 15, 141-150 [1977]. 10. Singh, H. P. and Saxena, S." A class of Shrinkage Estimators for Variance of a Normal Population". Brazilian Journal of Probability and Statistics, 17, 41-56[2003]. 11. Stein, C., "In Admissibility of The Usual Estimator For The Variance of A Normal Distribution With Unknown Mean". Ann. Inst. Statist. Math. 16, 155-160. [1964]. 12. Thompson, J. R., "Some Shrinkage Techniques For Estimating The Mean". J. Amer. Statist. Assoc., 63, 113-122 [1968]. 	14-17