Brain Emotional Learning Intelligent Controller Based Pitch Control of Helicopter

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Abstract

The pitch angle control of helicopter is important to tackle the instability near hovering trim. This paper presents the use of Brain Emotional Learning Based Intelligent Controller (BELBIC) for pitch angle control of single rotor helicopter. BELBIC is based on emotional learning behavior of human. To observe the effectiveness of BELBIC, PID controller is also developed for controlling the pitch angle of helicopter. The controller implementation is done in MATLAB and Simulink. The simulation results show that BELBIC controller performed well as compared to the conventional PID controller for helicopter pitch angle control.

Keywords— Helicopter; instability; pitch angle control; BELBIC; PID.

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Effects of Socioeconomic Factors on House hold Waste Generation

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Abstract

The rate of solid waste generation in the society is increasing with technological development, increasing population and changes in life style of people where households play an important role. Estimation of solid waste generation rates can be helpful in assessing the environmental quality. The social changes in any area actually influence the characteristics, size and structure of household. In this paper an attempt has been made to assess the affect of various socioeconomic factors on the solid waste generation in Patiala city of Punjab (India). The data was collected with the use of structured questionnaire with respect to these factors in the city. The waste generation was determined by using door to door approach in 1% households in 50 municipal wards of the city. The independent variables were education, occupation, age, income, family size, availability of municipality services and institute for waste management in the city and dependent variable was waste generation. The data collected were analysed statistically to obtain the relationship between independent variables and dependent variables. Chi-square test has been applied to determine whether the two variables are associated with each other or not. In order to determine the nature and strength of relationship between two variables, the coefficient of correlation has been applied. The results showed that the generation of waste of Patiala city was significantly affected by monthly income of household and average family size of the household.

Keywords: Solid waste generation, socioeconomic factors, SPSS, household survey, waste management.

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Review of Applications of Fly ash based Geopolymer Concrete

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Abstract:

The demand of concrete is increasing day by day for satisfying the need of infrastructure development. The cement is the base material of the concrete. Production of OPC not only consumes significant amount of natural resources and energy but also releases substantial quantity of carbon dioxide to the atmosphere. Therefore, it is necessary to find out alternate material to make concrete environment friendly. Geopolymer concrete is produced without using Portland cement. This type of concrete has environmental benefits as it has very low greenhouse gas emissions as compared to the production of Portland cement. In addition, GPC also utilizes the abundantly available materials such as fly ash, rice husk, GGBS, WPS ash that are waste by-products. In this wa, GPC is an eco

friendly material. The paper reviews the previous researches and ongoing attempts in the field of Geopolymer concrete along with its applications in the civil engineering. In Geopolymer concrete, low-calcium fly ash is used as the source material; and alkaline solution and aggregates are used same as in Ordinary Portland Cement concrete.

Keywords: *Geopolymer, Fly ash, Alkaline activator, Compressive Strength, Ambient Temperature, Type of curing.*

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Building Institute's Culture and Values to Facilitate Excellent High Performing Institution

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Abstract

Human values and soft skills are very affected in many institutes. Many fixed- mindset CEOs of the engineering institutes do not adopt positive work culture and high values, and fail to build excellent high performing institutes. Even though, many of the autonomous institutes are aided by various centrally funded projects, they fail to contribute to the knowledge development and human capital development due to closed-mind CEOs. A snap study reveals that many CEOs with ego-driven culture foster fixed mindsets. This not only brought their own down fall, but also that of the institutes they were leading. An organizational transformation has to be undertaken by collecting the feedback from the faculty and remedial measures are to be undertaken by the Board of Governors. The CEOs have to build high performing faculty community, encourage meta-learning skills, assist the faculty members to learn from the projects and develop a growth mindset. CEOs have to prepare the faculty members for high level competencies that would be demanded by the fast growing technologies needed by the industries.

Keywords: culture, mindset, high performing teams, institutional building.

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A Review on Fibre Reinforced Concrete

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Abstract

Concrete is one of the world most widely used construction material. But it has been known that concrete is weak in tension. Weak tensile strength combined with brittle behavior result in sudden tensile failure without warning. This is obviously not desirable for any construction material. Thus, concrete requires some form of tensile reinforcement to compensate its brittle behavior and improve its tensile strength and strain capacity to be used in structural applications. Historically, steel has been used as the material of choice for tensile reinforcement in concrete. Unlike conventional reinforcing bars, which are specifically designed and placed in the tensile zone of the concrete member, fibers are thin, short and distributed randomly throughout the concrete member. Fibers are commercially available and manufactured from steel, plastic, glass and other natural materials. Steel fibers can be defined as discrete, short length of steel having ratio of its length to diameter (i.e. aspect ratio) in the range of 20 to 100 with any of the several cross-sections, and that are sufficiently small to be easily and randomly dispersed in fresh concrete mix using conventional mixing procedure. The random distribution results in a loss of efficiency as compared to conventional rebars, but the closely spaced fibers improve toughness and tensile properties of concrete and help to control cracking. In many situations it is prudent to combine fiber reinforcement with conventional steel reinforcement to improve performance. Fibre Reinforced Concrete (FRC) is defined as a composite material essentially consisting of conventional concrete or mortar reinforced by the random dispersal of short, discontinuous, and discrete fine fibers of specific geometry. In past years, considerable works has been performed on concrete using steel fibres to increase the fresh as well as hardened properties. Fibres substantially reduce the brittleness of concrete and improve its engineering properties, such as tensile, flexural, impact resistance, fatigue, load bearing capacity after cracking and toughness. This Paper gives a review of research performed on Steel Fibre reinforced concrete.

Keywords: Self compacting concrete, steel fibres, compressive strength, tensile strength, flexural strength.

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Enhancement of Accuracy Rate in Face Recognition using Hybrid Technology

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Abstract

Artificial Intelligence (AI) is used for recognition of facial expression. It provides the understanding of facial gesture due to the ability to take the decision as per human brain. Presently, it has still a challenging problem in many applications. To make an intelligent behavior in computer system various approaches, methods, algorithms, toolboxes are used. In present investigation, singular value decomposition (SVD) is used for feature extraction. Neural network and fuzzy are used to generate the value of TRANS and EMIS. TRANS and EMIS will act as input to the Hidden Markov Model (HMM) to improve the performance of face recognition. An effort is made to combine these technologies to improve the better accuracy rate in comparison of other existing techniques such as Eigen-faces, traditional HMM, neural network etc. The AT&T database is used for face examination that contains 400 face images. 40 individual person's faces are considered with 10 different facial expressions for each. The facial images are stored as a numerical set of sequence in which 200 face images used for training and 200 faces used for testing purpose providing 96.5% accuracy rate for matching face images.

Keywords: Face Recognition, SVD, Neural Network, Fuzzy Rules and HMM.

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Analysis of Individual Perception of Investors on Investment Alternates: An Empirical Study

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Abstract

The word 'investment" has many interpretations as it means different things to different persons. For a person who has lent money to another, it may be an investment for a return. Similarly, if a person purchases shares of a company, bullion or real estate for the purpose of price appreciation, an investment for him. Likewise, an insurance plan or a pension plan is an investment to its purchaser. It is clear that investment is a commitment of funds for earnings additional income. In other words, investment is considered the sacrifice of certain present value of money for some uncertain future value. Financial investment means employment of funds in the form of assets with the objects of earning additional income or appreciation in the value of investment in future. Assets which are the subject matter of investment may be varying between safe and risky ones. Certain investment like bank deposits, post office savings, PPF, company deposits, life insurance, mutual fund, chit fund and real estate and so on, yield only income. If the investments are in the form of assets such as shares in companies, land and buildings and the like, they record capital appreciation. Investments in the government securities listed on a recognized stock exchange are easily transferable and marketable. Some investments whose values fluctuate widely and whose returns are uncertain are regarded as risky investments. Marketable securities are expected to yield income in the form of interest or dividend along with appreciation in their values. This study investigates the nature of investment and how it is influence by the investor's perception. The study also takes into account the association between various variables i.e. age, income, education, profession, risk factor, etc. for investing in various investment alternates available in market.

Key words: *Investors/ Investment/ Perception.*

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Retrofitting for Water Efficiency by using Efficient Fixtures

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Abstract

The "Water availability", it cannot be taken for granted, yet often is! However, increasing scarcity and uncertainty must be reconciled with intensifying expectations for quality of life and of the environment, and affordable supplies. To combat these situations, the term water efficiency was coined which aims at using water in a smart and sustainable manner. Water efficiency makes better social, environmental, and economic sense. And because of latest technological advancements, recent changes to building regulations, environmental awareness and delivering better lifetime value, there have been constructive improvements to water efficiency standards. Retrofitting water efficiency in existing buildings however, can be more challenging due to uncertainties about the cost-benefits of certain technologies, existing building systems and products, existing and anticipated user response and engagement etc. But this will be a step towards making a building Green! This paper will present case study on assessment and evaluation of retrofitting for an Institute along with the procedural approach to determine the water saving potential and cost estimation of these water efficiency retrofits.

Keywords: Efficient fixtures, retrofits, gpf, gpm, drop to watts, faucets, and closets.

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Measurement of Product and Service dimensions of Quality in Higher Education Institutes

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Abstract

The globalization of education, student's migration from one country to another, multiple demands from education industry, increased accountability of teachers to its stakeholders and changing perception of students are causes for concerns to educationists. The use of new teaching and learning methodologies, changing patterns of education delivery, course content and quality has become an essential component of the educational process for its success. Many educators believe that most of the principles of TQM, as developed by an American W. Edwards Deming., can be implemented in education and training because quality of higher education is everybody's concern today. Various government and other constitutional agencies are taking necessary measures to provide value based practical education to the youth. Most of the institutions, management and teachers are claiming that they are working in this direction and are taking proactive initiatives to implement TQM in higher education. But are the main customers (students) of higher education institutes really satisfied with the quality of education and the services which these institutions are providing. This paper highlights the essence of TQM in higher education and measures the student's perception of product and service dimensions of quality in Institutes providing higher education.

Keywords: Higher education institutes, Total Quality Management, Product quality dimensions, Service quality dimensions.

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