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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
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Judul Jurnal Ilmiah (Artikel)	:	Analysis of Rigid Body Dynamic Excavator Crane Arm for Safety use in Mining and Infrastructure Industries using Ansys 16.2		
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		Alamat Artikel	:	https://irjiet.com/common_src/article_file/1595306018_05f7c3be42_4_irjiet.pdf
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Semarang, Juli 2020

Reviewer 2

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Unit Kerja : Teknik Mesin FT UNDIP

Reviewer 1

Dr. Agus Suprihanto, S.T, M.T.
NIP. 197108181997021001
Unit Kerja : Teknik Mesin FT UNDIP

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4. **Kelengkapan unsur dan kualitas terbitan:**
   Gambar-gambar untuk hasil Stress Analysis masih kurang "Clear"

Semarang, Juli 2020
Reviewer 1

Dr. Agus Suprihanto, S.T, M.T.
NIP. 197108181997021001
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Semarang, Juli 2020
Reviewer 2

Rusnaldy, S.T., M.T., Ph.D.
NIP. 197005201999031002
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Analysis of Rigid Body Dynamic Excavator Crane Arm for Safety use in Mining and Infrastructure Industries using Ansys 16.2

SH Suryo - 2017 - irjiet.com

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Finite-State Vector Quantization Techniques for Image Compression

(Volume-4/Issue-7-July-2020/Finite-State-Vector-Quantization-Techniques-for-Image-Compression/237)

Srijati Agrawal

Volume 4, Issue 7, July, PP 1-8

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Ireland

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Exploring a Social Learning Perspective on Computer Forensics Barriers and Factors Affecting Cybercrime Investigation in Kenya

(Volume-4/Issue-7-July-2020/Exploring-a-Social-Learning-Perspective-on-Computer-Forensics-Barriers-and-Factors-Affecting-Cybercrime-Investigation-in-Kenya/238)

Josephine Akinyi Odoyo Silvance Abeka Samuel Liyala

Volume 4, Issue 7, July, PP 9-13

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Kenya

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The Multiplication Operation of Two Continued Fractions with Positive Non Integer Numerators

(Volume-4/Issue-7-July-2020/The-Multiplication-Operation-of-Two-Continued-Fractions-with-Positive-Non-Integer-Numerators/240)

Fatima F. Abdullah Souad I. Mugassabi

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Analysis of Rigid Body Dynamic Excavator Crane Arm for Safety use in Mining and Infrastructure Industries using Ansys 16.2

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Sumar Hadi Suryo

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Technical Feasibility of Wind Energy in Morocco through a Potential Analysis, Case Study

(Volume-4/Issue-7-July-2020/Technical-Feasibility-of-Wind-Energy-in-Morocco-through-a-Potential-Analysis-Case-Study/242)

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High Density Poly Ethylene Nylon Netting in Runner Beans (Phaseolus vulgaris) Improve the Quality & Quantity of Fruits under Rain Fed up Land Farming Situation

(Volume-4/Issue-7-July-2020/High-Density-Poly-Ethylene-Nylon-Netting-in-Runner-Beans-Phaseolus-vulgaris-Improve-the-Quality-Quantity-of-Fruits-under-Rain-Fed-up-Land-Farming-Situation/243)

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Creating Designs to Improve Consumer's Awareness and Purchasing Behavior towards Ethical Fashion

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Olfat Shawki Mohamed Mansour

Volume 4, Issue 7, July, PP 40-52

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Analysis of Rigid Body Dynamic Excavator Crane Arm for Safety use in Mining and Infrastructure Industries using Ansys 16.2

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***Abstract* - Excavators are one of the heavy equipment that is often used in the mining industry and infrastructure that can do work such as lifting the ground, digging and lifting other heavy objects using its bucket of teeth, making a quarry and moving objects into the tub. Excavators are widely utilized in the mining industry and infrastructure. In this research, it contains the design and analysis of the product of the crane arm excavator which has the form of adoption of catterpillar excavator. Test process conducted using software simulation Ansys 16.2 with Rigid Dynamic project, which is a total deformation test that occurs in crane arm excavator. At the time of analysis is given a joint load on four components that relate one rotation and four others move the rotation. In the components that are rotated rotation is given the limit -300, in the Translansi section is given a boundary -70 mm upper, -80 mm lower and-100 mm in the central part of the crane arm excavator model. A maximum deformation of 982.17 mm is generated and the minimum value generated in the test is 0 mm.**

Keywords: Crane Arm Excavator, Rigid Dynamic, Total Deformation.

I. INTRODUCTION

Indonesia is a country that is rich in natural resources from Sabang to Merauke on every side of Indonesia, the abundant wealth of natural resources is above and below the Earth Indonesia. The natural resources can then be in the realization of the sila to five of the Pancasila, namely welfare in the people of Indonesia. Basically, development in the field of mining and energy is an effort from the process of the development of mineral and energy resources owned by the Indonesian state and the Indonesian people for use properly and on the target on the side also pay attention to the security of the workers. Indonesia's tropical rainforest is where flora and fauna grow, forming a life of almost dynamic balance (Heryanto, 2012). Supporting conditions, Indonesia is one of the largest commodity-mining countries in the world. In 2020 the government targeted 155 million tons of its production targets of 550 million tons of coal production (Kompas, Adi 19-01-2020).

Infrastructure acts as a vital part of the driving growth of the country and society in general, and infrastructure is seen as a locomotive of national and regional development. The infrastructure project in Indonesia has recently been one of the visions of the Indonesian government, as an example of a toll road that has been connected from Jakarta to the tip of Java Island. Some areas that are also the center of government attention is the tourist areas that are located from the island of Sumatra to Papua including Labuan Bajo, Borobudur, Circuit Mandalika and others (Hadimuljono, 2020). A wide variety of functions that Government should do such as the law enforcement, but development is also part of the main function that must be done by the Government to launch all the economic progress of the community aimed at lowering the level of poverty. Quite a lot and the magnitude of the development role, in a study conducted in the United States (Aschauer, 1989 and Munnel, 1990) showed the return level of investment in the field of infrastructure very quickly reached 60% (Suyono Dikun, 2003). When viewed on the concept of development, it is part of the utilization of natural resources, relationships and education for the community. From this point of view, development is considered a technique of utilization of resources that exist is in the public hands, such as natural resources, energy resources, sources of funds and human resources.

The level of growth that differs from each region raises new problems in the field of infrastructure that causes the difference of service that exists in each region. Therefore, the infrastructure needed to be developed and expected by the development is able to provide a description of infrastructure needs (Ariastita and Prasista, 2013). Mining and infrastructure is an industry that has a considerable role in Indonesia, the development of infrastructure that is done by governments and mining world also increasingly shows positive value from year to year. The positive results of these two industries make the need for supporting tools also greater, as a result the manufacturing industry also gets a positive scan of it. Tools of supporting the mining industry and infrastructure as a magnet

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Finite-State Vector Quantization Techniques for Image Compression

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***Abstract* - Different techniques of Finite-State Vector Quantization, in the image coding framework are investigated in this paper. Introduced in this paper are two FSVQ designs, conventional vector quantization and side-match vector quantization. Convention Vector Quantization divides an image into K-dimensional blocks where each vector x is mapped to its corresponding code vector from a codebook of size N. It exploits the correlation between adjacent pixels within a block of pixels. The encoder of a vector quantizer uses the previously encoded blocks to make a selection from a family of codebooks. Although vector quantization provides an acceptable visual quality of the compressed image, it does it at the cost of increased bit rate. The Side Match Vector Quantization reduces the bit rate required for storage and transmission of the image and provides a good visual quality image. SMVQ requires creating its own state codebook for each block for encoding as well as decoding. SMVQ takes advantage of the spatial contiguity of pixel vectors by exploiting the correlations of the nearest neighboring blocks. They try to minimize the granular noise that causes the annoying effect of visible pixel block boundaries in conventional VQ. Since the conventional method for the generation of state codebook for SMVQ is time consuming, the method of rapid generation of state codebook proposes a fast method for codebook generation.**

In this paper, different image compression techniques of vector quantization, side-match vector quantization and rapid generation of state codebook method will be implemented to evaluate the best possible method. Although each technique is an improvement over the other, the proposed method for rapid generation of state codebook is faster than the others and without any loss of perpetual visual quality. The Linde-Buzo-Gray algorithm, also known as LBG algorithm, is used for the generation of codebooks.

Keywords: vector quantization, side-match vector quantization, LBG algorithm, Rapid generation of state codebook, code book, state-codebook, codewords.

I. INTRODUCTION

Images are an important and popular form of media. Image compression is the process of compressing digital images to reduce the cost of their storage and transmission. Image compression techniques can be classified into two categories: lossless and lossy image compression techniques. Lossless image compression techniques involve no loss of information. In lossy compression techniques, some loss of information is involved, and data that have been compressed using lossy techniques generally cannot be recovered or reconstructed exactly. Because of its high compression rate, lossy image compression techniques have been widely used in image compression. Among the lossy data compression techniques, vector quantization (VQ) is one of the most popular data compression techniques.

Vector Quantization is a simple technique used for compression in the field of image and video processing. Side Match Vector Quantization is also a technique of vector quantization which exploits the correlations between the borders of two neighboring blocks to reduce the bitrate of compressed image. The image to be encoded is first partitioned into non-overlapping rectangular blocks of size 4x4(16-dimentional). VQ can be defined as a mapping from k-dimentional Eucledian space into a finite subset C of R^k, where C=$\{c_i \mid i= 1,2,\ldots\ldots,N\}$. Here, C is called the codebook of the vector quantizer, c_i is the codeword or code vector and N is the size of the codebook.

In vector quantization, the coder has two parts: an encoder and a decoder. The encoder assigns each input vector x, to an index i, in the codebook C. The decoder finds the transmitted index i. The distortion is calculated by finding the Eucledian distance between each pixel in x and corresponding pixel in ci and summing over the square of all these distances. The formula is as follows:

$$d(x,y_i) = \|x\text{-}c_i\|^2 = \sum_{j=0}^{k-1}\left(x_j - c_{ij}\right)^2$$

A training set (TS) is used to generate a variety of different sized codebooks. It is a large array of vectors. Images generally used for creating the training set are as follows:

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Technical Feasibility of Wind Energy in Morocco through a Potential Analysis, Case Study

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***Abstract* - This article studies the wind energy potential in the Taroudannt province by means of 09-years (2010-2018) wind speed data at 10 m altitude of wind energy using two-parameter Weibull distribution in Morocco, in order to develop this desert area which suffers from long dry seasons and poorly developed energy resources. The results provided the opportunity to implement and develop the urban wind energy sector in the Taroudannt province. The mean monthly wind speed and power density were calculated. Compared to other technologies, considered for their reasonable cost, the EWT DW 52 - 500kW - 50m wind turbine offered the best capacity factor of 13.81% and the best energy production more than 785 MWh. After analyzing the generation of wind energy, the province of Taroudannt must install wind turbines with a high blade height of more than 50 m in order to achieve an efficient harvest.**

Keywords: Wind speed, Weibull distribution, Weibull parameters, Wind turbines, Taroudannt province.

I. INTRODUCTION

Wind energy is anticipated to play a crucial role in the future energy supply of the world. In 2020, worldwide, wind energy will provide a significant amount of electricity - around 16%, according to predictions by the World Wind Energy Council [1]. The development of renewable energies is a priority worldwide, which will make it possible to comply with international climate agreements and meet the growing demand for energy. GWEC reports that Africa and the Middle East installed 962 MW of wind capacity in 2018. Prediction data from the "Global Wind Report" projects that an additional capacity of 6.5 GW will be added by 2023. According to the World Wind Energy Council, the three main markets in Africa and the Middle East in 2018 are:

- Egypt, with a wind capacity of 380MW;
- Kenya, with a wind capacity of 310MW;
- Morocco, with a wind capacity of 120MW.

However, Morocco is the African country which has the most wind projects under construction.

Taroudannt is a town in the southern Moroccan region of Souss-Massa. It is the capital of Taroudannt province and recorded a population of 80149. In the Souss Massa region, the poverty rate in rural areas is estimated at 9.8 %, slightly close to the national average (9.5 %), while in urban areas, this indicator is 2.7 % versus a national average of (1.6 %). Provincially, the poorest province is Tata (17.01 %), followed by Taroudannt (9.65 %) and Tiznit (6.13 %) [2]. The causes of this poverty are multiple. Among these causes, a large part is due to the African bioclimatic environment and the absence of investment in the energy sector. The Abdelmoumen (Initiated in 1990) is a dam on the Massa river, in the Aoulouz (80 Km from Taroudannt), in Morocco [3]. Long periods of drought or dry season in Morocco, give rise to seasonal rivers. Consequently, the energy production of these dams is generally very low during the dry season, which forces some large communities to spend days without electricity [4].

Our objective in this study is contribute to the energy sector by identifying potential renewable energy sources probable to add significant megawatts to the national grid. This will go an extended approach in making electrical energy available in poor areas like Taroudannt province. Morocco has one of the largest wind fields in Africa and is still far from being fully exploited. Assessing the wind potential of a site is a key step before building a wind farm to estimate future electricity production. The assessment of the potential is based on the wind measurements on the site considered. This step is essential because in situ measurement is the only way to correctly assess the wind fairly accurately. The Weibull distribution has quickly established itself for wind power applications since the late 1970s [5] until it is now widely used by industry and is the only distribution implemented in all wind software. Many other distributions have been proposed and used to represent wind statistics 2009 [6]. Historically it has been modeled in particular by the lognormal, Gamma, Beta distributions, but that of Weibull has been considered more suitable and has become generalized. The Rayleigh distribution has also been used alongside the Weibull, especially in cases where it was easier to have a single parameter, but it is less flexible than the Weibull, therefore less efficient, and has given way to the Weibull.

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Creating Designs to Improve Consumer's Awareness and Purchasing Behavior towards Ethical Fashion

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Abstract **- Apparel industry has a crucial impact on environment. In order to fight against these environmental impacts, there is a substantial development of the ethical fashion. There is a wide variety of ethical issues affecting the fashion industry and the consumer. Consumers' concerns and beliefs about, knowledge and support for ethical issues can effectively enhance their reception of ethical fashion and shape their purchase behavior. This research aims to improve the consumers' awareness and change his purchasing behavior to be more ethically, through creating printing designs which reflect the ethical fashion values and concepts on proper T-shirts for women. To investigate the influence of these designs, the researcher designed a questionnaire which has been conducted with women (18- 30 years). Results indicate that questionnaire Items were positive with an overall mean score of 4.88 (% of mean = 97.6%). The majority of respondents agreed to with 11 T-shirts.**

Keywords: Ethical fashion, sustainability, consumerism, ethical awareness, purchasing behavior.

I. INTRODUCTION

Nowadays, one can observe that there is a global growth of people's concerns regarding the environment. Individuals recognize the need to act differently in a world that suffers from the overconsumption of the human beings [1]. Consumers are increasingly becoming aware that their consumption is integral part of the global political and economic system [2]. It is important for companies to take notice of shifting consumer behavior, which often derives from ethical concerns [3].

Fashion industry has been subject to pivotal trends over the last two to three decades. The industry has evolved into a complex, fragmented, global system which at its very core is based on the notion of continual consumption of the 'new' and the discard of the 'old'. The emergence of the 'fast fashion' business model has increased the introduction of trends leading to premature product replacement and fashion obsolescence. It also has major negative environmental and social impacts, particularly on those at the bottom of the supply chain. [4]&[5]

The fashion industry has been increasingly under the spotlight as a significant contributor to global environmental and social issues. Life-cycle assessment is a standard tool used to investigate the environmental impacts of all stages of a product's life [6] from raw materials through to design, manufacture, packaging, logistics, consumer use and post-use disposal. [7]

The ever-increasing temptation of cheap and fashionable clothing creates a deep contradiction between consumers' concerns for sustainability and their purchase behavior in the clothing industry. [8] A socially conscious consumer considers his or her purchasing consequences to achieve social change and take into account sustainability arguments. Consumers that predominantly consider product information in relation to environmental sustainable action are therefore identified as being strongly motivated by environmental values. [9]

Consumers must taking into account environmental and social sustainable values. Ethical consumers are more likely to judge organizations in assessing their ethical preferences before purchase. [10]

1.1 Ethical Fashion Definition

According to Joergens [11] ethical fashion is defined as "fashionable clothes that incorporate fair trade principles with sweatshop free labour conditions while not harming the environment or workers by using biodegradable and organic cotton". Ethical fashion may be also understood as "fashion with conscience".

Another definition is provided by the Ethical Fashion Forum: "ethical fashion represents an approach to the design, sourcing and manufacture of clothing which maximizes benefits to people and communities while minimizing impact on the environment" [12].

Ethical fashion refers to clothing that is designed for long lifetime use that is produced in an ethical production system,

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Exploring a Social Learning Perspective on Computer Forensics Barriers and Factors Affecting Cybercrime Investigation in Kenya

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***Abstract* - As Kenya matures into an information society, she is exposed to various cyber threats and challenges resulting from the ubiquity of the internet and advancement of technology. Social engineering tricks have been applied to exploit vulnerabilities in people, processes and technologies used in varied environments. On the other hand, computer forensics development plays catch up with the rising challenges within the field especially on the levels of expertise. Social learning brings the element of gaining cultural knowledge, skills, attitudes, strategies, rules and beliefs through observing others. To determine the need for a proactive means of overcoming the ever challenging cybercrime, a Social Learning perspective into the development of standardized procedures in legislation, investigation processes, certification and training of cybercrime investigators is explored, so computer forensics can become a more effective and mature field in curbing cybercrime investigation barriers, especially in predicting and understanding of cybercriminals' behavior.**

Keywords: Social Learning Theory, Information Society, Computer Forensics, Cybercrime Investigation, Cybercriminal Behaviour.

I. INTRODUCTION

Often times, the Internet is regarded to have a great impact on cybercrime given the opportunities it presents. However, clarity on the issue at hand despite the various factors leading to the increase in cybercrime has been lacking. This is in assessing the exact thing about cyber that is new, given that what are termed as "traditional crimes" are more or less the same crimes committed online, only through a different platform. It is more confusing when it comes to the gap that is between estimated hundreds of thousands of incidents and the relatively small number of successfully known prosecutions [1]. The confusion caused by Cybercrime has in fact led some authors to question whether it can be best understood through existing theories or if it is a crime category in need of a new theory [1]. Jaishankar [2] even developed the Space Transition Theory that explains the causation of cyberspace crimes as an effort to further the cyber criminology discipline. This is because he felt the need for separate cybercrime theories as explanations in the general theories was found to be inadequate. Notably, theoretical perspectives need to be built in an attempt to determine deviant behavior and attitudes of investigators towards controlling cybercrime. Though theoretical theories within computer forensics are being worked on by researchers, cybercrime practitioners deal with entirely new sets of challenges [3].

II. COMPUTER FORENSICS AND CYBERCRIME EVOLUTION

In the mid-1940s, computers were introduced. Rapid development of computers was soon followed by a series of various computer offences. Even though numerous offenses happened, many went unreported, or prosecuted, or even unknown to the large public [4]. The 1970s and 1980s saw the rise of personal computers. This became common as individuals and businesses took on using computers on a regular basis. This led to awareness of Cybercrime by law enforcement agencies in technologically advanced countries by the 1990s. Systems were put in place for investigation and prosecution activities, giving birth to Computer Forensics. From as early as 1984, FBI laboratory in the US and other law enforcement agencies developed programs to assist in the examination of computer Evidence. This majorly was to address demands of investigators and prosecutors that were growing. The goal being to address these demands in a programmatic and structured manner leading to the establishment of Computer Analysis Response Team, CART [5].

Looking through the past number of years Computer Forensics has grown, increasingly becoming a technique of identifying, solving, documenting and enabling the prosecution of computer or cybercrimes. From the 1960s to date, Computer Forensics has transitioned from a time when it lacked a proper structure, clear goals, adequate tools, processes and procedures, to a time where we have proper structures, accepted procedures, and special tools developed to

