Innovative and Reliable Information Technology for a Sustainable World

BOOK OF ABSTRACTS

November 17 - 20, 2013
Porto, Portugal

Innovative and Reliable Information Technology for a Sustainable World

Edited by
Claudio da Rocha Brito
Melany M. Ciampi

Science and Education
Research Council

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Message from the General Chair

It is my great honor as the General Chair to welcome you to the **WCSEIT'2013 - World Congress on Systems Engineering and Information Technology**, a congress that is the result of the initiative of scientists engaged with the system engineering and information technology, which are so important for the present world once they help to face challenges and demands of today's business environments.

The chosen theme of the congress **Innovative and Reliable Information Technology for a Sustainable World** shows the present moment of business, which competitiveness is reaching high levels in a global scale.

The congress is an opportunity to share novel research ideas as well as practical applications in the area of system engineering and information technology, which permeate all aspects of modern life and so it has become important for business, to solve financial and raise productivity, for organizational cultures management among others.

The **WCSEIT'2013 - World Congress on Systems Engineering and Information Technology** is organized by **COPEC – Science and Education Research Council** and promoted by **WCSEIT - World Council on Systems Engineering and Information Technology** in Technical Cooperation (in alphabetical order): AAMP (Fishing Museum Friends Society), ABENGE (Brazilian Society for Engineering Education), AENUI (Asociación de Enseñantes Universitarios de la Informática), ASEE (American Society for Engineering Education), ASIBEI (Ibero-American Association of Engineering Education Institutions), GCMM (Global Congress on Manufacturing and Management), IEEE-Ed.Soc. (Education Society of the Institute of Electrical and Electronics Engineers), IFEES (International Federation of Engineering Education Societies), IGIP (Internationale Gesellschaft für Ingenieurpädagogik), INTERTECH (International Council for Engineering and Technology Education); ISTEC (Ibero-American Science & Technology Education Consortium), Porto Gente (PortFolk), RBE (Brazilian Network of Engineering), RCI (Réseau Carthagène d'Ingénierie), SBA (Brazilian Automation Society), SEFI (Société Européenne pour la Formation des Ingénieurs), SHERO (Safety, Health and Environment Research Organization), SPEE (Portuguese Society for Engineering Education), SPEED (Student Platform for Engineering Education Development) and WCCA (World Council on Communication and Arts) and Cultural Cooperation of Mais Brasil Association and General Consulate of Brazil in Porto.

I have to thank in special our sponsors FAPESP (State of São Paulo Research Foundation), CNPq (National Council for Scientific and Technological Development), CAPES (Coordination for Improvement of Personnel of Superior Level) and SUPNET - Technology & Information.

This year **WCSEIT** is hosted by the **OERN - Ordem dos Engenheiros - Região Norte**, which is a prominent organization in Portugal and I am sure every participant will find some time to enjoy Porto a historical and vibrant city and its surroundings.

I would like to take this opportunity to thank all of our local organizing committee members for their great job, support and consistent effort to make this conference a success, in special to the President Eng. Fernando de Almeida Santos, Eng. Guilherme Teodoro Büest, Eng. Ricardo J. Machado and Miguel Ângelo Sousa of OERN and Prof. Henrique Santos from University of Minho, Workshop Chair.

And for all the participants I am sure that they take the best of this experience.

I am very glad to welcome you to **WCSEIT'2013**.

Thank you all

Prof. Dr. Claudio da Rocha Brito
GENERAL CHAIR
President of COPEC

Message from the Technical Program Chair

As the program chair of **WCSEIT'2013 - World Congress on Systems Engineering and Information Technology** I am glad to say that it has been a grateful work once we received quality contributions.

This congress congregates specialists in system engineering and information technology and it is an opportunity for participants to be aware of current technologies and trends, as well as to show their accomplishments in these areas. It has been an inspiring occasion for participants to learn and discuss research topics in the areas.

The theme **Innovative and Reliable Information Technology for a Sustainable World** was very inspiring and we had many papers, top research in the fields that have contributed a lot for the discussions and debates along the conference that showed a great deal of participation.

The local of the congress is without any doubt one of a kind once Porto is a historical city full of life and one of the most beautiful cities of the country. It is the second-largest city in Portugal, after Lisbon, one of the major urban areas in Southern Europe and the capital of the second major great urban area in Portugal. Its Mediterranean climate gives it wonderful colors at the end of a summer day, an amazing city to visit and know.

The host institution the **OERN - Ordem dos Engenheiros - Região Norte** has embraced the ideal and its staff has been doing their best to put up an excellent environment for the attendees as well as welcoming us all.

My thanks for all of the technical committee members for their diligent and untiring effort in reviewing the submissions and all the speakers and authors for their valued collaborations. The experience and efforts of those mentioned above are indeed a great contribution for the success of this conference.

I could never forget to thank the local committee for their excellent work and willing to join efforts to make of this conference another success.

My special thanks to all the authors for their valuable contributions and active participation.

Thank you all and enjoy the scientific experience!

<div align="right">

Prof. Dr. Melany M. Ciampi
TECHNICAL PROGRAM CHAIR
President of SHERO

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Message from the Local Chair

The **Ordem dos Engenheiros da Região Norte** (Institute of Engineers of Portugal – North Region) is pleased to receive, as Chair of the Local Committee, the **World Congress on Systems Engineering and Information Technology – WCSEIT'2013**, to be held in Porto.

It is an honor for the **Ordem dos Engenheiros da Região Norte** to organize jointly with the **Science and Education Research Council – COPEC** another event, of high scientific quality and international reference in this field that has been celebrated.

Eng. Fernando de Almeida Santos
LOCAL CHAIR
President of OERN

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Program

Edited by
Claudio da Rocha Brito
Melany M. Ciampi

Science and Education
Research Council

WCSEIT'2013– Program at Glance

Time	Sunday 17	Monday 18	Tuesday 19	Wednesday 20	Time
8:30 am 9:00 am	Free	Registration	Registration	Registration	8:30 am 9:00 am
9:00 am 9:30 am		Opening Session	Technical Session	Technical Session	9:00 am 9:30 am
9:30 am 10:00 am		Plenary Session			9:30 am 10:00 am
10:00 am 10:30 am					10:00 am 10:30 am
10:30 am 11:00 am		Coffee Break	Coffee Break	Coffee Break	10:30 am 11:00 am
11:00 am 11:30 am		Technical Session	Technical Session	Technical Session	11:00 am 11:30 am
11:30 am 12:00 pm					11:30 am 12:00 pm
12:00 pm 12:30 pm					12:00 pm 12:30 pm
12:30 pm 1:00 pm	Registration	Lunch	Lunch	Lunch	12:30 pm 1:00 pm
1:00 pm 1:30 pm					1:00 pm 1:30 pm
1:30 pm 2:00 pm					1:30 pm 2:00 pm
2:00 pm 2:30 pm					2:00 pm 2:30 pm
2:30 pm 3:00 pm	Workshop	Technical Session	Technical Session	Technical Session	2:30 pm 3:00 pm
3:00 pm 3:30 pm					3:00 pm 3:30 pm
3:30 pm 4:00 pm					3:30 pm 4:00 pm
4:00 pm 4:30 pm	Coffee Break	Coffee Break	Coffee Break	Coffee Break	4:00 pm 4:30 pm
4:30 pm 5:00 pm	Workshop	Technical Session	Free	Closing Session	4:30 pm 5:00 pm
5:00 pm 5:30 pm					5:00 pm 5:30 pm
5:30 pm 6:00 pm					5:30 pm 6:00 pm
6:00 pm 6:30 pm	Cocktail Party	Free		Free	6:00 pm 6:30 pm
6:30 pm 7:00 pm					6:30 pm 7:00 pm
7:00 pm 7:30 pm					7:00 pm 7:30 pm
7:30 pm 8:00 pm					7:30 pm 8:00 pm
8:00 pm 8:30 pm	Free		Banquet (for adhesion)		8:00 pm 8:30 pm
8:30 pm 9:00 pm					8:30 pm 9:00 pm
9:00 pm 9:30 pm					9:00 pm 9:30 pm
9:30 pm 10:00 pm					9:30 pm 10:00 pm

Session and Presentation Codes
Codes are used to determine when and where a paper is presented.

Technical Session Coding
A four- character designator is associated with each technical session, as in **LDTN**
Where:

L – is a letter that designates the language of the session:
      E – designates English sessions and papers;
      P – designates Portuguese sessions and papers;

D – is a letter that designates the day of the session:
      M – designates Monday sessions and papers;
      T – designates Tuesday sessions and papers;
      W – designates Wednesday sessions and papers.

T – is a number that designates the time slot for the session:
      1 is early morning (9:00 am - 10:30 am);
      2 is late morning (11:00 am - 12:30 pm);
      3 is early afternoon (2:30 pm - 4:00 pm);
      4 is late afternoon (4:30 pm - 6:00 pm);

Note
Five minutes will be allowed for introductions and instructions at the beginning of each session. Each paper will be given 10 minutes for the total presentation, with two minutes for questions. All papers will start in 12 – minutes increments to allow conference attendees to "session hop" hear papers of interest. If there is a no-show author in a session, a 12 - minutes break will be called. ***Papers will not be moved up in sessions.***

Papers times for sessions are shown below. (H is a letter that designates hour of the day).

Session Begins	H:00	H:30
First paper	H:05	H:35
Second Paper	H:17	H:47
Third Paper	H:29	H:59
Fourth Paper	H:41	(H+1):11
Fifth paper	H:53	(H+1):23
Sixth paper	(H+1):05	(H+1):35
Seventh paper	(H+1):17	(H+1):47
Session Ends	(H+1):29	(H+1):59

Sunday – November, 17

12:30 pm – 5:00 pm
REGISTRATION

2:30 pm – 6:00 pm
WORKSHOP

DEMYSTIFICATION OF INFOSEC MANAGEMENT BASED ON ISO / IEC 27000
Prof. Dr. Henrique Santos, Departament of Information Systems, University of Minho, Guimarães, Portugal

6:00 pm – 8:00 pm
WELCOME COCKTAIL

All the conference attendees are welcome to join us for the "Welcome Cocktail" on Sunday at 6:00 pm. It is the opportunity to get in touch with old colleagues and make new friends in a nice environment.

Monday – November, 18

8:30 am – 3:30 pm
REGISTRATION

9:00 am – 9:30 am
OPENING SESSION
Chair**: Prof. Dr. Claudio da Rocha Brito** – General Chair of WCSEIT'2013
Prof. Dr. Melany M. Ciampi – Technical Program Chair of WCSEIT'2013
Eng. Fernando de Almeida Santos – Local Chair of WCSEIT'2013

9:30 am – 10:30 am
PLENARY SESSION I
Chair: **Prof. Dr. Claudio da Rocha Brito** – President of COPEC
INNOVATIVE AND RELIABLE INFORMATION TECHNOLOGY FOR A SUSTAINABLE WORLD
Speaker: **Prof. Dr. Melany M. Ciampi** – President of SHERO

10:30 am – 11:00 am
Coffee Break

11:00 am – 11:30 pm
TECHNICAL SESSION EM2
Chairs
Abdullah Rashed
David I. Eromon

11:30 am – 12:30 pm
TECHNICAL SESSION PM2
Chairs
Sidónio Seixas
Mirley Bitencourt Ferreira

12:30 pm – 2:30 pm
LUNCH

Tuesday – November, 19

8:30 am – 3:30 pm
REGISTRATION

9:00 am – 10:30 am
TECHNICAL SESSION PT1
Chairs
Evandro W. Wicher
José A. Fernandes

10:30 am – 11:00 am
Coffee Break

11:00 am – 12:30 pm
TECHNICAL SESSION PT2
Chairs
Danilo Battaglia
Samuel Dereste dos Santos

ANÁLISE E AFERIÇÃO DE UMA FRESADORA CNC ATRAVÉS DA UTILIZAÇÃO DAS TECNOLOGIAS ASSISTIDAS POR COMPUTADOR, NO ESCANEAMENTO 3D DE AMOSTRAS E PROCESSAMENTO DE IMAGENS

12:30 pm – 2:30 pm
LUNCH

2:30 pm – 4:00 pm
TECHNICAL SESSION PT3
Chairs
Jose Benedito Sacomano
Maria Aparecida Lopes da Cruz

8:00 pm – 11:00 pm
THE BANQUET

Let's have a good time gathering with colleagues in an inspiring environment for a pleasant dinner. The tickets will be available at the reception desk.

Wednesday – November, 20

8:30 am – 3:30 pm
REGISTRATION

9:00 am – 10:30 am
TECHNICAL SESSION PW1
Chairs
Marcelo Nogueira
Mario Mollo Neto

10:30 am – 11:00 am
Coffee Break

11:00 am – 12:30 pm
TECHNICAL SESSION PW2
Chairs
Marcelo Nogueira
Mario Mollo Neto

12:30 pm – 2:30 pm
LUNCH

2:30 pm – 4:00 pm
TECHNICAL SESSION PW3
Chairs
Victor F. A. Barros
Danila Fernandes Mendonça

4:00 pm – 4:30 pm
Coffee Break

4:30 pm – 5:00 pm
CLOSING SESSION
Chair: **Prof. Dr. Claudio da Rocha Brito** – General Chair of WCSEIT'2013
Prof. Dr. Melany M. Ciampi – Technical Program Chair of WCSEIT'2013
Eng. Fernando de Almeida Santos – Local Chair of WCSEIT'2013

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Abstracts

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Plenary Sessions

INNOVATIVE AND RELIABLE INFORMATION TECHNOLOGY FOR A SUSTAINABLE WORLD

Claudio da Rocha Brito, Melany M. Ciampi, Victor F. A. Barros

The WCSEIT – World Congress on System Engineering and Information Technology, a congress that is a landmark in the field once it provides a forum for the discussions and solutions for the betterment of professional practice as well as for research. It is a congress that can count with many organizations participation and it shows to be an idea that fulfills the expectations of scientific and research environment. This edition is very special because it is a joint venture of WCSEIT – World Council on System Engineering and Information Technology and the Portuguese Order of Engineers. These two organizations have been working together putting up a top scientific congress with quality and impact in academic and professional communities. WCSEIT'2013 has the collaboration of many scientists in the several fields of expertize, who have embraced the ideal of fostering the quality of professional and research practice.

Technical Sessions

TECHNICAL SESSION EM2

USER PERCEPTION FOR BIOMETRICS AND SECRET MANAGEMENT

Abdullah Rashed, Henrique Santos

This paper aims to present a view of some problems that users face with PINs and how they manage them. Furthermore, we aimed to explore effects of their PIN management techniques on judging PIN problems. The research questions were (1) Do users manage their PINs in a secure way? Are they aware of PIN problems? And (2) what are the perceptions of users surrounding the use of a biometrics authentication system? We carried out a survey instrument to test on Yemenis. Results show they do not suffer from the well-known problem which is forgetting PINs. Authors believe that due to the cultural behaviour men do not share credit cards or PINs with their partners. Moreover, users use non-secure methods to manage recalling PINs and user names so they do not perceive the security problems. Moreover, in that culture they depend on cash payment and rarely use credit cards or websites for e-payment. Based on Rashed and Santos results, our study recommends using biometrics and PIN s in ATM.

COMMUNICATION NETWORK FOR DISTRIBUTION RESOURCES IN MODERN AUTOMATION

David I. Eromon

The principle goal of this project is to develop DER object models that are of suitable quality to be submitted to the IEC for eventual standardization. This quality can only be obtained by validating the object models using the expertise of vendors, utilities, DER owners, and other DER stakeholders. Utility companies have been battling with the coordination of datas as a two way communications and thus have to be faced with controlling increasing amounts of DER within their utility distribution systems, thus requiring application of more automation system to confront and administer/manage the challenges and opportunities faced by DER. Of particular interest is the advance distributed automation (ADA) that will incorporate DER to automated management of distribution network. Our algorithms respond to system contingencies in the electric grid, visualize the grid behavior for the benefit of reliability operators, and simulate in a hybrid setting integrated continuous system behavior.

LEARNING THE BAYESIAN STRUCTURE IN BIGDATA USING THE K2 ALGORITHM WITH MAPREDUCE

Arilene Santos de França, João Gabriel R. de O. Lima, Antonio F. L. Jacob Junior, Ádamo Lima de Santana

The focus of this paper is to propose a new approach for learning Bayesian Network in the context of BigData using the K2 algorithm, which allows finding the most probable structure of a belief network from a given dataset. The main challenge is to deal with the complexity of the problem, in order to reduce the execution time of the algorithm to produce faster responses without the need of reducing dataset and, consequently, lose some useful information. Based on it, this paper proposes a modification of the KDD process in preparation and pre-processing steps, through the insertion of another stage, in order to optimize the search process in frequency of the data analyzed. In order to prove the efficiency of this model, statistics related to performance of the technique according to the number of states of each attribute, as compared to the amount of attributes, are presented.

TECHNICAL SESSION PM2

MODELING PROCESS FOR A SYSTEM OF IDENTITY MANAGEMENT AND ACCESS FOR THE REQUIREMENTS OF INFORMATION SECURITY

Mirley Bitencourt Ferreira, Kelly Alonso Costa, Lidia Angulo Meza, Eliane da Silva Christo

The scenario of globalization was a major stimulus to the search for new markets in recent years. Companies that go through processes of expansion, acquisition and mergers even need to incorporate into their body the information systems and new databases. One of the challenges is the formation of numerous identifications, causing inconveniences such as the lack of maintenance of identity, non-compliance of data and information security vulnerabilities. This paper aims to model the process flow for a system of identity management and access (IdM) of a company in the mining sector after acquisitions. The result is the creation of a unique identification of the user in all information systems and the standardization for access requests, using the BPM for process modeling. The study identified the main benefits generated aligned to the requirements of SOX.

REQUISITOS PARA UM SISTEMA INTELIGENTE DE GESTÃO/ANÁLISE DE EVENTOS DE SEGURANÇA DA INFORMAÇÃO

Sidónio Seixas, Henrique Santos

With rapid evolution of technology and with proliferation of information systems supporting devices, the management of information security events becomes essential to allow adequate monitoring of critical resources. An information security manager has to deal with an events exponential increase and, at the same time, needs to understand the different events causes that occurs in the security devices. This task proves to be extremely complex. It is important that new tools appears to allow an information security manager to treat the events with an intelligent way. There are already some solutions for this problem but involve very complex operations and collaboration between various entities. This solutions are primarily concerned with the technological aspects, which is clearly insufficient. The objective of this paper is to introduce a set of requirements, obtained through surveys and documentary research. Requirements should be used by intelligent tools to support the management of information security events.

UMA TÉCNICA INTERATIVA E GRÁFICA APLICADA NO PROBLEMA DE ATENDIMENTO DE OCORRÊNCIAS POLICIAIS

José Lassance de C. Silva, Gerardo Valdísio R. Viana, Bruno de Castro H. Silva

This paper presents an innovative technique used in Police Occurrence Treatment Problem, which intends to determine how to proceed in a way to prevent the escape of personnel involved in criminal activities: robbery, murder, among others. The Departments of Public Security of the States, constitutional institutes are responsible for control of public security of its citizens and institutions, do not disclose what techniques are used by them to apprehend the criminals involved in such events, because this character information confidential. There is not knowledge in the scientific literature on how to handle the problem. This paper presents a technique based on specific knowledge of the operational research that can help these institutes to solve the problem with good performance, aided by computers, much faster than if you try to use only human reasoning. We performed computational experiments using case studies to show the satisfactory performance of our proposal.

SEGURANÇA DA INFORMAÇÃO EM REDES INTELIGENTES OU "SMART GRID"

José Roberto Paim Neto, David Bianchini

The smart grid networks are becoming increasingly present in the global electrical industry, mainly due to the great power of management and automation that such networks provide. There is an expectation that such intelligent solutions should be reliable and could be possible reduce the rate of non-technical losses in the power distribution processes, such as fraud, illegal connections, energy meter violations; which result in commercial losses for the electric power distributors and reduce the quality of the supplied energy. In Brazil, smart grids are undergoing expansion and there is an expectation to reduce the rate of commercial losses. This paper presents a critical analysis and risks about information security in smart grids, in a context of advancement communications, which provides an integrated computing environment and opens new possibilities for frauds and system vulnerabilities.

TECHNICAL SESSION PM3

MAPEAMENTO DE FLUXO DE SISTEMA – O CASO MILLDESK

Joaquim J. H de Lima, Renato de Mello, Leandro C. Pyckoz, Fabio M. Caliari, Luciano J. da Costa

This article presents part of the project SEBRAETEC/SC - project of technological consulting for small companies of the Santa Catarina State. The objective of the project is to create conditions for the increase in the innovation rate at the small companies, contributing in adding value to the revenue, productivity and competitivity improvements. This article shows the consulting done at Setrion company, where the support flux was developed to the software Milldesk. With the implantation of the flux several points were improved in the company, highlighting the participation of customers in the program of "improvement suggestions". Improvements that were implemented resulting the Milldesk to be a more complete and competitive software in the domestic and international market.

TÉCNICAS PREDITIVAS DE MANUTENÇÃO EM TRANSFORMADORES DE POTÊNCIA – UM ESTUDO DE CASO

André Pereira Marques, Cacilda de Jesus Ribeiro, Cláudio Henrique Bezerra Azevedo, José Augusto Lopes dos Santos, Leonardo da Cunha Brito

Predictive techniques for power transformers are based on setting up diagnoses and analyzing trends obtained from test results and observations of events that arise when this equipment is in operation. Thus, this article aims to address the existing techniques in the area of preventive maintenance and the aspects related to scheduled and unscheduled technical shutdowns of transformers, whether in urgent or emergency situations (electrical failures). These analyses resulted in a case study that monitors and detects partial discharges performed simultaneously in two three-phase power transformers of 33.3 MVA and voltages of 138 kV/13,8 kV, while in service. Accordingly, predictive techniques such as dissolved gas-in-oil analysis (chromatography), physico-chemical analysis, thermal imaging and detection of partial discharges by the acoustic emission method are emphasized as key tools for an effective maintenance strategy of electric power systems and equipment.

PROJETO DE UM MÓDULO DIDÁTICO DE 1 KVA, PARA A CONEXÃO SCOTT, COM SAÍDA BIFÁSICA OU TETRAFÁSICA

Francisco Carlos V. Malange, Falcondes J. M. de Seixas, Priscila da Silva Oliveira

The modeling of the Scott connection is typically formed by two single-phase cores at different turns ratio. For power rating about kVA orders and above, a three-phase core is preferentially used. This work considers the design and development of a didactic module for the Scott connection, where all terminals are available. This project is different because the building characteristic of the didactic feature with the possibility of multiple output voltages and the 3Φ-4Φ conversion using only one transformer. The transformer will be two windings to the primary side and four windings to the secondary one, allowing the 3Φ-2Φ and the 3Φ-4Φ conversions. Electrical parameters obtained by experimental tests, such as winding inductances and output voltages, are compared to those from digital simulations with OrCAD/PSpice software. Equations and fasorial analysis are also presented to describe module's behavior.

PROJETO DE UM MODULO DIDÁTICO DE UM FREIO ELETROMAGNÉTICO PARA A ENSAIOS DE MOTORES ELÉTRICOS

Francisco Carlos V. Malange, Falcondes J. M. de Seixas, Priscila da Silva Oliveira

The efficiency of the electric motor is dependent on the load driven its axis as well as the techniques of control and drive, making it essential to know the behavior of power consumption, power factor and the torque/current ratio. The torque is determined by reaction forces on rotating and stationary parts. In order to obtain such quantities, without expensive equipment, such as dynamometers, generators and dedicated interfaces for measuring torque, one electromechanical brake actuated by induced currents becomes an essential device in the practical classes of electrical machines. It is proposed in this paper a methodology for design of a teaching module of an electromagnetic brake (Brake of Foucault), capable of imposing adjustable mechanical load, without the need for direct measurements of torque. The module must have a low final cost and may be used in analyzing the performance of an induction motor from empty to full load.

MOTOR LINEAR DE INDUÇÃO BIFÁSICO: ANÁLISE DO CAMPO MAGNÉTICO PELO PROGRAMA FEMM

Falcondes J. M. de Seixas, Francisco Carlos V. Malange, Ricardo Henrique O. G. Rangel, Rodolfo Castanho Fernandes, Priscila da Silva Oliveira

The Linear Induction Motors (LIM) belong to the Group of electric machines that convert electrical energy directly into mechanical energy in the form of translational motion. Thus, unlike the rotary machines, linear motors are capable of producing linear motion, without the need for mechanical couplings as belts or gear sets, resulting in greater precision and acceleration in the positioning of the moving piece. This work presents a study of the behavior of the magnetic field and their amplitude along the stator and the rotor of a LIM. Computational analysis of magnetic flux is made using a free computer program (FEMM-Finite Elements Methods on Magnetics), based on theory of "finite elements". Through this analysis it is possible to develop prototypes of LIMs with maximum efficiency, relating to mechanical power delivered to the load.

MOTOR LINEAR DE INDUÇÃO BIFÁSICO: PROJETO DE UM PROTÓTIPO DIDÁTICO

Falcondes J. M. de Seixas, Francisco Carlos V. Malange, Lucas da Silva Pereira, Claudiner M. Seixas, Priscila da Silva Oliveira

The industry and transport have mainly focused on finding solutions that can simultaneously reduce time and costs, increasing production. Therefore, the engineering develops electrical / mechanical equipments to produce motion able to perform different tasks, such as positioning and transportation. Within this group of drives it finds all electric motors in general. The linear motor is not common to be found compared to the rotary. However, they are used for different applications such as in propulsion of high speed trains, linear movement of loads (horizontally or vertically). This work proposes a teaching prototype of the linear motor based on a conventional two-phase induction motor. It will present the steps to build the magnetic core (track) and the windings as well as the design of the vehicle (cursor) similar to a squirrel cage. Some preliminary tests will be performed, feeding the linear motor from a two-phase output of the scott transformer.

PROPOSTA DE UM MODELO DE PLANTA INDUSTRIAL SUSTENTÁVEL PARA O PROCESSO INDUSTRIAL DE CERÂMICA VERMELHA NA REGIÃO DO VALE DO RIO TIJUCAS EM SANTA CATARINA, BRASIL

Gilmar Vedvotto Júnior, George L Bleyer Ferreira, Osmar Possamai

The structural ceramics industry, known as red ceramic, driven by the expansion of housing programs and the real estate sector is presented in full swing. The Tijucas River Valley in Santa Catarina, Brazil is one of the regions most concentrated activities in this sector in the State. However, the activity generates a large environmental impact for the region which has mobilized the state prosecutor´s office to demand of companies a term adjustment behaviors (TAB) for settlement activity. On the other hand, companies manifest difficulties in meeting environmental requirements. This study aimed to mitigate environmental impacts through a model of an industrial plant with sustainability techniques. The methodology used was characterized by a literature search and field so that enabled

the mapping of the production process with the identification of the potential impact, thus resulting in a model plant for sustainable industrial sector.

TECHNICAL SESSION PM4

REUSO DE RECURSOS EDUCACIONAIS ABERTOS: UMA PROPOSTA DE MECANISMO DE RECOMENDAÇÃO APLICADO A TEXTOS ABERTOS COLABORATIVOS

Alexander Gobbato P. Albuquerque, Ismar Frango Silveira

The reuse of open educational resources faces a series of barriers and challenges regarding to the retrieval of elements that are appropriate to some didactic situation, besides the uncertainty of their sources – one not necessarily does not know if they are trustable or reliable. These challenges become even broader considering the reuse of resources created in a collaborative way. In this sense, this work presents a proposal to create a computational system to repute and classify Open Educational Resource in a collaborative educational context, thus helping teachers to reuse them to build unique resources for specific educational contexts.

CONTRIBUIÇÕES E POSSIBILIDADES DA AUTORIA DE HISTÓRIAS EM QUADRINHOS DIGITAIS PARA A APRENDIZAGEM EM MATEMÁTICA: UM ESTUDO DE CASO

Gilberto de Almeida Meireles Patrocínio, Ismar Frango Silveira, Laura Marisa Calejon

This research aims to identify which contributions and possibilities of digital comic book for learning in mathematics of participants that present lags to natural numbers and operations, taking the 5th, 6th, and 8th years of elementary school. This project is a pre-experimental research with qualitative approach. In this effort, were also analyzed the operational difficulties in the universe where the research was carried out, the degree of familiarity of the participants with the technological resources. The results show that there are indications that the strategy of the development of digital comics can contribute to learning of mathematics.

PROPOSTA DE LINGUAGEM DE PADRÕES UTILIZADOS EM STORYBOARDS PARA GERAÇÃO SEMIAUTOMÁTICA DE ANIMAÇÕES DIGITAIS

Pedro Henrique Cacique Braga, Ismar Frango Silveira

Animation is a multi-disciplinary art form, involving drawing, sculpture, modeling, dancing, computer science, among others. Among several steps of creating an animation, pre-production is the stage in which artists can explore their creativity, experimenting with different options to convey their ideas. The main tool of the pre-production is the storyboard, which allows the artist to tell his story through keyframe animation. In order to assist the artist in producing the storyboard, this paper aims to establish a pattern language used to represent the movement of characters and scene features, such as lighting and camera movements. Along this pattern language, are presented a computational architecture capable of generating simple animations that allow users to experience the composition of each scene and decide on its final form.

VIVISSECÇÃO VIRTUAL COM UTILIZAÇÃO DE DISPOSITIVOS MÓVEIS: UMA PROPOSTA PARA O ENSINO E APRENDIZAGEM DE BIOLOGIA

Meire Pereira de França, Ismar Frango Silveira

The demonstration of basic anatomical features of animals is a required topic on learning Biology at K-12 and High School. Nonetheless, since Bioethics principles forbid vivisection practices on this school level, this paper aims to show a methodological approach of developing students' critical Bioethics on this subject, exposing them to a virtual vivisection process using mobile technologies. An experimental activity was conducted with 2nd year High School students. A group on Facebook was established to guide students along this experience. They were given tablets to perform a set of activities, as watching a video about Bioethics and make searches about vivisection, which was used to support them to perform a virtual vivisection process using a tablet-based application.. After completion of this process, students produced a text about the experience using Google Docs and answered a

survey about the activity. By doing this, it was possible to show that the approach here exposed was effective in order to improve student's understanding of the topics covered.

AVALIAÇÃO DA QUALIDADE DO SERVIÇO EM UNIDADES DE TERAPIA INTENSIVA: UM ESTUDO DE CASO SOBRE CARGA DE TRABALHO DE ENFERMAGEM

Marcelo Vieira Contin, Jorge Alberto Achcar

Para avaliar a qualidade dos serviços hospitalares brasileiros, um estudo foi realizado com uma amostra de pacientes do hospital das clínicas da cidade de São Paulo, Brasil atendidos na Unidade de Terapia Intensiva (UTI). Nesse estudo consideramos pacientes internados devido à vários tipos de doenças. Várias técnicas estatísticas foram consideradas para analisar os dados relativos a uma medida de atendimento hospitalar recentemente introduzida na literatura denominada NAS (Nursing Activities Score). Essa medida é um instrumento de medida de carga de trabalho de enfermagem em UTI. A análise desses dados permite uma avaliação do serviço hospitalar relacionados a diferentes fatores e também para a construção de cartas de controle hospitalar. Esses resultados são de grande interesse para os administradores da área da saúde e para a população em geral.

ANÁLISE DA INTEGRAÇÃO IEEE 1815 DNP3 COM GPRS NA APLICAÇÃO DE TELEPROTEÇÃO DE SUBESTAÇÕES

Esleyra Guerrero Maldonado, Dionizio Paschoareli Junior, Lucas Arruda Ramalho

The application of substations' teleprotection and that presents a more sensitive environment to the performance requirements of the communication network. The communication delay between the substation and the control center must be reduced. However, due to the remote location of most substations, cellular networks can become low-cost solutions that allow a communication within the establish requirements. This work makes a theoretical analysis of SG data transmission time using the DNP3 integrating protocols encapsulated for GPRS operation. The analysis observes that the GPRS network has characteristics that allow communication between substation and the utility company within the requirements. However the amount of data to be transmitted should not be elevated.

UM SISTEMA DE INFORMAÇÃO GEOGRÁFICA EM PLATAFORMA WEB BASEADO NO GEOSERVER

Leandro Alves de Sousa, Tamyris Caetano Pimenta, Wesley Ramin Ramos, Thiago Silva-de-Souza, Alessandro de Almeida Castro Cerqueira

Geoprocessing assists activities in which it is necessary to visualize georeferenced data. This requires using a Geographic Information System (GIS). The most important free GIS applications are uDig and terraView. However, these applications are available in desktop platform, a fact that restricts the information access and difficults the data sharing. This paper therefore presents the EMAPI, an open source GIS developed in web platform, which combines the features found in major available GIS applications. E-MAPI is based on GeoServer, a free maps server to develop customized Webmapping solutions, and OpenLayers, a JavaScript library used to display maps and other geospatial information in dynamic web pages.

TECHNICAL SESSION PT1

MODELAGEM DE UM SISTEMA DE INFORMAÇÃO PARA RASTREABILIDADE DA PRODUÇÃO DE AÇÚCAR CRISTAL

Evandro W. Wicher, José A. Fernandes, José L. G. Hermosilla, José M. Lorena Jr.

Lately there have been requirements to ensure the safety of food aiming to preserve the consumer´s health. In this context traceability is within rules ISO and European regulations and it´s defined as the capability to build a background, applicability or location of a product through registered information. The traceability of agro-manufactured products involves traceability down the information throughout the production chain in a complex net of relationship. Thus the development of an information system is essential in order to make feasible the construction of an efficient and agile traceability system. The aim of this essay is to feature an information system

bound to register the traceability database applied to the crystal sugar production. The approach which was used here was the representation of the database in the related model, using for such the Entity-Relationship Model. It was found out that the model allows assisting the necessity of the sugar mill.

UM MODELO MATEMÁTICO USADO NO ATENDIMENTO DE SERVIÇOS PARA O REPARO DE DISTRIBUIÇÃO DE ENERGIA ELÉTRICA

José Lassance de C. Silva, João Bosco F. Arruda, Breno de Castro H. e Silva

This paper presents a mathematical model applied in the problem of determining the optimal number of teams used in handling events generated by breakdowns in the distribution system of electric power or preventive maintenance services. The model proved to be an excellent tool to quantify the optimal number of teams to attend the services requested of low and medium voltage. The model succeeded in solving the problem where several computational experiments were performed based on actual data provided by a distributor of electricity. The results of computational experiments show as quantified the number of teams per day, month, semester or year.

MÉTODO PARA ELABORAÇÃO DE INDICADORES DE DESEMPENHO AMBIENTAL INTEGRANDO O PLANEJAMENTO ESTRATÉGICO À GESTÃO DO PROCESSO PRODUTIVO

Bruno Becker, George L Bleyer Ferreira, Osmar Possamai

The growing concern of companies with environmental pressures related to the use of natural resources and impacts, has motivated companies to improve their management procedures to ensure the effectiveness of its actions in production processes. This study aimed to design a method that integrates systemically strategic planning, process management and performance evaluation based on environmental indicators. The methodology used was characterized as a field research involving the ceramic sector company located in southern Brazil and indicators were structured based on NBR ISO 14.031/2004. The research resulted in a structured method oriented to meet the standard requirements prioritizing environmental aspects and impacts that assess the inputs and outputs of the production process providing a new systematic presentation of indicators that integrating the company's strategic planning with the environmental management.

VARIÁVEIS ECONÔMICAS E O RESULTADO FINANCEIRO OPERACIONAL DE UMA MINERADORA DE MÉDIO PORTE NO BRASIL

José Felipe Conrado Fulino de Souza, Andrey Pelicer Tarichi, Claudio Luis Piratelli

Mining is a sector of the Brazilian economy whose competitiveness is influenced by economic variables. The aim of this paper is to identify and measure economic variables that impact operating income in mining. First identifies himself as the manager thinks the influence of these variables on Operating Income (RO) by Cognitive Mapping (CM). After evaluating the impact of these variables on RO through Multiple Linear Regression (MLR). Thus, the descriptive exploratory study used qualitative and quantitative techniques (database of 44 months). Identified variables - sales, costs (electricity demand, labor, gas, oil (diesel and BPF), acid, soda) and Production (Industry and Construction) - only sales volume, cost of electricity tip, gas costs and BPF showed impact on RO. The MC shows up essential variables to identify the problem and RLM was effective to determine their impacts.

LOGÍSTICA ENXUTA: DISTRIBUIÇÃO COM BASE NA TÉCNICA LEAN THINKING

Rodrigo Uliana Ferreira , Carlos Oliveira Valente Magno

This article describes how the Lean Logistics technique can be effective in the distribution sector, reducing waste in processes, because in a globalized world competitiveness and cost reduction without losing quality are required. This article will demonstrate the use of hypotheses Lean Logistics to reduce waste in a company quoted on the topic of Problems in Physical Distribution, located in northwestern São Paulo - Brazil, in the case study company used was a qualitative research during the loading of the vehicle to release for the trip, considering the waste of time, process and cost.

UMA ANÁLISE DA APLICAÇÃO DO LEAN OFFICE NA GESTÃO PÚBLICA: O CASO DE UM PROGRAMA DE INTERCÂMBIO ESTUDANTIL UNIVERSITÁRIO

Maria Cristina Mozaner Nitzsche, Sanderson César Macedo Barbalho

Concerning the internationalization in higher education, student exchange is important to provide the student with technical, cultural knowledge and differentiated teaching methodologies. Students' mobility from Brazilian to foreign universities requires several administrative procedures to be performed, demanding hours of activities from the university´s administrative staff. It is desirable the creation of a flow of work that would improve the processes. This research work is a case study of the application of Lean Office (LO) methods aiming to improve the processes of an exchange program at a public Brazilian university. We present the processes' mapping, the theoretical study about the LO, the analysis of the mobility processes, and the current state of the value stream maps. We intend to reduce the activities that would not add value as well as standardize the operations by proposing an "ideal" process to present as a guideline for the higher administration.

A CONTRIBUIÇÃO DOS TABLETS COMO FERRAMENTAS MEDIADORAS NO PROCESSO DE ENSINO APRENDIZAGEM PARA ALUNOS DA EDUCAÇÃO BÁSICA NA DISCIPLINA DE FÍSICA

Marta de Cássia Nascimento Kulcsar Borges, Carlos Fernando Araújo Júnior

This article reports a study conducted with students of the Basic Education from the college Cruzeiro do Sul in São Paulo. Analyzing the students' opinions regarding the use of the tablet and the simple mind application in the construction of mental maps. The tablet / application was used in a collaborative activity with the objective that students prepare their notes by using these tools, mediated by the teacher about the content of Electrostatic covered in previous lessons. Students expressed their views by answering a questionnaire. The results showed positive for ease of use and mobility of the tablet, the upgrading of using the application, and this is a favorable feature in the expression of the consolidation of knowledge built in physics classes. Students were able to demonstrate in a creative, dynamic and innovative contribution of the tablet / application in learning process, rebuilding the teacher / student relationship and the actual challenges.

TECHNICAL SESSION PT2

UMA METODOLOGIA DE CHI-QUADRADO APLICADA AO CONTROLE DE DESVIOS NO PLANEJAMENTO DE PROJETOS

Denis Ávila Montini, Danilo Battaglia, Gustavo Ravanhani Matuck, Paulo Marcelo Tasinaffo, Luiz Alberto Vieira Dias, Alessandra Ávila Montini, Adilson Marques da Cunha

This paper describes a hybrid-Chi-squared methodology for Project Plan deviations identification, including those for multiple deviations in a Project Plan system. The sampling methodology was used to analyze similarity, together with a statistical optimization methodology for Chi-squared, to select the methodology used to forecast data in the Project Plan phase. The created sampling methodology was utilized for Project Plan activities learning, in order to detect deviations. The hybrid- Chi-squared methodology was employed by empirical results. The results have shown that the selection strategy identify the best forecasting approach between two different proposals, aiming to provide the Project Plan forecasting process, presenting the best precisions based on the diagnose deviations detection, within this hybrid-Chi-squared methodology.

AS FERRAMENTAS COMPUTACIONAIS PARA O PROJETO DE EDIFICAÇÕES NO BRASIL

Samuel Dereste dos Santos, Oduvaldo Vendrametto, Miguel León González

The construction area has great importance to Brazilian economy. In fact, still remains low technological development that can be explained by the characteristics of your organization, division of labor, production process and peculiarities of the products. To produce good products, is necessary that the design processes should be efficient for all needs. This work analyses the evolution and the peculiarities of building´s design process in Brazil and the influence of computational tools to their evolution. To understand and situates the problem in the world´s context, there was made a bibliographical research about processes of building´s design, specially CAD tools and

their derivations. It was founded that the design processes in Brazil still present difficulties of information´s manage and demonstrates that BIM tools could be effective as the design process and management information both during construction and operation of buildings.

SISTEMA DE RECOMENDAÇÃO BASEADO EM PERFIL PROFISSIONAL

Antônio Eduardo R. de Souza, Sandra Maria Dotto Stump, Yara Maria Botti Mendes de Oliveira

Economic globalization has made products and services markets more competitive, demanding a better qualification of skilled manpower. Consequently, companies have needed well qualified professionals to meet specific demands. Specialization courses have been options sought by professionals in order to update the knowledge, in several areas, targeted to specific audience. However, a poorly chosen option can frustrate expectations and incur abandonment or change of chosen course. The purpose of this study is to develop a model of recommendation system based on professional characteristics of candidates, using Artificial Intelligence techniques based on decision trees, which identifies the most appropriate supplemental education to the candidate's profile. The proposed model predicts that the choice of the candidate become more accurate and agile, helping to minimize the number of withdrawal or dropouts from courses options selected as complementary education.

EDUCAÇÃO EMPREENDEDORA: PROPOSTA METODOLÓGICA PARA AVALIAR PRÁTICAS EMPREENDEDORAS EM INSTITUIÇÕES DE ENSINO SUPERIOR DE ENGENHARIA

George L Bleyer Ferreira, Álvaro Guilhermo Rojas Lezana

This research aimed to develop a methodology for identifying and evaluating entrepreneurial practices in production engineering courses in Higher Education Institutions (HEI) Community. Methodologically became a literature review in major publications in journals and conference proceedings seeking the theme entrepreneurial education. In the second phase identified three HEIs for the case study, which became a critical analysis, seeking evidence of pedagogical practices and policies oriented entrepreneurship in Institutional Development Plan (IDP), Institutional Educational Project (IEP) and Pedagogical Course Project (PCP). After there was a critical discussion of the content and document-oriented structure to a methodology based on the mission - vision - educational policies - strategic guidelines - assessment methodology of learning with entrepreneurial education. Finally, the paper presents a methodology for evaluation of entrepreneurial practices for engineering courses.

CONSTRUÇÃO DE UM APLICATIVO PARA AUXÍLIO NA DIVULGAÇÃO DE CAMPANHAS SOCIAIS

Thyago Taian da Rocha Ziderich, Manoela Barreto de Oliveira Reis, Eliene N. Cunha de Lima

One of the greatest social problems facing Brazil today is the social inequality. In a society where poor income distribution is an outstanding characteristic, many people suffer from a lack of basic services such as health, education, the lack of places for recreation etc.. One of the ways to achieve ease the severe lack of these services are social campaigns. Linked to the government or not, such initiatives help many people with donations of clothing, sports, daycare etc.. Despite all this help, many people still need to be helped and the commotion of the population is essential for this to occur. Based on this context, this paper proposes and implements an application where the user, integrated with Google Maps, can check which are the main campaigns that exist in Rio de Janeiro, one of the centers of Brazil, near to its location, and key information about this campaigns.

PROPOSTA E IMPLEMENTAÇÃO DO JOGO "WORLD OF VARIABLES" PARA AUXILIAR NO ENSINO DE PROGRAMAÇÃO INTRODUTÓRIA

Manoela Barreto de Oliveira Reis, Thyago Taian da Rocha Ziderich, Vinícius Cristiano de Almeida

The teaching and learning of introductory programming is an important theme in the debates and discussions promoted by academia, with its focus on the difficulties of understanding of essential concepts for such learning. Based on this context, this article is a reflection on how researchers and scientists understand the way in which games can assist and encourage understanding of key content. This article proposes and presents the

implementation of a game whose objective aims to assist in the teaching of introductory programming to students with the topic starter.

ANÁLISE E AFERIÇÃO DE UMA FRESADORA CNC ATRAVÉS DA UTILIZAÇÃO DAS TECNOLOGIAS ASSISTIDAS POR COMPUTADOR, NO ESCANEAMENTO 3D DE AMOSTRAS E PROCESSAMENTO DE IMAGENS

Augusto Seolin Jurisato, Marcelo Ricardo Rocha, João Paulo de Oliveira Freitas, Luiz Antonio Vasques Hellmeister

The use of computer-assisted technologies such as CAD - Computed Aided Design, CAM - Computed Aided Manufacturing, CAE - Computed Aided Engineering and CNC - Computed Numerical Control, are priorities in engineering and product designers. However, the dimensional measurement between the virtual and the real product design requires research, and dissemination procedures among its users. This work aims to use these technologies, through analysis and measurement of a CNC milling machine, designed and assembled in the university. Through the use of 3D scanning, and analyzing images of the machined samples, and its original virtual files, it was possible to compare the sizes of these samples in counter-position to the original virtual dimensions, we can state that the distortions between the real and virtual, are within acceptable limits for this type of equipment. As a secondary objective, this work seeks to disseminate and make more accessible the use of these technologies.

TECHNICAL SESSION PT3

REDES SOCIAIS: FERRAMENTA DE GESTÃO DE DESEMPENHO DOS FUNCIONÁRIOS

Claudio Lira Meirelles, Jose Benedito Sacomano, Renato Telles, João Paulo Lara Siqueira

The research objective is to present a instrument for performance management in human resources. To achieve competitive advantage organizations emphasize people as a fundamental resource to stand out in the market, and performance management appears as an instrument that enables the effective management of this resource. The theory was adopted from the paradigm of social networks that defines a network as a set of people connected by social relations, where the informal network, composed of spontaneous relationships between actors, portrays faithfully the company. The research used a cross-sectional descriptive quantitative method. The survey found that the central actor influence the performance of the actors that are part of their network, what makes possible the creation of a management tool based on the analysis of graphs and parameters for centrality, enabling the identification of the position and connections of the actors in the informal networks.

O VALOR DA INFORMAÇÃO CIENTIFICA – MODELO DE PESQUISA

Maria Aparecida Lopes da Cruz

This paper describes the state of the art metrics and its valuation process information, as well as preliminary studies for the development of a model research data showing how the researcher appreciates the information you need to make in your daily. An analysis of the perception of the value of scientific information by researchers is addressed. The main objective is to understand the process of recovery and search for information from researchers and parameters that allow us to identify the process by which the researcher values the scientific information in the generation of new knowledge.

SUPORTE A RASTREABILIDADE NO DESENVOLVIMENTO DE SOFTWARE DIRIGIDO A MODELOS

Douglas Ferreira de Borba, Luciane Telinski Wiedermann Agner, Inali Wisniewski Soares

Traceability was conceived as a possible solution for one of the main problems in the software development process: conformity assurance between software artifacts and their requisites. In the field of Model Driven Engineering (MDE) "traces", traceability links between the artifacts, register a link between a group of input model elements and a group of output model elements. Such link is related to the model transformation specification that associates those groups. Under this view, a number of researches have investigated a way to correctly explore traceability, so as to improve the MDE process quality. This article presents a review on traceability through model-

driven approaches as well as an analysis on the support provided by the Atlas Transformation Language (ATL). Several limitations related to ATL's traceability data recovery were identified and possible solutions were proposed.

UMA ABORDAGEM PARA GERAÇÃO DE PROCEDIMENTOS DE TESTE BASEADA EM ESPECIFICAÇÕES UML E OCL

Thiago Silva-de-Souza, Alexandre Luis Correa, Eber Assis Schmitz, Antonio Juarez Alencar

In most software development endeavors, testing is an important quality control technique. The main purpose of software testing is to reveal software failures. Functional testing is a type of testing where test cases are derived from the functional specification of the software under test. Therefore, the effectiveness of the test is directly related to the quality of the specification. A common category of software systems is the CRUD systems. CRUD systems are systems based on features like create, retrieve, update, and delete. This paper presents an approach for CRUD systems specification-based testing. This approach uses a technique to specify CRUD systems using UML class models enriched with Object Constraint Language (OCL) constraints and another technique to generate platform independent test procedures from the specification. These test procedures can be transformed into platform specific test procedures that can be used to verify the implementation of CRUD systems.

CONCEPÇÃO, MODELAGEM, SIMULAÇÃO E USINAGEM DE UM AEROFÓLIO AUTOMOTIVO AUXILIADO POR COMPUTADOR

Marcelo Ricardo Rocha, Augusto Seolin Jurisato, Luiz Antonio Vasques Hellmeister

With the advancement of computer technology and the availability of technology computer aided design (CAD) errors in the designs are getting smaller. To this end the project aims to assess the reliability of the machine (CNC), which was designed by students of mechanical engineering college engineering - UNESP Bauru, by designing, modeling, simulation and machining an airfoil automotive. The profile template selected for the study will be a NACA 0012 machined plates in medium density fiberboard (MDF) and will be performed with a structural analysis simulation using finite elements and a software CFD (Computational Fluid Dynamics), and test the real scale model in a wind tunnel. The results obtained in the wind tunnel and CFD software will be compared to see the error in the machining process.

PROPOSTA DE UM MÉTODO DE AVALIAÇÃO PARA SELEÇÃO DE PROJETOS DE MELHORIA DO FLUXO PRODUTIVO USANDO A ÁRVORE DE PERDA E TEORIA DAS RESTRIÇÕES

Jederson Donezete Zuchi, Gustavo José Caçador, Fábio Ferreira Cardoso, Walther Azzolini Junior, José L. G. Hermosilla

The aim of this paper is to propose a software evaluation for selection of projects to improve the production flow, which allows simulations creating scenarios involving product demand and efficiency of equipment, through the index of OEE (overall equipment effecteness). The theoretical basis of the proposed evaluation method was constructed from the Theory of Constraints (TOC - Theory of Constraints) and analysis of the reduction potential of the conversion cost (cost take out) that provide projects to be selected, based on the tree losses valued. In this context the selection of projects to improve the production flow that provides positive impact on the prospects of meeting the demand, utilization of manufacturing resources and reducing the cost of conversion includes the expected result from the use of the proposed evaluation method, demonstrated in this Article from an application example.

ESTRATÉGIAS PARA A CONSTRUÇÃO DE EQUIPES DE TRABALHO HOMOGÊNEAS E HETEROGÊNEAS

Huliane Medeiros da Silva, Flavius da Luz e Gorgônio

Teamwork is a practice commonly adopted in carrying out various activities, whether simple or complex, academic or professional, short or long term. Teamwork is a matter of appreciation of individual and collective skills and requires the conviction that cooperation and collaboration are professional values. In business areas, teams building is usually driven by productivity, in other words, more efficient teams are those that produce faster results, reducing costs and maximizing profits, so time management is a decisive factor in the implementation of activities.

However, there are many challenges in the process of teamwork building and, in many cases, there are conflicts and relationship problems that hinder the performance of activities. This paper presents strategies, based on cluster analysis, which aim to optimize the process of team building, homogeneous or heterogeneous, according to the characteristics of the activities to be developed.

TECHNICAL SESSION PW1

ANÁLISE RESISTIVA DE DIFERENTES ESTRUTURAS DE PONTES CONFECCIONADAS EM CARBOIDRATOS

Ariston da Silva Melo Junior, Marcelo Nogueira, Fábio Sevegnani

The present work is the analysis function of bridge structures in noodles prepared didactically with to students of engineering at the University Paulista. The procedure involved the preparation of 70 bridges that have undergone compression and tensile test in the laboratory on the campus of the University itself Vila. It was observed that 90% of the models supported an average load of 12 kgf, and the length of the models which bore the cargo in the linear range was 100 to 110 cm. By analyzing the variation in height of each of the bridges noodle model and its relation to axial load of tensile / compression, it may be noted that the height of the bridges has not had a great influence on the increase of the resistance load. Regarding the average height of bridges, 90% of the models supported an average load of 12 kgf. This finding showed that the action of the traction force on the upper beams of noodles was not so relevant when comparing with the compression that the basis of the models could bear.

SISTEMA DE MONITORAMENTO DE TEMPERATURA CORPORAL HUMANA UTILIZANDO SOFTWARE EMBARCADO E TEMPO REAL BASEADO EM COMPUTAÇÃO UBÍQUA

Douglas C. P. Alencar, Daniel P. R. Lima, Erick S. Koda, Luciano Paranhos, Marcelo Nogueira, Rodrigo C. Lossio

Due to overcrowding in Brazilian hospitals, medical errors are common when it comes to diagnosing patient. This may happens for the simple fact that there are not enough professionals in hospitals or because high cost of support equipment. With modern wireless devices it is possible to implement technologies to support lots of areas, including the medical one. Through a literature research, we found out that: ubiquitous computing is a branch of computing that has as a principle to allow human-computer interaction is increasingly present in the users lives. This area has presented important advances in recent decades due to the development of experimental techniques and discoveries of new branch in computational structures, demonstrating the relevance of the theme. Therefore, it was designed a system for monitoring human body temperature using embedded and real-time software based on ubiquitous computing, to assist and support the decision of the medical staff.

DESENVOLVIMENTO DE UM PROTÓTIPO PARA AUTOMAÇÃO DE COBERTURAS COM SENSOR DE CHUVA UTILIZANDO PLATAFORMA MICROCONTROLADORA ARDUINO

Renato Hildebrando Parreira, Graziele Borges de Souza, Juan José do Santos Souza, Marcelo Nogueira

For the protection of sites discovered, are deployed awnings and roofs with manual intervention, was designed in the automation of these coverages to be closed when necessary for the protection of sites discovered, are deployed awnings and roofs with manual intervention, targeting this situation was thought in the automation these coverings to be closed when necessary. This article aims to address the problem of roofing manuals without the presence of an actuator (person) can not be closed in case of extreme necessity, as well as the exposure of the soil that can not be soaked with rain. Here is described a solution to this problem using an Arduino microcontroller board, rain sensor and servo motor, which are used in real-time embedded software.

TOMADA DE DECISÃO PARA APLICABILIDADE DO PSP UTILIZANDO A LÓGICA PARACONSISTENTE ANOTADA EVIDENCIAL ET

Fábio Vieira do Amaral, Renato Hildebrando Parreira, Dolores Pineiro Mejuro, Helio Corrêa de Araújo, Ivan Ferraz, Ricardo Pim da Rocha, Jair Minoro Abe, Marcelo Nogueira

This article presents the Annotated Paraconsistent Evidential Logic Eτ enforcement (Eτ Logic) in assessing the feasibility of using the PSP as a tool to control the software processes quality. Using the favorable levels of evidence and unfavorable levels of evidence, we can define the certainty and uncertainty levels for decision making regarding the presented proposition.

OBJETIVOS E VANTAGENS NA APLICAÇÃO DOS PROCESSOS PSP E TSP

Fábio Araújo Quintas, Adilson Pereira da Cruz, Raphael Alves, Cristian Costa, Massayoshi Pardo, Marcelo Nogueira

The paper presents an exploratory research aiming to pass the reader the importance and benefits of making improvements in the processes of an enterprise . The end result is to ensure that the product is delivered to the customer on the agreed date and quality. Software quality is directly linked to the efficiency of the development process of a company and have been created for this process (PSP/TSP) that focus on training individuals and development teams. One of the key factors in the efficiency of a process model of organizational software are the first people who need to know, believe, participate, and have committed to be part of the organizational process model, reaching more fully the continuous quality improvement.The use of models and methodologies such as PSP and TSP aims mainly manage software projects in order to obtain metrics for improving the development process.

ANÁLISE DE DESEMPENHO E ACELERAÇÃO DE HARDWARE APLICADO À CRIPTOGRAFIA: UM ESTUDO APOIADO NA LÓGICA PARACONSISTENTE

André Gomes de Lira Muniz, Marcelo Nogueira, Fábio Vieira do Amaral

The present study is directed to the analysis of performance and hardware acceleration applied to encryption: supported paraconsistent. to achieve this, we developed a literature search identifying the types of cryptographic features and its measurement, establishing a selection between cryptographic methods to meet the need for a specific control for efficient and effective mitigation of the study.

COMO A EFICÁCIA DO PERSONAL SOFTWARE PROCESS PODE SER REFORÇADA E VALIDADA POR TEORIAS DA PSICOLOGIA E DA ADMINISTRAÇÃO DE EMPRESAS

Wesley Rodrigues da Silva, Marcelo Nogueira

The Software Process Improvement are effective means to increase the productivity, quality and reduce development costs, especially the Personal Software Process, Team Software Process, and Capability Maturity Model. In this paper, the relationship between the Personal Software Process and known theories of Psychology and Business Administration are investigated, aiming for theoretical bases which explains and validates the process. Factors like resistance to change and organizational development are explained, confirming the applicability of the Personal Software Process and focusing the attention to the phases that may lead the implementation to failure.

TECHNICAL SESSION PW2

SISTEMA ESPECIALISTA PARA DETERMINAÇÃO DO ÍNDICE DE AGLOMERAÇÃO DE MATRIZES PESADAS

Mario Mollo Neto, Danilo Florentino Pereira, Irenilza de Alencar Nääs, Luis Roberto Almeida Gabriel Filho, Marcelo Nogueira

Estimate the thermal comfort of poultry with precision is becoming increasingly important for the industry due to small profit margins in the sector and the need to reduce production losses. The aim of this study was to estimate the thermal comfort of broiler breeders reared in a climatic chamber under controlled environments known from the analysis of the clustering behavior of the group, using techniques of image analysis in standard RGB movies. The images were processed to highlight areas of interest and then were extracted values of area and perimeter of the forms assumed by groups of birds. It was found that in the analysis agglomeration index was influenced by the air

temperature and the ammonia concentration. This result validated the agglomeration index as a potential indicator of wellbeing birds thermal and fostered the software development, allowing automatic monitoring of the production environment.

AS PATENTES E O ÍNDICE GLOBAL DE INOVAÇÃO (BRICS) APLICAÇÃO DE LÓGICA PARACONSISTENTE

Liliam Sayuri Sakamoto, Demésio Carvalho de Sousa, Jair Minoro Abe, Marcelo Nogueira, Rodrigo Franco Gonçalves

This article recognizes patents importance and their impacts in Global Innovation Indicator and BRICS economics development. A tool application based in Paraconsistent Logic support strategic indicators delimitation and competitive strategy improvement. This analysis is supported by common attribute details between countries in the same global innovation ranking. These product and process innovation indicators like Technological Innovation were right directly connect to startups enterprises, but the mark and patent registration was a critical factor to success in this process. In Brazilian innovations requirements, are achieved by: technological innovation kernels of actions, startups enterprises incubations, startups accelerations, government actions, universities and federals organizations, where Brazil Innovation Indicator shows patents scenario and the economical development, but could establish some decision take options and competitive advantage assurance.

QUALIDADE NO SOFTWARE PARA UM CARREGADOR DE BATERIAS AUTO-ORIENTÁVEL

Álvaro André Colombero Prado, Jair Minoro Abe, Marcelo Nogueira, Pedro Luiz de Oliveira Costa Neto, Liliam Sayuri Sakamoto, Cristina Correa de Oliveira

Nowadays, there is current search for expressive devices which brings technological innovations, constituting sustainable solutions to the problems faced by people in different situations, leading to a continuous effort in improving techniques and processes, focusing on software quality. In situations of energy shortage, this interest was grounded in the pursuit of reduced environmental impact keeping with maximum results, where solutions conventionally adopted generate high environmental impact, since the work with the burning of fossil fuels, resulting in carbon emissions. Through Bibliographic Search, a sustainable alternative, can be reached through the characteristics of the ISO / IEC 9126-1 - Software Engineering. This article aims to introduce them to the applicability of Software Quality in the design of a battery charger with self-oriented solar panel, which operates independently of the grid, with a low environmental impact.

MONITORAMENTO DE RISCO EM ÁREA DE TELECOM APOIADA PELA ISO 31.000, COBIT E CONJUNTO DE FRAMEWORKS

Liliam Sayuri Sakamoto, Álvaro André Colombero Prado, Jair Minoro Abe, Marcelo Nogueira, Cristina Correa de Oliveira

This analysis was developed by a Telecom company, with the goal of achieving an monitor Project about: operational problems, third part contracts and internal frauds, with the Best practices applications (NBR ABNT ISO 31000 – Risk Management, COBIT version 4.1, COSO ERM, ISO/IEC 27.001, FERMA and ITIL). Application methodology focuses in NBR ABNT ISO 31000 – Risk Management supported by tool that captures systems information and scenarios analysis. Project chosen Security Information area, after analysis execution; the proposed changes were informed. Results finding were about residential telecom canceled lines. Conclusion about application aligned Best practices and NBR ABNT ISO 31000 – Risk Management became a unique point by a company, not specific in Telecom issue only.

A UTILIZAÇÃO DO PSP NA MELHORIA DOS PROCESSOS

Delaine Ramos dos Santos, Fábio Vieira do Amaral, Marcelo Nogueira

PSP (Personal software process) was developed by watts Humphrey and development process is a software designed to be used by software engineers for the development of individual projects. The PSP is a great tool to help people in any area to improve their planning, their estimate, decrease errors, but there is a rejection of this

process, because for the psp work people who use it need to be extremely honest. In this study a group persons were subjected to use the psp for one week and after use of this process a questionnaire, where it was found that the psp helps in improving processes in the activity, but that its implementation is difficult.

POR QUE AS EMPRESAS NÃO UTILIZAM PROCESSOS EM PROJETOS DE SOFTWARE

Delaine Ramos dos Santos, Fábio Vieira do Amaral, Marcelo Nogueira

The software product is an important economic activity, so technical needs to ensure quality product and improve your production. Study through you can understand that there are a large number of projects and who can not use the number of cases that can be modified. This article is intended for submitting a research on why even failures with many projects in software business processes not adopt. The article presents the results of a survey made with several employees of a technology company and will be analyzed for analyzer using what is a tool that uses paraconsistent logic.

APLICABILIDADE DA AVALIAÇÃO DE RISCOS EM PROJETOS DE SOFTWARE BASEADA EM LÓGICA NÃO-CLÁSSICA

Marcelo Nogueira, Ricardo J. Machado

Software engineers in seeking to meet the challenges of today's professional demands undergo business where the risks inherent in these operations are diversified and exposure, not always estimated. Since a minority of professionals adopts risk management into their processes, this vulnerability may jeopardize the achievement of success. To ensure the quality of the software process, the application of risk assessment is required. Through a literature search and experimental was possible to identify some risk factors that should be evaluated. The meeting deadlines and estimated costs, compliance requirements, among others, are cited. To contribute to these software projects, this paper presents the applicability of a method of risk assessment supported by Logic Non- Classical for the purpose of transferring culture and training, providing adoption and mitigation of the negative influence of the risks to which they are exposed.

TECHNICAL SESSION PW3

APLICAÇÃO DO MÉTODO MULTICRITÉRIO AHP PARA A HIERARQUIZAÇÃO DAS ALTERNATIVAS DE EVASÃO NO CURSO SUPERIOR DE LICENCIATURA PLENA EM QUÍMICA DO INSTITUTO FEDERAL DE GOIÁS, CAMPUS INHUMAS, BRASIL: UM ESTUDO PRELIMINAR

Ricardo R. Dias de Lima, Márcia Cecília Ramos Lopes, Danila Fernandes Mendonça, Victor F. A. Barros, José Elmo de Menezes

Once truancy have been a constant challenge for educational institutions in Brazil, this article consists of a case study which aims to provide an initial overview of the school evasion of the superior courses in Brazil as a way to draw a default profile the evaded. For this study will be used the superior course of Full Degree in Chemistry offered at the Federal Institute of Education of Goiás, campus Inhumas. For this we use the AHP multicriteria method for ranking of the motives and factors school evasion in order to validate the proposed methodology and to fulfill the objective of this project. We want to turn the school into a significant learning space that guarantees the permanence student in higher education as well as to optimize the quality education, providing greater agility and force to the actions proposed by the institution and strengthening the teaching and performance of student.

SISTEMAS DE APOIO A DECISÃO BASEADO EM CONHECIMENTO PARA UMA EFICAZ GESTÃO DE FLUXO DE INFORMAÇÃO E CONHECIMENTO NAS ORGANIZAÇÕES: UM ESTUDO DE CASO

Victor F. A. Barros, Cleiton José da Silva

Knowledge and effective flow of information resources in organizations are increasingly valuable when associated with decision support systems. This may result in an anticipation of information, efficiency and effectiveness in decision making, improvement of information management which in turn becomes increasingly competitive

organizations. This article aims to examine, from a literature review, the decision support systems based on knowledge illustrating its application in a case study. Based on these analyzes, it was revealed that organizations are really worrying about the knowledge in the organizations as too about the organizational memory. This interrelated knowledge in the decision support systems assist and becoming more efficient and effective decision making in the organization.

ANÁLISE ESTATÍSTICA E DE PREVISÃO DO PREÇO DA SOJA NO ESTADO DE GOIÁS NA PROPOSTA DE ESTRATÉGIAS GOVERNAMENTAIS NO SETOR AGRÍCOLA BRASILEIRO

Cleber Jean Lacerda, Gregory Kravchenko, Nivaldo Pereira de Morais Júnior, Ricardo R. Dias de Lima, Clarimar José Coelho, José Elmo de Menezes, Victor F. A. Barros

This work aims to show the importance of the use of statistical methods for analysis and price forecasting in the Brazilian agricultural sector, specifically in relation to the soybean crop in the state of Goiás The database analyzed was provided by the Secretary of State for Management and planning of the State of Goiás (SEGPLAN). The variable studied was the monthly price per kg of soybeans in the period 1995-2011. Were used in linear regression statistical methods in order to provide a statistical model for predicting the price. The validation function is given by tests of hypotheses, caused in satisfactory results. In this sense, it is possible to work government strategies in relation to agricultural production in the state of Goiás using statistical methods studied, serving as a support tool.

ANÁLISE DA USABILIDADE DE PROGRAMAS ESCANEADORES DE PORTAS E FIREWALLS EM AMBIENTES DISTRIBUÍDOS HETEROGÊNEOS

Thays Pires Oliveira, Renato Gomes, Victor F. A. Barros, Rodrigo Cândido Borges

Systems dedicated to information security reach different levels of computer users. Considering the domestic users, it is observed that some programs aimed at information security are not customarily employed. Given this, this paper aims to assess the usability of two lines of such software, systems port scans and firewalls. A systematic review will address issues related to ease of use of programs in information security. Finally, qualitative and quantitative assessments aim to portray the interaction between users and the main programs for packet filtering and port scanners, especially, presenting difficulties for these jobs noncommercial computing environments.

A IMPLANTAÇÃO DE DISTRITOS INDUSTRIAIS COMO ESTRATÉGIA DE DESENVOLVIMENTO ECONÔMICO LOCAL

Antonio Ricardo Chiquito, Vera Mariza Henriques de Miranda Costa

The Brazilian municipalities in the pursuit of local economic development, adopt a strategy of establishing clusters of companies. For implementation and evaluation of this strategy it is necessary to know the characteristics of these clusters: industrial districts, clusters, local clusters etc. The municipality Andradina/SP/Brazil, with 55,510 inhabitants in 2012, created its first industrial district in 1982, aiming its economic development. However, the results expected were not achieved due to the strategies and policies adopted and the companies responses. Law was enacted in 2011, focused on local economic development, including the creation of new districts and granting of benefits. In this direction, the main objective of the research that supports this work is to evaluate, in confrontation, contexts and conditions in which districts were proposed, in two "moments". Elements are taken as indicators for assessing the implementation of these districts: planning, public policy and productive vocation of the town and region.

O USO DA GESTÃO DO CONHECIMENTO E DA TECNOLOGIA DA INFORMAÇÃO NA MELHORIA DO PROCESSO PRODUTIVO DE UMA INDÚSTRIA AUTOMOBILÍSTICA

Elaine Cristina Batista Aloisio, Kelly Alonso Costa, Lidia Angulo Meza

The use of information and knowledge in the innovation of products and services of a company in order to meet demand in an increasingly demanding competitive environment has been the biggest challenge for companies. This paper aims at the analysis of an information system implemented in an automotive company that promotes productivity improvements, reduced complexity and costs in their assembly processes. It identifies obstacles in the

use of information technology and proposes solutions compatible with the industrial structure of the company, in order to seek improvements in the management of knowledge and innovation, obtaining competitive advantage in the market. It was concluded at the end of this study it is possible to become more agile, flexible, profitable and sustainable the operating procedures of a company, modifying an old bureaucratic corporate vision through interaction between people of the manufacturing process and administrative surpassing the challenges posed by organization.

AVALIAÇÃO DE RECONHECEDORES DE VOZ PARA PORTUGUÊS BRASILEIRO NA PLATAFORMA ANDROID

Márcia Fontes Pinheiro, Antonio F. L. Jacob Junior, Ádamo Lima de Santana

The growing use of mobile devices has providing an increase in digital inclusion, however people with disabilities are not fully included in this scenario because there are few applications that promote accessibility. This problem can be solved by the use of different interface types. In this scenario, the technology of Automatic Speech Recognition (ASR) can be used in natural interfaces of interaction human-computer. In this context, the aim of this work is to show the performance comparison between the speech recognizers for Brazilian Portuguese (BP) Google Android and Nuance Dragon on converters applications from Speech to Text (STT) for mobile devices based on Android Operating System. Performance tests were made with users divided into groups by age, where users tested in real environments two applications, each implementing voice recognizers mentioned. The goal of STT applications is to provide accessibility for people with physical disabilities to computational systems.

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