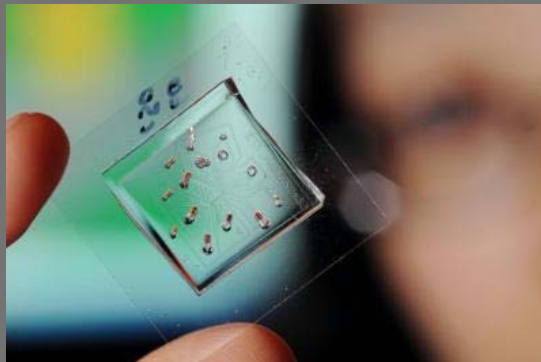2012

Reporte de Vigilancia Tecnológica Sector TIC

"image processing"
"reconocimiento de imagen"

IDITS
Unidad de Vigilancia Tecnológica e Inteligencia Competitiva

INDICE

Contenido

INTRODUCCIÓN

El IDITS a través de su Unidad de Vigilancia Tecnológica e Inteligencia Competitiva -VT e IC- tiene el agrado de presentar su primer Reporte de VT para el Sector TIC mendocino; agradecemos el continuo asesoramiento de Alessandro Comai; CEO de Miniera SL y la colaboración de los empresarios del sector TIC de Mendoza.

Nuestro propósito es aportar en este sector inputs de valor estratégico que puedan repercutir de forma positiva en su nivel de desarrollo.

Los objetivos deseados son los de:

1. Ayudar a la dirección de los proyectos tecnológicos en la configuración de su estrategia.

2. Permitir incorporar nuevos avances tecnológicos a los propios productos.

3. Identificar oportunidades de inversión y comercialización.

4. Identificar socios para colaborar ahorrando costos en I+D y desarrollos paralelos.

5. Identificar amenazas potenciales que puedan suponer pérdida de mercado.

Nuestro trabajo se centró en fuentes globales para poder identificar el entorno tecnológico de las TICs relacionado con el procesamiento de Imágenes (Image processing) a nivel mundial.

A tal fin, el presente reporte de VT está dividido en cinco secciones; en el de **Actualidad** se intenta brindar aquellos temas que en el presente año han ganado las distintas agendas de los referentes en tecnologías, desde los meses de mayo a los primeros días de noviembre.

Sección **Oferta Tecnológica y Divulgación Científica** recoge la oferta tecnológica y científica existente a nivel global; de esta forma se hace visible las distintas líneas de trabajo de áreas de I+D en el ámbito público y en el privado.

En **Patentes** se pretende aportar algunos resultados y avances científicos que permita a las empresas interesadas observar e incentivar el desarrollo de nuevos y mejores productos y servicios.

En **Tendencias**; se puede afirmar lo que Wolfgang Wahlster, alguna vez dijo: "las TIC son el primer motor de la innovación y el software es su combustible"; es innegable que el avance de este sector se lleva a cabo a gran velocidad; las redes se multiplican, junto a ello la conectividad, entretenimientos, reciclajes inteligentes, redes móviles, memorias digitales en productos etc, todo ello y mucho más afirman la velocidad de los hechos.

La UVT e IC del IDITS viene transitando en sus primeras experiencias. El Sector TIC es uno de nuestros primeros eslabones de una cadena de actividades que pensamos fortalecer en el tiempo; es nuestro deseo para el próximo año continuar con información de valor no sólo para las TIC sino también, fortalecer otras cadenas productivas.

Por último, es importante recordar que la Vigilancia Tecnológica y la Inteligencia Competitiva están inseparablemente unidas; en muchas ocasiones se usan los dos términos "Vigilancia Tecnológica -

Inteligencia Competitiva" (VT-IC); este será nuestro caso.

Entre las dos disciplinas hay una diferencia de matiz, mientras que la VT pone el énfasis en la búsqueda y la obtención de información relevante para la toma de decisiones, la Inteligencia Competitiva se refiere al mismo proceso, pero poniendo el énfasis en la elaboración de esta información implicando a menudo la obtención de nuevas informaciones para facilitar el proceso de entendimiento de la misma.

Es nuestra intención que la presente información pueda ser de interés y agregue valor al sector de las TIC de Mendoza.

ACTUALIDAD

Dos técnicas biométricas autentican la identidad de los usuarios de móviles.

04/06/2012

Geometría de la mano. La técnica de la geometría de la mano se basa en el hecho de que las manos de cada persona poseen diferentes características geométricas, como el ancho de los dedos o la longitud de la palma. A partir de tres fotos de la mano, los algoritmos desarrollados son capaces de extraer estas singularidades de cada mano para generar un patrón único para cada persona que se utilizará para identificar al usuario.

http://www.tendencias21.net/Dos-tecnicas-biometricas-autentican-la-identidad-d

Laser System Paints Information on the Road Ahead

15/05/2012

 Head-up displays, which project visual data onto the windshield and the driver's view of the road, are debuting in a growing number of car models. But more vibrant, compact, and efficient displays being developed by Microvision, a company based in Redmond, Washington, could help the technology become much more common.

http://www.technologyreview.com/computing/40311/

INNOVACIÓN

Un paso decisivo hacia la fabricación de grafeno en cantidades industriales

(NC&T) El material, llamado grafeno, consiste en una capa de grafito 50.000 veces más fina que un cabello humano, con propiedades electrónicas únicas.

El grafeno tiene el potencial para reemplazar al silicio en procesadores de alta velocidad y otros dispositivos.

http://solociencia.com/quimica/10041503.htm

EVT announces Industrial 3D-Eye vision system

02/06/2012

May 31, 2012 - EVT announces Industrial 3D-Eye, which is suitable especially for industrial environments. With this 3D sensor, three-dimensional tasks can be solved now even more competitive. The Industrial 3D-Eye is equipped with powerful illumination, put into a robust aluminum metal case and its housing is completely waterproof, making it applicable in all industrial environments. The Industrial 3D-Eye opens up new possibilities in the range of robotics: amongst others in the range of palletization and depalletization but also in the sortation of components on the assembly line. The expanded EyeVision system opens up new application ranges of robot control by the combination of a depth sensor and a normal camera.

http://www.automation.com/custom/rsslink.php?itemId=50268&pageId=2525

EVT introduces ChipEye 5Side vision command set

08/06/2012

June 6, 2012 - EVT introduces ChipEye 5Side vision command set for ChipControl, for the inspection of various semiconductor parts. With the 5 sided slot in ChipEye, a component part can be captured with the camera and evaluated by the software from five different sides at the same time – top side and four flanks.

http://www.automation.com/custom/rsslink.php?itemId=50330&pageId=2525

PPT Vision Announces MX20 Processor

30/05/2012

May 17, 2012 - PPT Vision introduced the compact, entry-level MX20 vision processor to support simple machine vision applications with up to two unique camera inspections.

http://www.automation.com/custom/rsslink.php?itemId=50089&pageId=2525

OFERTA TECNOLÓGICA

3D RGB holographic display for real time images

30/05/2012

Technology collaboration - 12 DE 0855 3P52 REQUEST. A multinational automotive supplier with research and development locations in Europe, North America and Asia is seeking technologies to generate real time, 3D and color holographic images. The aim is to use the display in next generation automotive interior. The technology offered can either be at laboratory stage or fully developed. Industry, research organizations and academia with suitable solutions are welcome for technical cooperation.

http://www.seimed.eu

Intuitive and fun browsing of digital picture collections

20/04/2012

Technology collaboration - 12 GB 4103 3OY9 OFFER A UK company has developed software for spatial representation, animation and interaction with image collections. The users are people who browse digital photo collections, product catalogues etc online and on mobile devices. Advantages include intuitive, faster and more fun browsing. Developers and owners of e-commerce, multimedia and social networking software and mobile device interfaces are sought for licensing and joint design of unique appearances.

http://www.seimed.eu

DIVULGACIÓN CIENTÍFICA

A novel technique for image steganography based on a high payload method and edge detection

01/06/2012

Expert Systems with Applications Volume 39, Issue 14View Within Article Table 1. Comparison of results for the proposed method and the mehod in (Chen et al.).

http://www.sciencedirect.com/science?_ob=GatewayURL&_origin=IRSSSEARCH&_method=c

Face Recognition from Low Resolution Images

31/05/2012

Book Chapter Face Recognition from Low Resolution Images Tomasz Marciniak, Adam Dabrowski, Agata Chmielewska and Radosław Weychan Communications in Computer and Information Science, 1, Volume 287, Multimedia Communications, Services and Security, Pages 220-229

http://www.springerlink.com/content/x8552h8602648688/

Visual tracking of numerous targets via multi-Bernoulli filtering of image data
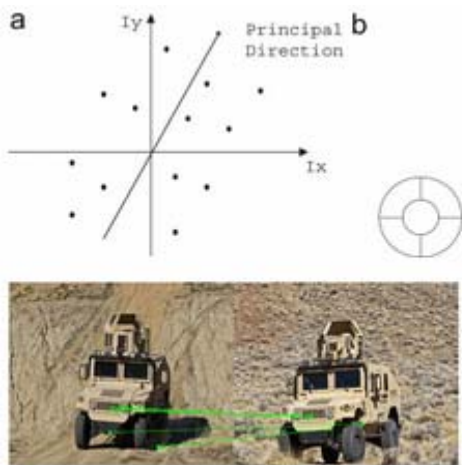
31/05/2012

This paper presents a novel Bayesian method to track multiple targets in an image sequence without explicit detection. Our method is formulated based on finite set representation of the multi-target state and the recently developed multi-Bernoulli filter. Experimental results on sport player and cell tracking studies show that our method can automatically track numerous targets, and it outperforms the state-of-the-art in terms of false positive (false alarm) and false negative (missing) rates as detection error measures, and in terms of label switching rate and lost tracks ratio as tracking error measures.

http://www.sciencedirect.com/science/article/pii/S0031320312001616

Image matching based on orientation–magnitude histograms and global consistency
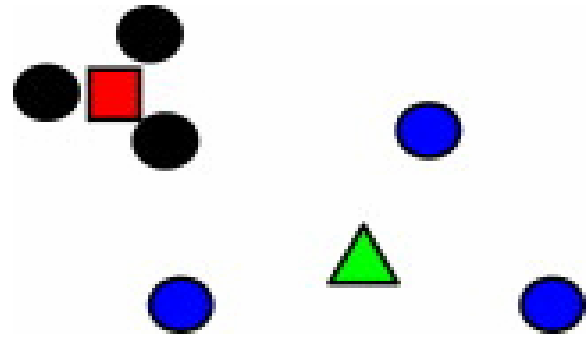
31/05/2012

A novel image matching method based on the gradient space is proposed. Image pyramid combined with the Hessian matrix is used to detect scale-invariant interesting points. A new descriptor i.e. an orientation–magnitude histogram is introduced to describe the image content around an interesting point. The proposed local descriptor is proved to be invariant to image rotation. Since the matching result based on the similarities of the descriptors of interesting points always contains outliers, a steepest descent method that optimizes the global consistency of interesting points is presented to remove false matches. The experiments show that the proposed approach is invariant to rotation and scale, robust to the variation of focal lengths, illumination change, occlusion, noises and image blur. Our approach shows better performance than SIFT on multi-view and affine-transformation images. The application of the proposed method to image registration exhibits a good result.

http://www.sciencedirect.com/science?_ob=GatewayURL&_origin=IRSSSEARCH&_method=c

Enhanced fisher discriminant criterion for image recognition

31/05/2012

Many previous studies have shown that image recognition can be significantly improved by Fisher linear discriminant analysis (FLDA) technique. However, FLDA ignores the variation of data points from the same class, which characterizes the most important modes of variability of patterns and helps to improve the generalization capability of FLDA. Thus, the performance of FLDA on testing data is not good enough. In this paper, we propose an enhanced fisher discriminant criterion (EFDC). EFDC explicitly considers the intra-class variation and incorporates the intra-class variation into the Fisher discriminant criterion to build a robust and efficient dimensionality reduction function. EFDC obtains a subspace which best detects the discriminant structure and simultaneously preserves the modes of variability of patterns, which will result in stable intraclass representation. Experimental results on four image database show a clear improvement over the results of FLDA-based methods.

http://www.sciencedirect.com/science/article/pii/S0031320312001574

Automation of thermographic 3D modelling through image fusion and image matching techniques
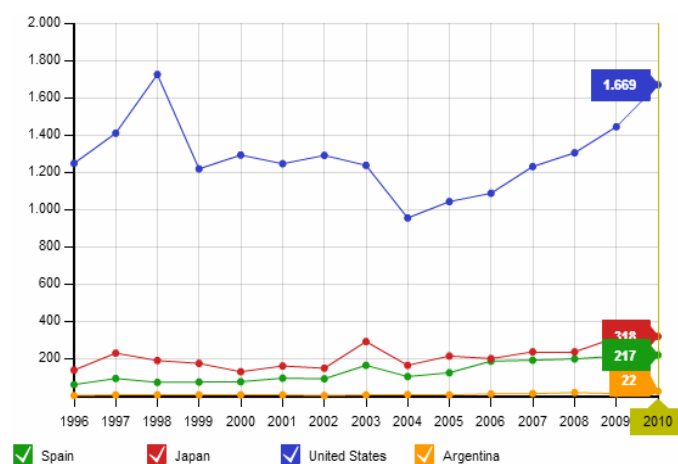
31/05/2012

Infrared thermography has proved to be an adequate technique for building inspection, as it can be used to determine energy efficiency and also to detect defects in construction. Geometry and spatial relationships are also very important in building inspection because they make location of thermal defects and measurement of affected surfaces possible. A procedure to fuse automatically generated infrared mosaics and visible images to combine geometric information with thermal data in the same image is described in this paper. Fused images are then used for the automatic generation of a thermographic 3D model of the building through image matching, where apart from having thermographic information available, geometric measurements can be performed. The proposed methodology is suitable for building inspection, where working space and time are usually limited so a reduction on the number and size of instruments is appreciated. Furthermore, automation of the process diminishes the error in results by avoiding operator's influence.

http://www.iaarc.org/publications/fulltext/S24-3.pdf

Publicaciones por país:

Comparando en un ranking por País (España, Japón Estados Unidos y Argentina) la Producción relacionada a artículos científicos de TIC; puede observarse que Argentina recién comienza a destacarse después de 2007.

Gráficamente puede observarse un leve repunte en publicaciones científicas relativas al tema de las TIC.

Evolución número de publicaciones

Nótese la incipiente participación de Argentina respecto a las publicaciones mencionadas.

	Spain	Japan	United States	Argentina
1996	59	137	1,247	1
1997	91	228	1,408	4
1998	71	188	1,724	4
1999	73	173	1,218	4
2000	75	128	1,292	4
2001	93	158	1,245	4
2002	90	147	1,289	1
2003	162	289	1,236	4
2004	102	162	953	5
2005	122	213	1,041	4
2006	185	198	1,087	8
2007	189	235	1,229	10
2008	197	235	1,303	16
2009	212	313	1,444	10
2010	217	318	1,669	22

Matriz comparativa. Fuente: IDITS

PATENTES

Device for registering and managing book based on computer vision and radio frequency identification technique

24/10/2012, US2012268606A1 (A1)

The invention discloses a computer vision and radio frequency identification technology based book enrolment management apparatus, which completes the book enrolment flow in the one-apparatus, one-stop and one-step ways, and creates a new foundation for the future automatic book management requirement. The technical solution is that: the own characteristic of the book is extracted and analyzed by the embedded information technology, computer vision and image processing technology and Radio Frequency Identification (RFID) technology so as to fast collect, store, rectify, combine and analyze the image and acquire the characteristic of each registered book, and record them in the storage database and the RFID tag.

Computer vision-based methods for enhanced JBIG2 and generic bitonal compression.

10/10/2012, US2012257834A1 (A1)

A system and method of symbol matching may include a processor configured to determine which pixels of a first symbol are tangent pixels; for each of the determined tangent pixels, determine whether a second symbol includes a pixel corresponding to the tangent pixel that includes at least one same tangent constraint as that of the tangent pixel; accept the first and second symbols as a match based on shared tangent constraints

conditional upon a determination that the second symbol includes for each of at least a subset of the tangent pixels of the first symbol a corresponding pixel that includes the at least one same tangent constraint as that of the tangent pixel; and generate a document including a single symbol that is mapped to the first and second symbols.

Computer vision gesture based control of a device.

08/08/2012, US2012200494A1 (A1)

A system and method are provided for controlling a device based on computer vision. Embodiments of the system and method of the invention are based on receiving a sequence of images of a field of view; detecting movement of at least one object in the images; applying a shape recognition algorithm on the at least one moving object; confirming that the object is a user hand by combining information from at least two images of the object; and tracking the object to control the device.

Vision-Based computer control

11/07/2012, US2012176383A1 (A1)

Disclosed herein is a method of controlling a computing device having a display. The method comprises identifying a point on the display at which a user's gaze is directed; determining whether an eye of the user has accommodated toward a near-field refractive state; and increasing, based on the determining, the resolution of a region on the display of the computer system, the region being centered on the identified gaze point.

Computer vision based two hand control of content

11/07/2012, WO2012093394A2 (A2)

A system and method for manipulating displayed content based on computer vision by using a specific hand posture. In one embodiment a mode is enabled in which content can be manipulated in a typically two handed manipulation (such as zoom and rotate).

Vision-based input interface and method of computer, and system and method for processing manuscript message using the same

30/06/2012, TW201227397A (A)

A vision-based input interface of a computer is provided. The vision-based input interface is used to control the computer and includes at least one controlling unit, an image sensing module, a receiving module, and an image analyzing module. The controlling unit has an execution condition defined therein. The image analyzing module receives an image captured by the image sensing module via the receiving module and recognizes the received image. The image analyzing module creates a background object in accordance with the outline of a plane body shown inside the image. When the image analyzing module recognizes that a target object having a pair of contrast colors arranged adjacent to each other appearing over the background object, the image analyzing module traces the motion of the target object and further outputs a motion tracing data to the controlling unit. When the motion tracing data conforms to the execution condition, the controlling unit starts to execute. Therefore, a user can control the computer by gesturing with a guiding device having a pair of adjacent contrast colors.

Planetary vehicle positioning method based on computer vision and VLBI combined adjustment

26/06/2012, CN102519469A (A)

The invention provides a planetary vehicle positioning method based on computer vision and VLBI combined adjustment, which belongs to methods of navigation and positioning for planetary probes advancing on the surface of a planet. The invention aims to realize reliable and high precision navigation and positioning for planetary probes. The method comprises the following steps: (1) computer vision positioning modeling; (2) VLBI positioning modeling; and (3) computer vision and VLBI combined adjustment positioning. The method provided in the invention enables navigation and positioning for a planetary probe advancing on the surface of a planet to be realized, has the advantages of a fast positioning speed, high precision, etc., and provides technical support for scientific detection of planetary probes in China.

Logistics node facility layout optimization method based on computer vision

26/06/2012, CN102521443A (A)

The invention discloses a logistics node facility layout optimization method based on computer vision. The method comprises the following steps: introducing Multi-Agent technique and CA (cellular automata) simulation technique to construct a geographical simulation system based on computer vision technique; representing plot terrain and constraint conditions of logistics facility by computer graphics; constructing a three-layered Multi-Agent model with optimized logistics node facility layout; generating an initial solution based

on the advantage of a construction algorithm on creating an initial scheme; and combining a genetic algorithm and simulated annealing algorithm to provide a logistics node facility layout optimization algorithm by adopting the idea of an improved algorithm. The method provided by the invention can achieve optimization of multi-constraint large-scale logistics node facility layout under complex topographic conditions, and can be widely used in the fields of urban planning, transportation, large-scale integrated circuit design, architectural design, machinery manufacturing, aerospace, and so on.

Interactivity Via Mobile Image Recognition

20/06/2012

Abstract of US2012154438 (A1) Tooltip Select language Systems and methods of interacting with a virtual space, in which a mobile device is used to electronically capture image data of a real-world object, the image data is used to identify information related to the real-world object, and the information is used to interact with software to control at least one of: (a) an aspect of an electronic game; and (b) a second device local to the mobile device. Contemplated systems and methods can be used to gaming, in which the image data can be used to identify a name of the real-world object, to classify the real-world object, identify the real-world object as a player in the game, to identify the real-world object as a goal object or as having some other value in the game, to use the image data to identify the real-world object as a goal object in the game.

http://worldwide.espacenet.com:80/publicationDetails/biblio?CC=US&NR=2012154438A

COMPUTER VISION BASED HAND IDENTIFICATION

20/06/2012, WO2012081012A1 (A1)

There is provided a method for computer vision based hand identification, the method comprising: obtaining an image of an object; detecting in the image at least two different types of shape features of the object; obtaining information of each type of shape feature; combining the information of each type of shape feature to obtain combined information; and determining that the object is a hand based on the combined information.
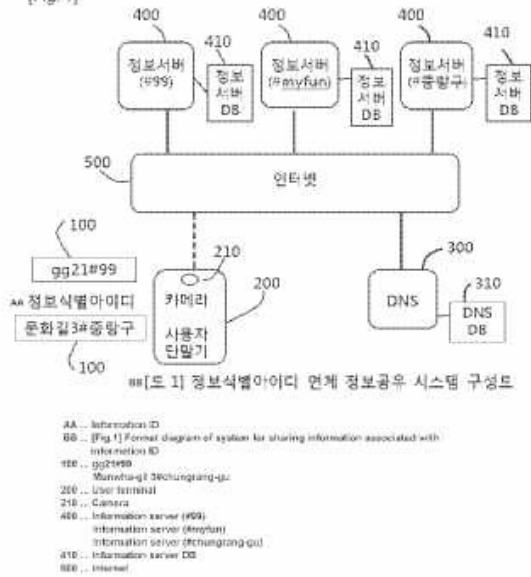
Method for sharing online information by camera image input and text recognition of universally unique character string information id and system thereof

30/05/2012

Abstract of WO2012070708 (A1) Tooltip Select language The present invention relates to a method for sharing online information by camera image input and text recognition of a universally unique character string information ID and a system thereof, wherein: text, numbers, and delimiters which are included in a digital image that is inputted by a camera mounted on a user terminal are recognized through a text recognition function; by using an information ID of a character string which is structured in a "object identifier#information server identifier" type in which said recognized text, numbers, and delimiters are formed, an IP address is obtained through a DNS, wherein the IP address corresponds to the "information server identifier" of said information ID among a plurality of information servers distributed over the Internet; an information server that is identified by the obtained IP address is automatically accessed; and information corresponding to the "object identifier" of the information which is registered

and stored in the accessed information server is requested and provided, and then an application service is provided by using the provided information.

http://worldwide.espacenet.com:80/publicationDetails/
biblio?CC=WO&NR=2012070708A

Análisis de Patentes

En el siguiente ejemplo se realizó una búsqueda de patente; en este caso, se investigaron patentes sobre "image recognition".

La búsqueda se ha realizado empleado ""image recognition" en el título y ha sido filtrada por la palabra "process* en el titulo y sumario en los registros de patentes publicados desde el año 2000. El resultado arrojó un total de **497** patentes (463 Familias) que fueron analizadas empleando una perspectiva global.

Resultados Globales:

Número total de Solicitantes : 368

Número total de Inventores: 941

Número de Publicaciones según año: 2011 [61] 2008 [59] 2009 [58] 2010 [46] 2005 [43] 2006 [39] 2001 [30] 2004   [30]   2007   [29]   2003   [28]   2002   [28]   2000   [16]   2012   [13] **Solicitantes   :**   Otros   [32],   Toyota   motor   corp   (--   )   [16],   Aisin   aw   co   [14] **Inventores destacados:** Nakamura Masaki [13] Hiraishi Junji (jp) [8] Nakamura Motohiro [5] **Número de Patentes   según   IPC   :**   g06t1/00   [123]   g06t7/00   [117]   g06k9/00   [88] IPC G06: COMPUTING; CALCULATING; COUNTING[1]

Gráficas:
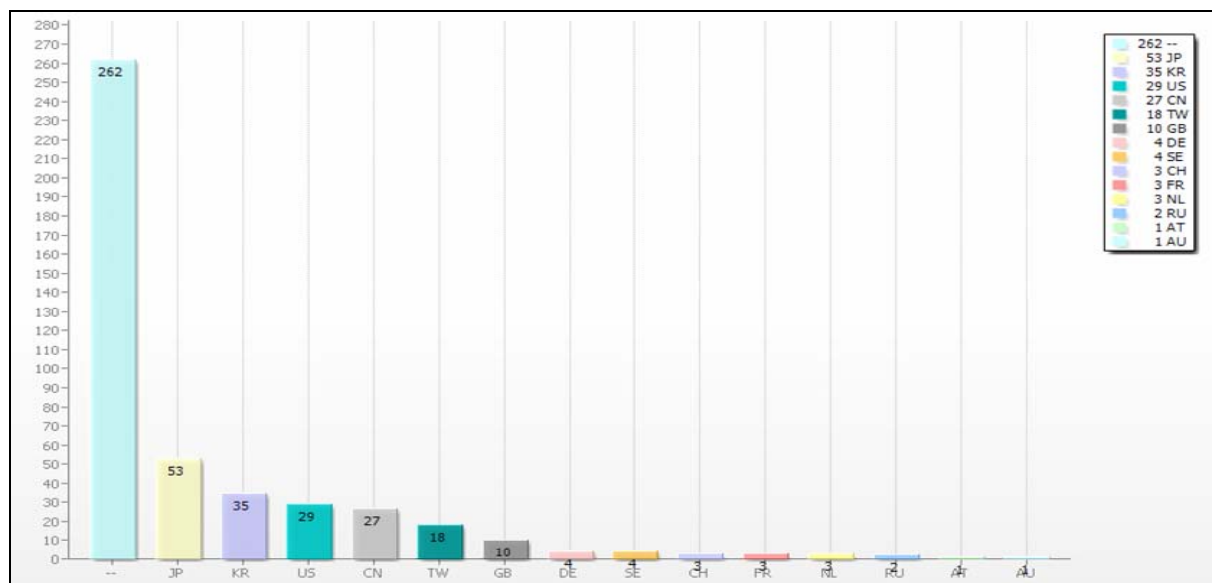A continuación se muestran algunas gráficas del resultado de análisis global.

Gráfico 1: Áreas Geográficas: Solicitantes

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[1] http://www.wipo.int/ipcpub/#refresh=page&notion=scheme&version=20120101&symbol=G06

Japón es el país que lidera seguido por Korea, EEUU, China y Taiwan. Por lo general es posible afirmar que los países asiático mantienen el   26.7% del total de patentes solicitadas.
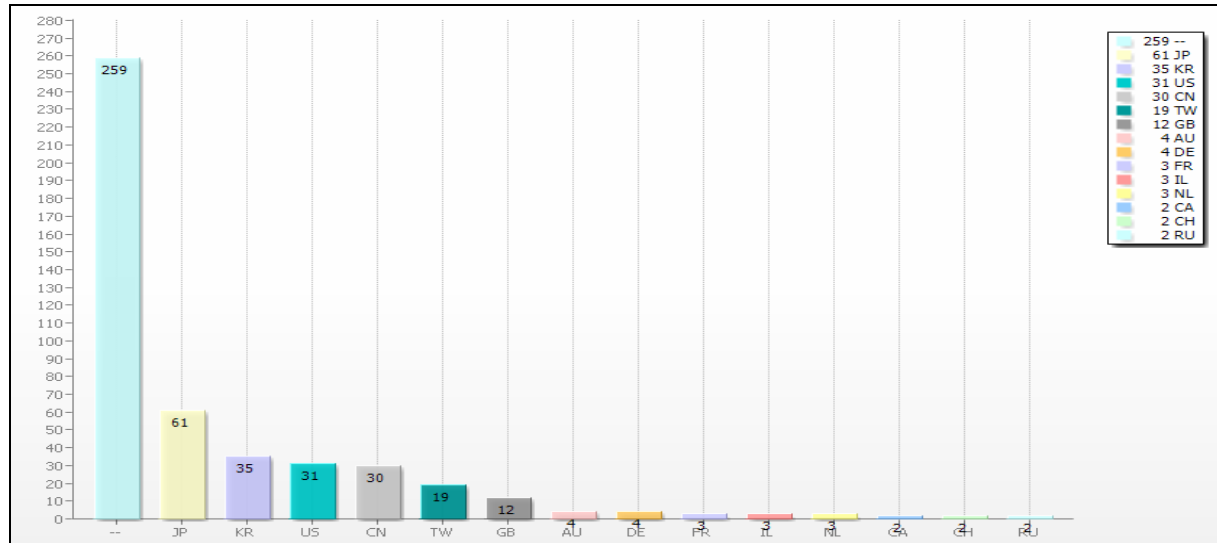

Gráfico 2: Áreas geográficas Inventores

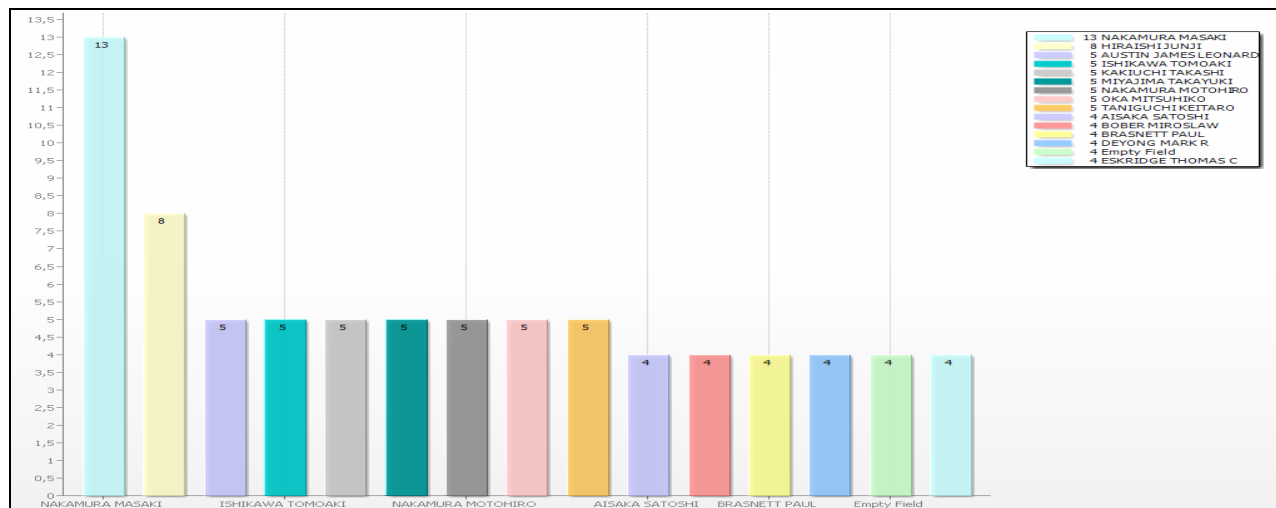De forma similar se muestra la gráfica de los inventores.

Gráfico 3: Ranking principales inventores

Nakamura Masaki destaca ser el inventor de   13 patentes y está seguido por Hiraishi Junji y   Nakamura Motohiro con 8 y 5 patentes respectivamente.
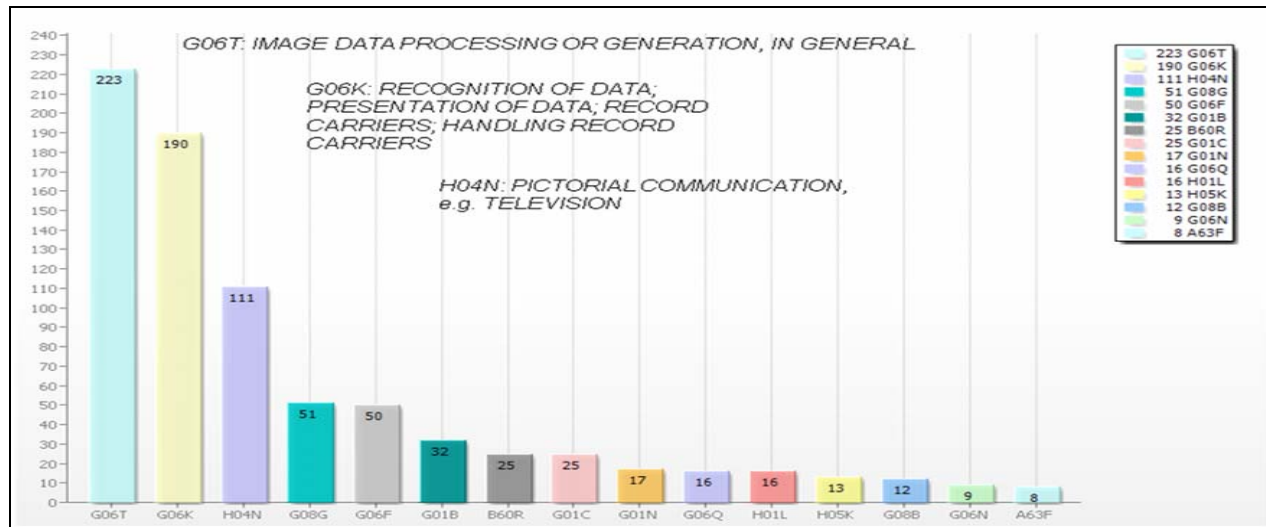
Gráfico 4: Áreas Tecnológicas IPC (4 dígitos)

La tecnología (IPC) más destacadas es "IMAGE DATA PROCESSING OR GENERATION, IN GENERAL" con un total de 223 patentes.
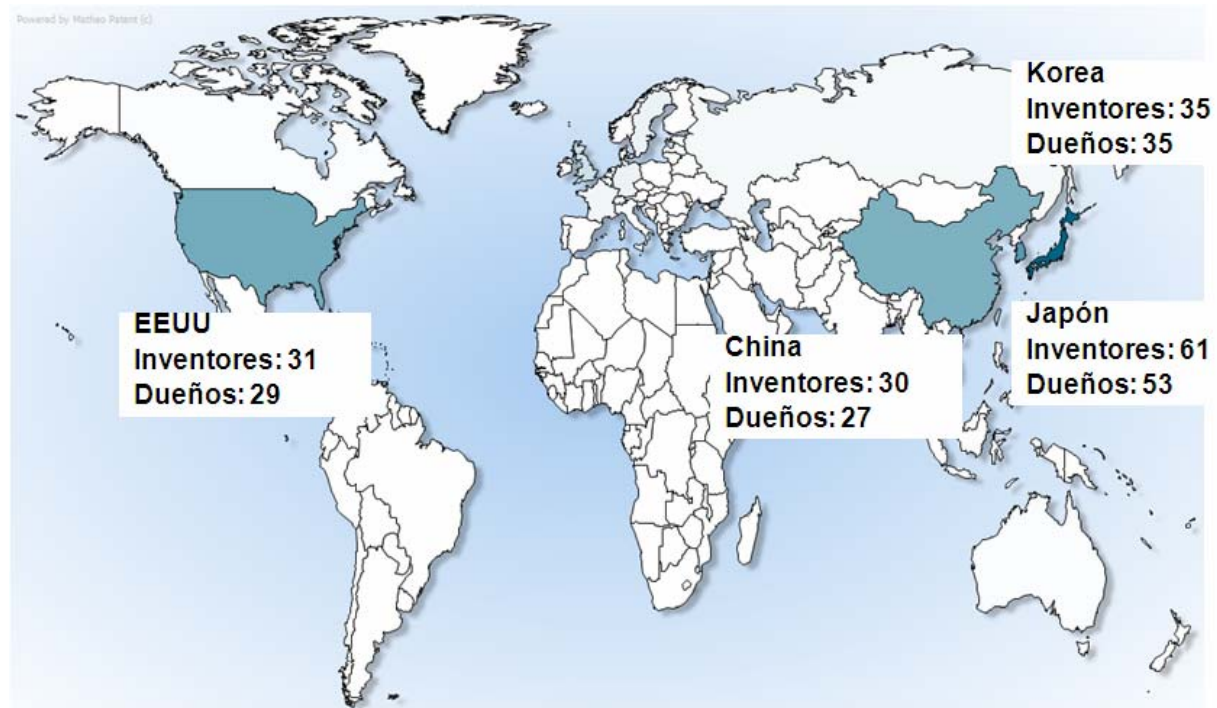

Gráfico 5: Áreas Geográficas Inventores y Solicitantes (Dueños)

Es posible observar que los países asiáticos lideran éste concepto (en cantidad)

Gráfico: Tag cloud del ejemplo citado

Gráfico: Cooperación entre países

Observación: La colaboración entre países en base

a la nacionalidad de los autores es insignificante.

TENDENCIAS

Cognex introduces: SensorView 2 display for Checker Vision Sensors

02/06/2012

 May 31, 2012 - Cognex announced SensorView 2, a smart display for Checker machine vision sensors. With SensorView 2, production engineers can fully configure, test and monitor Checker 4G vision sensors, without a PC being required at any stage. The SensorView display has a large 8.9" touch screen, making it easy to use and view on the factory floor. With built-in Ethernet-based communication, SensorView 2 can be installed anywhere Checkers are connected to a network.

http://www.automation.com/custom/rsslink.php?itemId=50269&pageId=2525

Nuevo sistema de detección de movimiento en 3D es 100 veces más exacto que Kinect

21/05/2012

La recientemente creada empresa Leap Motion ha demostrado su tecnología Leap 3D; un sistema de reconocimiento de gesticulación con una asombrosa precisión de 0.01 milímetros. La tecnología podría convertirse en un serio competidor de Kinect de Microsoft, cuya precisión ya supera en 100 veces. Diario Ti: En una demostración del producto enviada por Leap Motion a la publicación CNet puede verse, en la práctica, lo que significa una precisión de 0.01 mm. El producto consiste de un dispositivo USB dotado de sensores y cámaras, conectadas al software desarrollado por Leap Motion. En la demostración enviada a Cnet puede verse el procedimiento para desplazarse en un sistema operativo, navegar por Internet y acercar objetos al estilo de las pantallas multitacto. Disponible para desarrolladoresEstos días, Leap Motion ofrece a desarrolladores un paquete de demostración y SDK. La empresa anuncia el lanzamiento de una versión multiusuario para comienzos de 2013, a un precio de USD 70. Según sus creadores, Leap 3D tiene soporte para Windows y OS X. En este video, Leap Motion presenta su tecnología Leap 3D. Ilustraciones: Capturas de video. Recomiende este artículo a un conocido Articulos Relacionados:· Nueva tecnología táctil emula funcionalidad del monitor· Aplicación para Kinect podría salvar vidas en quirófanos· Microsoft describe el procedimiento empleado por Kinect para el reconocimiento facial· Tecnología anticipada por "Minority Report" se convierte en realidad
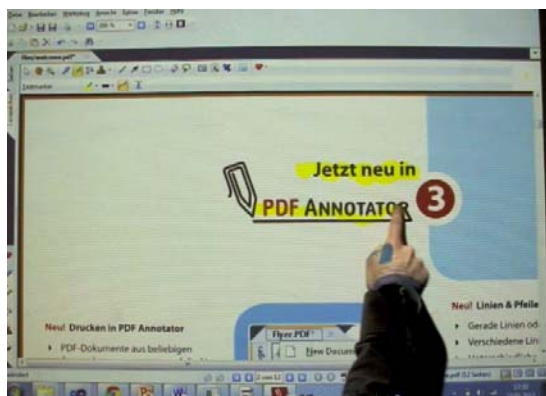
http://www.diarioti.com/noticia/Nuevo_sistema_de_deteccion_de_movimiento_en_3D_e

Ubi: convirtiendo cualquier pared en una pantalla táctil 3D

30/05/2012

 Con la ayuda de Microsoft, quién "invirtió" 20.000 dólares en el sistema tras ganar el concurso Kinect Accelerator, la compañía Ubi Interactive convierte el sueño de Minority Report en cualquier pared. Lo hace a través de Kinect construyendo pantallas táctiles que permiten la navegación en la red o

incluso jugar a videojuegos. Según Anup Chathotn, fundador de la compañía alemana: Ahora podemos convertir cualquier superficie en una pantalla táctil 3D. Es como todos los Windows Touch basados en gestos. Hemos querido comenzar con una experiencia que todo el mundo conoce...

http://hipertextual.feedsportal.com/c/33160/f/538984/s/1fd8ccb9/l/0Lalt10A40A0N0

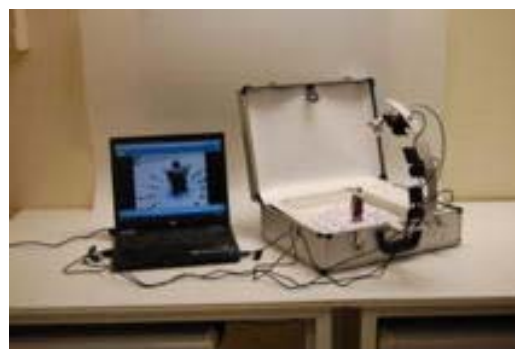## Spanish scientists invent an optical biosensor to analyze water quality

26/06/2012

Spanish scientists invent an optical biosensor to analyze water qualityResearchers at the Complutense University of Madrid's (UCM) Department of Chemistry have developed an optical biosensor that can determine in situ the quality of freshwater. This new biosensor analyzes microcystin-LR (MC-LR), the most frequently found toxin in water, which is produced by the uncontrolled proliferation of cyanobacteria (microorganisms that are also called blue-green algae). These produce frequently found toxin in water, which is produced by the uncontrolled proliferation of cyanobacteria (microorganisms that are also called blue-green algae). These produce cyanotoxins which are harmful to different types of organisms, including human beings. Thus they represent a significant health risk. The optical biosensor, based on antibody microarrays, is the work of the Chemical Optosensors & Applied Photochemistry Group (GSOLFA) of the Complutense University of Madrid's Department of Chemistry.

http://www.spaintechnologyforlife.com/icex/cda/controller/pageGen/0,3346,1549487

Un escáner rotatorio registra imágenes en 3D de objetos en movimiento

04/06/2012

El profesor de la Universidad Europea Miguel de Cervantes (UEMC) de Valladolid, Matías López, ha ideado un escáner rotatorio que permite capturar objetos en 3D. El sistema ha obtenido una de las becas del I Concurso de Prototipos Orientados a la Comercialización de la UEMC, iniciativa enmarcada en el proyecto T-CUE de la Junta de Castilla y León, y ha sido protegido como modelo de utilidad. Se trata de un sistema de bajo coste integrado en un maletín que consta de tres cámaras web y una plataforma rotatoria que hace girar el objeto para

que pueda ser capturado desde distintos ángulos. Como detalla el profesor, en la actualidad no existe ningún sistema que permita capturar en 3D imágenes en movimiento, lo que supondría un gran avance en el sector del cine o de los videojuegos. la posición y fuera calculando distancias, iluminación, etc", precisa.

http://www.tendencias21.net/Un-escaner-rotatorio-registra-imagenes-en-3D-de-obje

Corn Leaf Diseases Diagnostic Techniques Based on Image Recognition

28/06/2012

Book Chapter Corn Leaf Diseases Diagnostic Techniques Based on Image Recognition Juan-hua Zhu, Ang Wu and Peng Li Communications in Computer and Information Science, 1, Volume 288, Communications and Information Processing, Pages 334-341Download PDF (238.7 KB)

http://www.springerlink.com/content/h11x8j7x5475w863/

3D Imaging and Freakin' Lasers Help Slicer Cut Meat With Precision

19/06/2012

You've probably all have had the argument with a friend or loved one over who got the biggest piece of cake or meat. Or more annoying still, maybe you had to be the one to cut up a hunk of meat into equal pieces, which is quite difficult when such food usually comes in uneven shapes. If you're a butcher, though, technology has your back. The Libra 165C is a fixed-quantity meat slicer that uses 3D imaging and freakin' laser beams in order to cut meat equally. When you place the meat on the conveyer belt, the machine will scan your sirloin and render a 3D image of the meat. It does this

using a displacement sensor (that's the laser part!). Once the Libra has a cross section of the meat, it can cut slice up the meat evenly to the weight required, rather than making each slice the same thickness. This means when you go to buy a piece of meat in a store or butchers, you'll be charged the same price due to weight similarities, rather than differing amounts. Your browser does not support iframes. The machine was demonstrated at FOOMA Japan 2012 earlier this month, and it'll be released toward the end of this month. Meat fans, don't get your hopes up too much: Libra 165C will set you back a whooping $160,000. [DigInfo via OhGizmo!]Like this? You might also enjoy...USC Engineers Create a Robot Finger That Beats Humans at Feeling TexturesDIY Tilt-Activated Turn Signal Makes Biking Safer, GeekierCulinary Mastermind Meets Geek, Burrito Printing Emerges Get more GeekTech: Twitter - Facebook - RSS | Tip us off | Follow Elizabeth Fish

http://feeds.pcworld.com/click.phdo?i=8e0abaeb4380185e68eb76c51d57012d

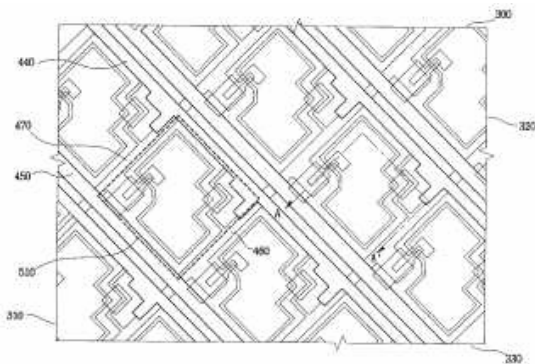## Image recognition device and liquid crystal display apparatus having the same

10/06/2009

Abstract not available for TWI310915 (B) Abstract of corresponding document: US2004211960 (A1) Tooltip Select language In an image recognition apparatus and an LCD apparatus having the same, a plurality of gate lines arranged in a transparent substrate has a predetermined slope such that the gate lines intersect with two sides of the transparent substrate, which are adjacent to or facing each other. A plurality of sensing signal output line arranged in the transparent substrate is substantially perpendicular to the gate lines. An image recognition sensor is formed on a pixel area defined by the gate and sensing signal output lines adjacent to each other. The image recognition sensor senses an image pattern of an object in response to gate driving signals from the gate lines and outputs the sensed image pattern through the

sensing signal output lines. Accordingly, the LCD apparatus may prevent appearance of the moire image and deterioration of the display quality of the LCD panel.

http://worldwide.espacenet.com:80/publicationDetails/biblio?CC=TW&NR=I310915B&KC

Image recognition anti-collision system for a vehicle

10/10/2008

Page bookmarkTWI301812 (B) - Image recognition anti-collision system for a vehicle Inventor(s):WANG YUAN SEN [TW] + (WANG, YUAN SEN) Applicant(s):YULON MOTOR CO LTD [TW] + (YULON MOTOR CO., LTD) Classification:-international:B60Q11/00; G08G1/16 - European:Application number:TW20040139859 20041221 Priority number(s):TW20040139859 20041221 Abstract not available for TWI301812 (B)

http://worldwide.espacenet.com:80/publicationDetails/biblio?CC=TW&NR=I301812B&KC

3D RGB holographic display for real time images

30/05/2012

 Technology collaboration - 12 DE 0855 3P52 REQUESTA multinational automotive supplier with research and development locations in Europe, North America and Asia is seeking technologies to generate real time, 3D and color holographic images. The aim is to use the display in next generation automotive interior. The technology offered can either be at laboratory stage or fully developed. Industry, research organizations and academia with suitable solutions are welcome for technical cooperation.

http://www.seimed.eu/vlx/rss/clickHandler.asp?mi=20&id=12 DE 0855 3P52&EnquiryTy

Real-time estimation of 3D scene geometry from a single image

30/05/2012

 Changick Kim is a Professor and Director of Computational Imaging Laboratory at KAIST. His research interests include multimedia signal processing, 3D video processing, image/video understanding, intelligent media processing, and video coding for IPTV. From 2000 to 2005, he was a Senior Member of Technical Staff at Epson Research and Development, Inc., Palo Alto, CA. He served as the TPC member of many international conferences including ICIP, ICME, and the publication chair of ICME 2010.

http://www.sciencedirect.com/science?_ob=GatewayURL&_origin=IRSSSEARCH&_method=c

Regulation of Facial Recognition May Be Needed, US Senator Says

19/07/2012

The U.S. Congress may need to pass legislation that limits the way government agencies and private companies use facial recognition technology to identify people, a U.S. senator said Wednesday. The growing use of facial recognition technology raises serious privacy and civil liberties concerns, said Senator Al Franken, a Minnesota Democrat and chairman of the Senate Judiciary Committee's privacy subcommittee. Franken, during a subcommittee hearing, called on the U.S. Federal Bureau of Investigation and Facebook to change the way they use facial recognition technology. Biometric information, including facial features, is sensitive because it is unique and permanent, Franken said. "I believe that we have a fundamental right to control our private information," he said. "You can change your password, you can get a new credit card, but you can't change your fingerprint, and you can't change your face, unless you go to a great deal of trouble."

http://feeds.pcworld.com/click.phdo?i=193caeed1a0f6a935791f8c6cb69cf76

Cherry tomatoes sorted by vision

24/07/2012

Korean researchers have developed a system to examine the feasibility of sorting cherry tomatoes based on real-time color image processing. As cherry tomatoes ripen, their color changes from green through pink to light red and then red. For that reason, red tomatoes are exported to countries close to the producer while green tomatoes tend to be exported further. Hence the process of determining their color and then sorting them into appropriate batches is an important procedure. The system that the Korean researchers developed for the task comprises three Honeywell (Morristown, NJ, USA) HCC-640 CCD color cameras and a Cronos plus frame grabber from Matrox Imaging (Quebec, QC, Canada) connected to a PC that processes the images of the tomatoes as they move past the cameras in a line down two conveyor belts. The PC converts the images of the tomatoes from RGB space into La*b* color space and processes them to discriminate between the different stages of ripeness, after which an actuator on the machine sorts them into their appropriate categories. Software to control the image acquisition system was developed using Microsoft's (Redmond, WA, USA) Visual Studio operating on a

Windows platform. Results showed that the system was capable of grading the cherry tomatoes with an accuracy of above 80 percent and a maximum sorting rate of about 360 kg per hour. A technical article describing the work of researcher In-Suck Baek and his colleagues from Chungnam National University and Sangmyung University is available here. -- Dave Wilson, Senior Editor, Vision Systems Design .

http://feedproxy.google.com/~r/FactoryAutomation/~3/Y4frOIDC_EA/cherry-tomatoes-

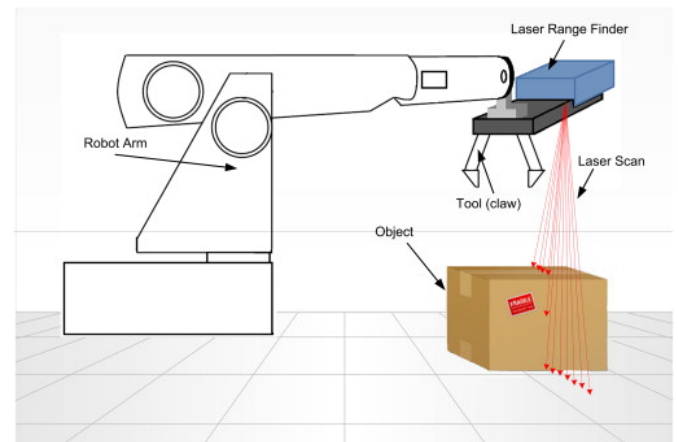## Cranberries sorted by vision system

31/07/2012

 One of the largest growers supplying Ocean Spray with cranberries has installed a vision-based sorting machine from Key Technology (Walla Walla, WA, USA). L&S Cranberry (Quebec, Canada) farms and packs eight million pounds of fresh cranberries a year, on average, during its four-month season. To achieve these goals, the company uses Key Technology's Optyx 6000 series sorter. The Optyx sorter can inspect up to 12,000 pounds of fresh cranberries per hour. The system detects each object's size, shape, and color, and the difference in the objects' structural properties, enabling it to identify and remove foreign material, defects and

soft berries called "poppers" that spoil quickly and affect other berries in a bag. The system was installed in 2008, when the company decided that it had grown large enough to justify having its own packing plant.

http://feedproxy.google.com/~r/FactoryAutomation/~3/71hipq3Lqz4/cranberries-sort

Object recognition using laser range finder and machine learning techniques
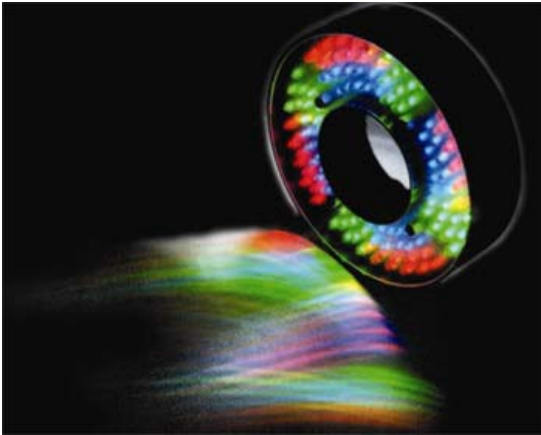
31/07/2012

Abstract In recent years, computer vision has been widely used on industrial environments, allowing robots to perform important tasks like quality control, inspection and recognition. Vision systems are typically used to determine the position and orientation of objects in the workstation, enabling them to be transported and assembled by a robotic cell (e.g. industrial manipulator). These systems commonly resort to CCD (Charge-Coupled Device) Cameras fixed and located in a particular work area or attached directly to the robotic arm (eye-in-hand vision system). Although it is a valid approach, the performance of these vision systems is directly influenced by the industrial environment lighting.

http://www.sciencedirect.com/science/article/pii/S0736584512000798

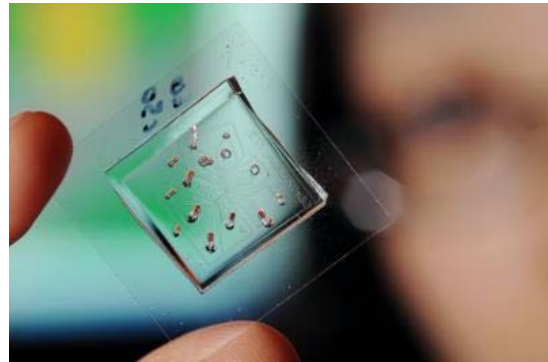## Practical guide to machine vision lighting goes on-line

02/08/2012

Daryl Martin, the Midwest Sales and Support Manager of Advanced Illumination (Rochester, VT, USA) has written a 21-page guide to help those in the machine vision industry choose the most appropriate lighting for their system. The quality and appropriateness of lighting are critical aspects for creating a robust vision inspection system. Wilson, Senior Editor, Vision Systems Design

http://feedproxy.google.com/~r/FactoryAutomation/~3/RXP9fOHoCMc/practical-guide-

Artificial intelligence helps detect subtle differences in mutant worms

19/08/2012

Research into the genetic factors behind certain disease mechanisms, illness progression and response to new drugs is frequently carried out using tiny multi-cellular animals such as nematodes, fruit flies or zebra fish. Often, progress relies on the microscopic visual examination of many individual animals to detect mutants worthy of further study.

http://www.eurekalert.org/pub_releases/2012-08/giot-aih081612.php

Vision system detects unburned fuel in biomass-fired boiler
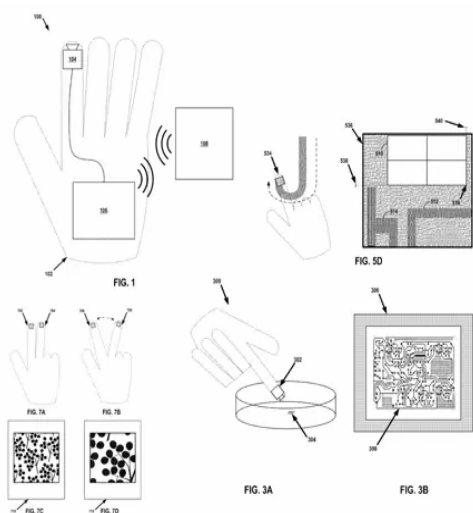
17/08/2012

Researchers from the Department of Environmental Science at the University of Eastern Finland (Kuopio, Finland) and Foster Wheeler (Varkaus, Finland) have developed a vision-based system that can be used to detect unburned fuel in a large-scale biomass-fired boiler. Combustion of biomass is challenging due to the heterogeneous character of the fuel, which makes monitoring of the process important. Unburned carbon residue is one of the indicators of the inefficiency of the process, since it shows that the combustion has been incomplete. The system the Finnish researchers developed comprises a camera and a computer in a protective enclosure that captures images from the combustion process. The images are then analyzed and an index which indicates the amount of unburned carbon in the bottom ash conveyor of the biomass-fired boiler is calculated. into nuclear reactors and swim through underground pipes.

http://feedproxy.google.com/~r/FactoryAutomation/~3/GZzyUogKVEI/vision-system-de

Google patentó un guante para ver con la mano

28/08/2012

Con las cámaras y otros sensores ubicados en los dedos, el dispositivo podría transmitir imágenes e información a otros equipos como smartphones. Además, complementaría sus gafas de realidad aumentada, Google GlassDe acuerdo con el pedido de patente presentado por Google, que fue aprobado la semana pasada por la Oficina de Patentes y Marcas de los Estados Unidos, los guantes tendrían cámaras, giroscopios, acelerómetro, brújula y otros sensores alojados en los dedos que permitirían la interacción con distintos dispositivos. Las cámaras, por ejemplo, ayudarían a tener una visión magnificada del entorno del usuario y de esa forma brindarían imágenes o capturas de áreas a donde los ojos no alcanzan a ver del todo. Por ejemplo, cuando algo se cae accidentalmente debajo del sillón, el guante inteligente de Google, gracias a sus cámaras, podría ayudar a ubicar el objeto perdido, algo que el ojo no podría hacer por sí mismo en ese caso. Mediante distintas gestualidades, los guantes serían capaces de enviar y recibir información e imágenes a través de las puntas de los dedos. Los componentes centrales, como CPU y RAM, estarían ubicados en el área de la palma de la mano, mientras que el chip para Wi-Fi, que posibilitaría compartir datos, iría en la parte trasera de la mano. El guante inteligente de Google sería un buen complemento para sus gafas de realidad aumentada, Google Glass, ya que permitiría interactuar de forma "inteligente" con el mundo que se está viendo a través de estos últimos. El proyecto de gafas inteligentes, Project Glass, fue presentado oficialmente en abril de este año mediante un post en Google+, cuando el gigante de internet ya se encontraba trabajando sobre el dispositivo de realidad aumentada desde hacía un tiempo. Dos meses más tarde, durante la conferencia Google I/O realizada a finales de junio, Google anunció que ya se podía reservar un prototipo de las gafas por u$s 1.500 para ser recibido en 2013.

http://www.infobae.com/notas/667262-Google-patento-un-guante-para-ver-con-la-mano

Cognex system checks seams of Knorr food sachets for defects

31/08/2012

Engineers at aku.automation (Aalen, Germany) have installed a machine vision system from Cognex (Natick, MA, USA) in the Knorr packaging plant in Heilbronn, Germany to check the seals on sachets of food products such as Fix Spaghetti Bolognese, Fix Goulash and Fix Pot Roast. Until recently, Knorr had assigned staff to look for broken seals on the products at the end of the production line. Although this worked well and customers had not been submitting claims for product defects, Knorr wanted Cognex's smart vision system to ensure that 100 percent of all defects were identified. The vision system that aku.automation deployed comprised an In-Sight Micro vision system, In-Sight Explorer vision software with PatMax pattern recognition software and a Cognex VisionView 700 visualization panel.

http://feedproxy.google.com/~r/FactoryAutomation/~3/mbZbSEdD9rM/cognex-system-ch

System sorts nuts for the automotive industry

30/08/2012

Engineers at Avinashilingam University (Coimbatore, India) have developed a prototype machine vision system to sort nuts used in the automotive industry. The system captures images of the nuts from a 60 fps 640×480 CCD camera from The Imaging Source (Bremen, Germany) as they move on a conveyor at a speed of sixty nuts per minute.

http://feedproxy.google.com/~r/FactoryAutomation/~3/WfHGiqiF4Gw/system-sorts-nut

Smart cameras monitor the quality of particle board in Thailand

14/09/2012

Engineers at Siam Riso Wood Products (Sarattani, Thailand) have developed an automated vision system that can monitor the quality of particle board using smart cameras from National Instruments Thailand (Bangkok, Thailand). The company itself manufactures 10,000 particle boards per day and until the deployment of the NI based vision system, these were inspected manually. Together with support from engineers at NI Thailand, engineers led by Sarapong Kaney at Siam Riso modified an existing particle board manufacturing from Kvaerner Panel Systems (Hannover, Germany) that was not equipped with machine vision technology.

http://feedproxy.google.com/~r/FactoryAutomation/~3/iLDxlJ7XYRM/smart-cameras-mo

Ring scanners improve operational efficiency at UPS

06/08/2012

Logistics giant UPS is equipping its employees with wearable scanning systems to enhance the efficiency of its operations. Each system, made by Motorola Solutions (Schaumburg, IL, USA) consists of a hands-free imager that is worn on a finger and a small terminal worn on the employee's wrist or hip. The employee uses the ring imager to automatically scan barcodes on labels. Once acquired, the ring scanner sends each package's tracking information via Bluetooth to the terminal.

http://feedproxy.google.com/~r/FactoryAutomation/~3/w9K7wHpEOmg/ring-scanners-im

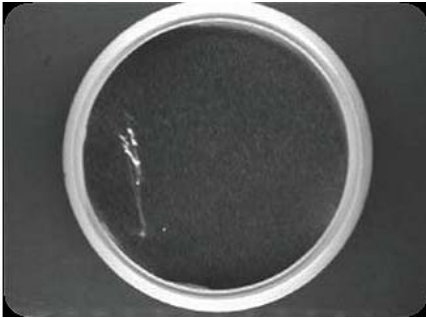## Fuzzy logic spots the defects in fabric

24/07/2012

Indian researchers from the Kongu Engineering College (Perundurai, India) have developed an automated system to inspect the quality of knitted fabric produced by the textile industry. To do so, a video of the moving fabric that is being produced is first captured by an array of cameras after which individual frames from the video are processed to improve the quality of the images. Textural features extracted from them are then analyzed using a fuzzy logic system implemented with National Instruments (Austin, TX) LabView fuzzy system designer toolbox to identify any faults in them. After the analysis, the percentage of faults in the fabric is then determined. The researchers claim that their proposed system is over 20 percent better at identifying faults in the fabric and over 10 percent better result at classifying them than existing microcontroller-based automated fabric inspection methods. More information on the system can be found here. -- Dave Wilson, Senior Editor, Vision Systems Design

http://feedproxy.google.com/~r/FactoryAutomation/~3/wTRXGJDpeeo/fuzzy-logic-spot

Foil seals on plastic lids checked for integrity

30/08/2012

Engineers at vision systems integrator Olmec-UK (Barton-Upon-Humber, UK) have built an inspection system to check the integrity of the foil seal on the plastic lids that are used to seal a wide range of glass and plastic containers in the food, healthcare and pharmaceutical industries. The foil seals, which are used on a range of products from milk bottles to sauces such as ketchup, powdered drinks and containers of tablets, provide an air-tight seal to protect against contamination, humidity, tampering and leakages. The challenge faced by the Olmec engineers was that they were required to image the highly reflective foil material at high speed while ensuring that the system would detect all the possible defects as well as measure the depth of the foil inside the lid.

http://feedproxy.google.com/~r/FactoryAutomation/~3/rOsI8da3fgg/foil-seals-on-pl

Automated inspection of engineering ceramic grinding surface damage based on image recognition
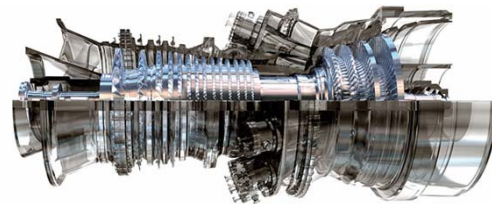
26/07/2012

Journal ArticleOnline First™ Automated inspection of engineering ceramic grinding surface damage

based on image recognition Shangong Chen, Bin Lin, Xuesong Han and Xiaohu Liang The International Journal of Advanced Manufacturing Technology, Online First™, 25 July 2012

http://www.springerlink.com/content/h330l7854xI25153/

Las nuevas turbinas de gas natural de GE podrían ayudar a las energías renovables

04/10/2012

Energía: Las nuevas turbinas de gas natural de GE podrían ayudar a las energías renovables La tecnología podría abaratar el uso de la energía eólica y solar y ayudar a pasar del carbón al gas natural.Jueves, 4 de octubre de 2012Por Kevin BullisTraducido por Francisco Reyes (Opinno)E-mail ImprimirLa abundancia de gas natural barato está impulsando un alejamiento del carbón para la generación de electricidad, y una tecnología de turbinas de gas anunciada por GE la semana pasada podría hacer aún más difícil que el carbón pueda competir. La tecnología también podría ayudar a las eléctricas a integrar las fuentes de energía renovable en su mix energético.

http://feeds.technologyreview.com/click.phdo?i=416c773502dcfacfcda7e51ff5914d4d

CONCLUSIONES

La Vigilancia Tecnológica implica, ante todo, un estado de ánimo colectivo que posibilita a la empresa anticiparse a las oportunidades, prevenir amenazas y, en definitiva, evitar una gestión de carácter exclusivamente reactiva. Por ello, la VT no debe reducirse a rastrear novedades procedentes tan solo de patentes y otras publicaciones científicas, sino que implica situar la novedad en su contexto, detectar el valor comercial de la misma y prevenir las amenazas tecnológicas que pueden provenir de las empresas competidoras de otras regiones.

Por esta razón, este reporte incluye algunas de las novedades mundiales que pueden ser referente para identificar aquello que marca tendencia. Asimismo, hemos considerado oportuno incluir el estado del arte para identificar los campos y las áreas geográficas destacadas en la tecnología "image processing".

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