

AI:10

GET INSIGHTS ON AI UNDER 10 MINUTES

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HEADLINE
NEWS IN A
FLASH

WHAT IS RESPONSIBLE AI?

What's Hot

SHELL, C3 AI, BAKER HUGHES, AND MICROSOFT LAUNCH THE OPEN AI ENERGY INITIATIVE, AN ECOSYSTEM OF AI SOLUTIONS TO HELP TRANSFORM THE ENERGY INDUSTRY

Sector Focus

**AUTONOMOUS
ROBOTS IN THE
OPERATING ROOM**

Special AI Features

CDS INSIGHTS-AI

Converting Stock Statements into powerful insights

AI-Based Civil Service Kiosk With Capabilities To Recognize Sign Languages, Adopted By Daejeon City



“The central city of Daejeon has adopted artificial intelligence-based digital mirror civil service kiosks that can recognize sign languages and interact and communicate with citizens to lower the entry barrier for hearing-impaired citizens seeking administrative support.”

In a statement, Daejeon said that the operation of of "Nuriview," the AI-based digital mirror kiosk, will begin on February 3. Kiosks will be placed at public places including the city hall and subway stations with a large moving population.

Equipped with a camera and sensors to detect the movement of hands to recognize sign languages, the kiosk will communicate with citizens using sound, displaying text on the digital mirror together with a computer graphic image avatar model uses sign languages. Citizens can use the kiosk in a similar way to smartphones by touching the semi-transparent magic mirror display.

"We will continue to roll out administrative actions to increase the disabled's access to information using the latest technology," Daejeon Mayor Heo Tae-jeong was quoted as saying. Nuriview will help citizens gain access to services such as the reissuing of passports and a digital guidebook. At subway stations, the kiosks will display timetables for trains and provide a charging service for electric wheelchairs. ■

SOURCE: AJU NEWS





AI:10 | WHAT'S HOT

Shell, C3 AI, Baker Hughes, and Microsoft Launch the Open AI Energy Initiative, an Ecosystem of AI Solutions to Help Transform the Energy Industry

Baker Hughes and Microsoft today announced the launch of the Open AI Energy Initiative (OAI), a first-of-its-kind open ecosystem of artificial intelligence (AI)-based solutions for the energy and process industries. The OAI provides a framework for energy operators, service providers, equipment providers, and independent software vendors for energy services to offer interoperable solutions, including AI and physics-based models, monitoring, diagnostics, prescriptive actions, and services, powered by the BHC3T AI Suite and Microsoft Azure.

"This initiative is about combining the efforts of global leaders to accelerate the digital transformation of the energy industry to new, safe, and secure energy and to ensure climate security," said C3 AI CEO Thomas M. Siebel

The first set of OAI solutions provided by Shell and Baker Hughes are focused on reliability and designed to improve uptime and performance of energy assets and processes. These reliability solutions will serve as extensions to the current BHC3 Reliability application, an AI-based application that provides reliability, process, and maintenance engineers with AI-enabled insights to predict process and equipment performance risks for the energy industry. The application leverages the BHC3 AI Suite's ability to integrate enterprise-scale data from disparate data sources and train AI reliability models that cover full plant operations while taking full advantage of Azure, Microsoft's scalable, enterprise-class cloud infrastructure.

The OAI augments BHC3 Applications with partnered, domain-specific solutions that accelerate deployment of AI-based reliability solutions to unlock significant economic value across the energy industry while helping to make energy production cleaner, safer, and more efficient.

The initial OAI reliability solutions offered by Shell and Baker Hughes enable interoperability between BHC3 Reliability, OAI modules, and existing industry solutions for such applications. Solutions available today include proven and tested equipment- and process-specific modules with pre-trained AI models, codified subject matter expertise, low-latency data connectors, thermodynamic and operating parameter libraries, global health monitoring services, deep diagnostics, failure prevention recommendations, and prescriptive actions. ■

SOURCE: POSTMEDIA BREAKING NEWS



WHAT IS 'RESPONSIBLE AI'?

THERE ARE SEVERAL RELEVANT PRINCIPLES THAT SHOULD BE CONSIDERED WHEN DESIGNING AI MODELS, ALLOWING FOR MITIGATION OF ETHICAL RISKS.

1. Fairness: Human biases within the data, model design, and methods for training and testing of an algorithm can lead to outcomes that affect groups of people differently.

2. Referencing Lessons Learned by Top Technology Companies: According to an article by Gartner, two practices came from lessons learned of enhancing trust in AI: Algorithmic Impact Assessments (AIA) and the appointment of an external governance board.

3. Transparency: Transparency allows humans to see whether the models created have been thoroughly tested and make sense, and that they can understand why particular decisions are made.

4. Accountability: AI needs to be accompanied by a chain of accountability that holds the organizer and/or systems human operator responsible for the decisions of the algorithm.

5. Privacy: Throughout their lifecycle, AI systems should respect and uphold privacy rights and data protection and ensure the security of data.

6. Governance: Corporate governance is essential to develop and enforce policies, procedures and standards in AI systems.



A recent federal order On December 3, 2020, puts the White House Office of Management and Budget in charge of drawing up a roadmap for how federal agencies use AI software. The executive order lays out a list of nine principles, specifying that the ways in which federal agencies use AI should be:

1. lawful,
2. purposeful and performance-driven
3. accurate, reliable and effective
4. safe, secure and resilient
5. understandable
6. responsible and traceable
7. regularly monitored
8. transparent
9. accountable

■
SOURCE: FEI DAILY



MITSUBISHI ELECTRIC DEVELOPS RADAR-BASED TSUNAMI-FLOODING PREDICTION AI

Mitsubishi Electric Corporation announced on 4 February 2021 that the company has developed an artificial intelligence (AI) technology that uses data on a tsunami's velocity detected by radar to forecast water inundation depths (1) in surrounding inland areas, working in collaboration with the Society for the Promotion of Construction Engineering of the General Incorporated Foundation. The AI incorporates Mitsubishi Electric's Maisart(R)2 AI technology to generate highly accurate predictions just seconds after a tsunami is detected, thereby supporting the rapid formulation of evacuation plans to prevent or mitigate disasters in local inland areas. ■

SOURCE: BUSINESS WIRE

STUDY: FEW BRANDS HAVE MASTERED AI AND MACHINE LEARNING

Most companies have a long way to go toward becoming mature users of AI and machine learning. Only 17% have mature capabilities, according to a new study from “Rackspace Technology: Are Organizations Succeeding at AI and ML?” Another 31% are moving from POC/pilot to an AI/ML solution in production, requiring significant organizational work. And 51% are only at the exploratory stage. Worse, 34% report have attempted artificial intelligence R&D initiatives – and failed.

The main problems were lack of data quality – 34%, lack of expertise within the organization – 34%, lack of productive-ready data – 31%, and poorly conceived strategy – 31%.

But there are many benefits such as increased productivity – 33%, improved customer satisfaction – 32%, and better-streamlined processes – 30%.

Here is how brands use AI and machine learning: component of data analytics – 40%, driver of innovation in the company – 38%, applied to embedded systems – 35%, and resource optimization – 34%

The top key performance indicators when measuring AI/ML performance are profit margins (52%), revenue growth (51%), data analysis (46%), and customer satisfaction/net promoter scores (46%). ■

SOURCE: MEDIAPOST.COM

INDIA GOVERNMENT TO USE AI & ANALYTICS FOR MONITORING GST TAX EVASION

India's Finance Minister Nirmala Sitharaman has announced the implementation of artificial intelligence and deep analytics to track and analyse the tax evasion problem in GST along with its application in eGovernance and to ease compliance burden. This news came along with the introduction of AI-based features in MCA-21 version 3 that will allow a seamless and hassle-free regulatory filing for businesses and startups.

According to the budget announcement, the Goods and Service Tax Network (GSTN) capacity has also been improved with the deployment of artificial intelligence and analytics, which will help the companies identify the tax evaders as well as monitor the fake billers. The AI and ML features will also ensure that the databases are interlinked to fill the known details. This brings automation to the entire process, allowing carry out of routine enforcement 24x7 via autopilot.

For the startup ecosystem, this move has become even more crucial, as "MCA-21 shares crucial information to various stakeholders such as the regulators, investors and companies." Such a move will only increase the authenticity and comprehensiveness of corporate and startups. ■

SOURCE: IFC REVIEW

HEADLINE NEWS IN A FLASH

"THE LOS ANGELES Police Department (LAPD) banned the use of commercial facial recognition apps in November after BuzzFeedNews reported that more than 25 LAPD employees had performed nearly 475 searches using controversial technology developed by the company Clearview AI." Such incident, another growing public concern relating to police surveillance using facial recognition.

Due to the concerns of such technologies, several legislative bodies had to delay, restrict, or halt the usage of such technologies use by law enforcement agencies. "In December, the Massachusetts legislature approved the first state ban on police use of facial recognition tech. During nationwide protests over police abuse last summer, the New York City Council passed the Public Oversight of Surveillance Technology Act, which requires the New York Police Department to disclose all of the surveillance technology it uses on the public." ■

FACIAL RECOGNITION TECH BANNED FOR COPS

SOURCE: BUZZFEEDNEWS

THE STATE OF SÃO PAULO CONCENTRATES OVER HALF OF ALL AI STARTUPS IN BRAZIL, FOCUSING ON DEVELOPMENT OF AI PRODUCTS AND SERVICES

HEADLINE NEWS IN A FLASH

The health and biotechnology space concentrates the largest number of startups (12.5%), followed by Human Resources and personnel management (10%), and manufacturing, as well as agriculture and food, both accounting for 9.6% of all startups in the AI field, according to a new study. Considering the 702 startups currently active in the AI space mapped in the study by open innovation firm Distrito in association with KPMG, the state of São Paulo concentrates 51.9% of all companies.

When it comes to companies serving organizations from various industries, the most common type of business is startups providing AI as-a-service (AlaaS) with 34.1%, followed by those offering business intelligence and analytics services (30.9%), data management and market intelligence; chatbots (19.3%); cybersecurity (9.4%); and recommendations systems that suggest products based on users' current and predicted behavior (6.3%). According to the study,

Brazilian startups focusing on AI solutions have raised \$839 million since 2012, through 274 funding rounds, with 2020 being the busiest year in terms of investment volume.■

ZDNET.COM

AI TAUGHT TO PLAY THE PIANO VIA 'AUDEO'

"Anyone who's been to a concert knows that something magical happens between the performers and their instruments. It transforms music from being just "notes on a page" to a satisfying experience. A University of Washington team wondered if artificial intelligence could recreate that delight using only visual cues -- a silent, top-down video of someone playing the piano. " Using machine learning, the researchers created a system, called Audeo, that produces audio from silent piano performances. When the group tested the music Audeo created with music-recognition apps, such as SoundHound, the apps correctly identified the piece Audeo played about 86% of the time. For comparison, these apps identified the piece in the audio tracks from the source videos 93% of the time. Audeo was presented on Dec 8, at the NeurIPS 2020 conference.

"To create music that sounds like it could be played in a musical performance was previously believed to be impossible. An algorithm needs to figure out the cues, or 'features,' in the video frames that are related to generating music, and it needs to 'imagine' the sound that's happening in between the video frames. It requires a system that is both precise and imaginative. The fact that we achieved music that sounded pretty good was a surprise." - Eli Shlizerman, Senior Author and an Assistant Professor in both the Applied Mathematics and the Electrical and Computer Engineering Departments.■

SOURCE: SCIENCEDAILY



AI:10 | SECTOR FOCUS

AUTONOMOUS ROBOTS IN THE OPERATING ROOM

Robots are already quite prevalent in the medical field and poised to further revolutionize it. According to the Wall Street Journal, research is now underway to devise new automated technologies that can take over repetitive tasks, such as suturing. This will allow surgeons to concentrate on more complicated tasks and prevent mental and physical fatigue, especially during procedures that can go on for many hours.

Let's take a look at the technologies that are currently in service or development.

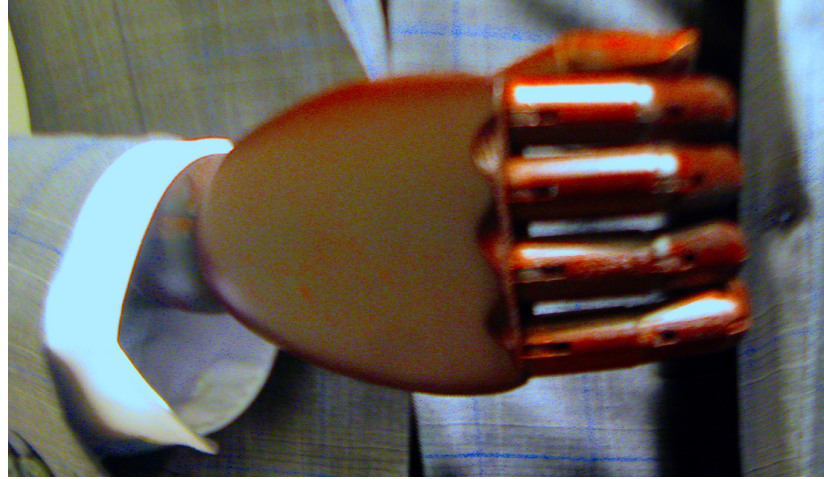


ROBODOC

The ROBODOC by Think Surgical is a first-generation autonomous robot that is still in use today. It was used for a THA in 1992 and received FDA clearance in 1998. ROBODOC can perform complicated hip and knee operations by converting CT scans of the affected joint into a 3D virtual bone model, which the surgeon can use for pre-operative planning. Because of the 3D images, the surgical procedure can be tailored to each patient's unique anatomy, and an implant can be chosen accordingly.

During surgery, the surgeon uses a "digitizer" to locate the patient's anatomy by selecting points on the bone surface. This plan is then imported into the computer-assisted tool, which cuts the specific regions of the bone based on the preoperative plan and, essentially, acts as a CAD/CAM machine. Meanwhile, the surgeon supervises the procedure by watching the monitor and cutting tool to ensure that the system is operating properly. The surgeon then places the implant and finishes the procedure.

A study was carried out by Song et al on 30 patients who underwent bilateral sequential total knee replacements, with one knee being replaced by robotic implantation and the other by conventional implantation. Radiographic results showed that even though the robotic sides had longer operation times and skin incisions, they demonstrated a decreased incidence of blood clots and post-operative bleeding. In terms of long-term benefits, the more precise fit, fill and alignment of the implant resulted in less stress, decreased bone loss and reduced leg length discrepancies.



STAR PERFORMER

In an autonomous surgery revolution, another set of experiments by researchers from Children's National Hospital and Johns Hopkins University showed off the Smart Tissue Autonomous Robot's (STAR) capabilities. With only minimal guidance, the STAR was able to stitch together pieces of intestinal tubing from a pig in both a lab setting and live operation. The research claims that the robot can match, or even improve upon, the safety and precision of a human surgeon while damaging less of the surrounding flesh. This is particularly outstanding because soft tissue surgery is difficult to perform, unlike the ROBODOC, which operates on stiff and nondeformable bone. Irregular soft tissue—skin, fat and muscle—can resist a cutting tool and suddenly give way, causing the tool to make inaccurate cuts. STAR was able to compensate by visually tracking both its intended cutting path and its cutting tool, constantly fine-tuning its plan to accommodate such movement.

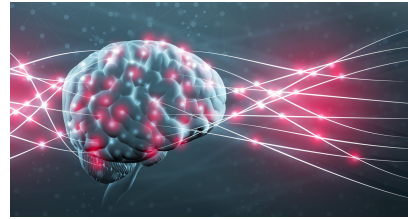
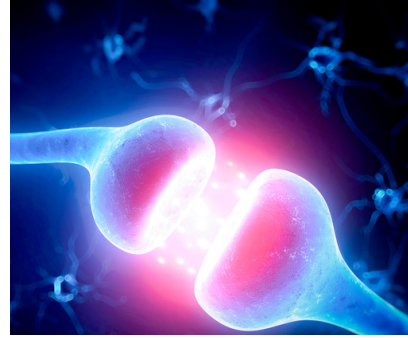
The STAR's vision system relied on near-infrared fluorescent (NIRF) tags placed in the intestinal tissue by researchers. A specialized NIRF camera tracked the markers while a 3D camera recorded images of the entire surgical field. Combining all this data allowed STAR to make its own plan for the suturing job and adjusted that plan as tissues moved during the operation. Surgeons found that the robot's stitch placement needed to be corrected less than both the DaVinci and keyhole surgery methods. This is still a concept though, as the experiments conducted were limited in scope and performed under tightly controlled conditions.



SKIN-TO-SKIN

One of the demands of surgeons using robots is haptic feedback during surgery to reduce tissue damage. National University of Singapore (NUS) and Intel Corp. researchers are developing an ultra-sensitive robotic silicon finger meant to mimic the sense of touch that surgeons need to identify organs, cut tissue and apply the correct amount of force. Labeled the Asynchronous Coded Electronic Skin (ACES), the device is made up of 100 small sensors and is about 1 square centimeter in size, allowing it to detect human touch 1,000 times faster than the human nervous system. It can identify the shape, texture and hardness of objects within 10 milliseconds—about 10 times faster than the blink of an eye.

The team drew inspiration from the human sensory nervous system. Unlike the nerve bundles in the human skin, ACES comprises a network of sensors connected through a single electrical conductor. This also differentiates it from existing technologies that have interlinked wiring systems, which can make them prone to damage and difficult to scale up. The technology could potentially be employed in the form of a haptic glove to give surgeons the ability to remotely feel what the robot feels.



CRUISE CONTROL

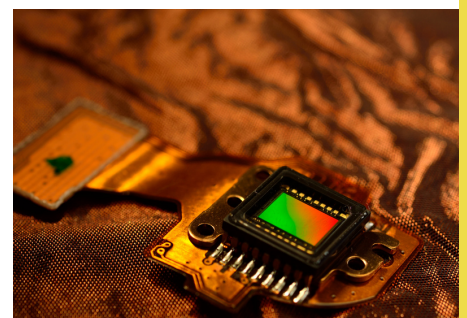
Minimally invasive procedures require navigating from a small incision to the site that needs to be operated on. This has previously been accomplished through robots controlled by joysticks or guided through the body by external forces such as magnetic fields. A potentially disruptive innovation is a self-navigating robotic catheter, created by bioengineers at Boston Children's Hospital. The device was inserted into the base of the heart of a pig, from where it propelled itself using a motorized drive system. Using a haptic vision sensor, it navigated along the beating ventricular wall to a leaky valve near the top of the ventricle without a surgeon's involvement.

Using a navigational technique known as "wall following," the catheter's sensor sampled its environment at regular intervals—much like insect antennae or rodent whiskers—and was able to discern whether it was in contact with blood, the heart wall or valve. It was also able to judge how hard it was pressing—to prevent damage to the heart—using a tiny camera. This was supplemented by data from preoperative scans and machine-learning algorithms, essentially creating a map of the cardiac anatomy. Automation of the navigation allowed the surgeon to concentrate on using the occlude, a small metal plug, for optimizing valve repair. The robot was successfully able to arrive at the heart valve over repeated trials in more or less the same amount of time as the surgeon using either a hand tool or a joystick-controlled robot. Additionally, it could eliminate the need for fluoroscopic imaging, which can expose patients to ionizing radiation.

Are Robots Cut Out for the OR?

While these systems demonstrate supervised execution of surgical plans in practice, perfecting and implementing the more complex and involved tasks is the next step in enhancing autonomy in surgery. ■

SOURCE: ENGINEERING.COM



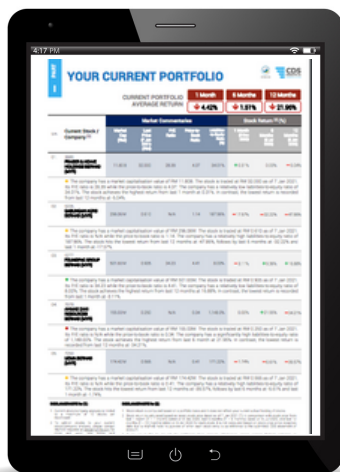
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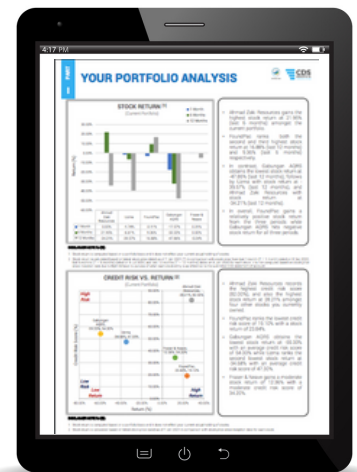
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THREE WAYS YOU CAN BUILD & OWN AI WITHOUT CODING

➔ You have an idea



Yes - this idea must originate from a pressing need, pain point or an opportunity that is associated with your current operations and/or industry dynamics.

There must be a ready demand for that idea to be transformed into a system - otherwise it has to be incubated or "cook" to be ready for the market.

BUILD INNOVATION WITH US

MyFinB is an award-winning, high growth AI start-up with core operations in KL/SG and serving more than 30 markets globally.

We specialise in Artificial Intelligence and Natural Language Generation & Understanding (NLGU). Our AI-powered solutions translates structured data (financial statements, bank statements, incorporation info) and unstructured data (publications, social media, journals and video images) into decisioning reports.

MyFinB uses its proprietary NLGU and Cognitive Analytics capabilities to serve 10 core segments: Financial institutions, Enterprises / SMEs, Accounting and Auditing Firms / Consultants, Government Agencies, Credit bureaus, Stock Exchanges, Insurers, Trade Associations and Business chambers, Universities and Investment Promotion Agencies.

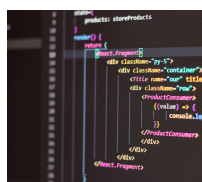
We manage a "digital factory" model where we help organisations build in-house capabilities via the Digital AI Labs (DIAL) programme. DIAL is a scheme of arrangement that helps organisations build and own A.I. expert systems – to solve a specific issue with a commercial goal in mind.

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➔ From idea to system prototype and business plan



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8 core deliverables will be rendered:

1. Mock-up Reports
2. Technological Blueprint
3. Roadmap
4. Prototype
5. Case Studies
6. 1-min Demo Video
7. Press Release
8. Pitch Deck

➔ We both



jointly own the IP in accordance to a pre-agreed ratio where MyFinB funds the full capex while you cover the costs of the prototype

We commercialise and launch them to the market based on the pre-agreed specifications and after the full system development is completed by MyFinB. Roles and responsibilities would have been detailed out, and a long-term partnership is forged.



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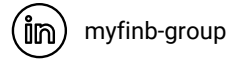
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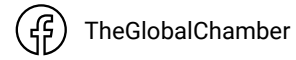
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