

Edition number: 1
January 2021

BIZTECH

MAGAZINE

DANCING ROBOTS

16



Delisting jolts 12

Robocop 5

The animatronic teddy bear 8

Technology

1. Privacy and Wing
2. Conventional app-store and the new norm
3. “ Do you love me?”
- Boston Dynamics robot dance
4. Robocop
5. The animotronic teddy bear
6. Age of massive infotainment system

Business

7. Emergence of multicloud
8. Delisting jolts
9. Upside AI - The Unicorn
10. Will robots become the new recruiting managers?

Events

INSIDE

BEHIND THE SCENES

Managing editor
Sri Vismitha Pudota

Executive editor
Pokala Pranay Kumar

**Design and
graphics**

Rounak Raj Surana
Sheethal Devi S

Editor

Sumanth Unnam
Blue-penciler
Bijay Kumar G

Writers

Sai Deepak Konreddy
C Meghana
Diksha Rathod

Research editor
Himabindu

Yalamanchalli
Jakkidi Aishwarya

**Social media
managers**

Sirineni Harshitha
Megha Mankal

Privacy and Wing

Will Wing's take on drones broadcasting their location invade privacy?

In the last week of December 2020, the US made a law promulgating that the drones need to broadcast their locations as well as their pilots' locations as a measure to address safety, national security, and law enforcement concerns regarding the further integration of these aircraft into the airspace of The States. Nonetheless, Alphabet's subsidiary, Wing is not against the new law but suggested an internet-based remote ID broadcasting the location of the drone and its pilot which will not invade the privacy of the people of America by the observers who might trace the movements, figure out the personal information, etc.

Back in December 2019, Federal Aviation Administration (FAA) originally intended to take up internet-based tracking of the drones but had to let go off due to various reasons like the cost of adding a cellular modem to a drone, to begin with to the cost of paying for a monthly cellular data plan to fly a drone and cost of paying a third-party data broker to

track and store the data and possibility of a data breach in the third party broker, etc.

It also said that American communities would not accept this type of surveillance of their deliveries or taxi trips on the roads and they would not accept it in the sky. Wing's further understanding and argument is that the most proponents of the Remote ID Technology are that it's a mere 'license plate' for the skies like that of cars on the roads saying this will allow the drone to an identified as it flies over without necessarily sharing the complete flight path or flight history and not display the sensitive information to the public while making it available only to the law enforcement on terms that they have proper credentials to access the information.

All told, it will take a while before finding how secure, vulnerable, broad, or narrow Remote ID broadcasts will be but it seems like this is the first step to suggest internet-based remote ID to be an option in the future.



Source: <https://www.theverge.com/2021/1/1/22209558/google-wing-faa-drone-remote-id-broadcast-rule-privacy-security>

Robocop

Remotely controlled police officers



'Change is constant'. While the world continues to change and technology plays the most crucial role. It's 2021 and we are heading towards an era of robotic law enforcement, a very outlandish robot for police work which is a robot police dog. Seems different, doesn't it?

The United States has been purchasing these robots for the police department and accepting this as a new normal which will turn into a routine swiftly but might cause a disturbance in the future. The NYPD has recently purchased a robot dog that can open doors. The police departments around the United States have bought the weeble-wobble- looking robot, Knightscope robot that is known to enjoy running over children's feet and ignoring people in need of help. It might be funny to watch a robot police dog fall into a fountain, but the consequences which these robots might bring later can be harmful and dangerous. We could soon see a rapid increase in the number of different kinds of police

robots, and accountability could become a major problem.

As we know a robot will be doing things only what it has been programmed to do while having no ability to think in any censorious situation. A police robot, either a robot dog or a humanoid robot, without reappraising will take severe action leading to injury or fatal on a wrong person. We will have to confront many situations where the robot police dog or a humanoid robot would be instantaneous and have to make decisions, the robots might look harmless now but are going to be perilous later. Proper transparency and public control over what the police departments spend money on is needed. These robots could invade our privacy, get people falsely arrested, and even end up injuring or killing people in some circumstances. The success of these robots highly depends upon how the people respond to these impending threats at hand.

Source: <https://www.digitaltrends.com/features/robot-law-enforcement-normalization/>







Age of massive infotainment systems

Infotainment systems have not only become smarter but also larger

It's finally 2021 and surprisingly it's the infotainment systems in cars that are getting huge and user-centric along with the phone screens.

It all starts with the 2021 Cadillac Escalade's 14.2-inch screen, then comes Cadillac Lyriq, the electric SUV with an impressive 33-inch screen and if you consider it to be good enough then the German premium car manufacturer, Mercedes, is gonna take you by surprise.

Mercedes will debut its gigantic 56-inch 'Hyperscreen' in its latest EQS Luxury Sedan and it marks the centerpiece of the automaker's second-generation "MBUX infotainment system", which uses complete digital button setup and in-car voice added to it.

Hyperscreen appears to be a combination of three screens embedded in one solid piece of curved glass which is anti-glare and scratch-resistant, covering the entire dash. Out of the three, one is an instrument cluster behind the steering, and the other two beings, a central infotainment screen and an additional screen facing the front passenger.

With the inclusion of 12 actuators beneath the touch screen surface, one can expect powerful haptic feedback and it also includes a fingerprint sensor.

The main USP of "Hyperscreen" has to be the feature called "zero layers" and there will be no need for the user to scroll through sub-menus or give voice commands because the system will recognize the user behavior on a timely basis and keep the most used and important applications/functions will be situated on the top of driver's field vision for easy usability. The major concern that remains here is the inability to gauge the level of distraction the screens can cause on the driver. As per the recent study by AAA, the huge infotainment screens in the newer cars are increasing the risk of accidents, especially for older drivers.

But as per what Mercedes says is that "The goal was a concept without the distraction of the driver or creating complicated operation", the "zero layers" feature was a concept designed with a goal being, no distraction to the driver. Offering maximum user-friendly interface and a safe driving environment.

Sajjad Khan, Member of the Board of Management of Mercedes-Benz AG and CTO on the new MBUX generation, in a press release stated, "We didn't want to build the biggest screen ever in a car. Instead, we have developed special screens with a perfect ratio of size and functionality for maximum user-friendliness."

The animatronic teddy bear

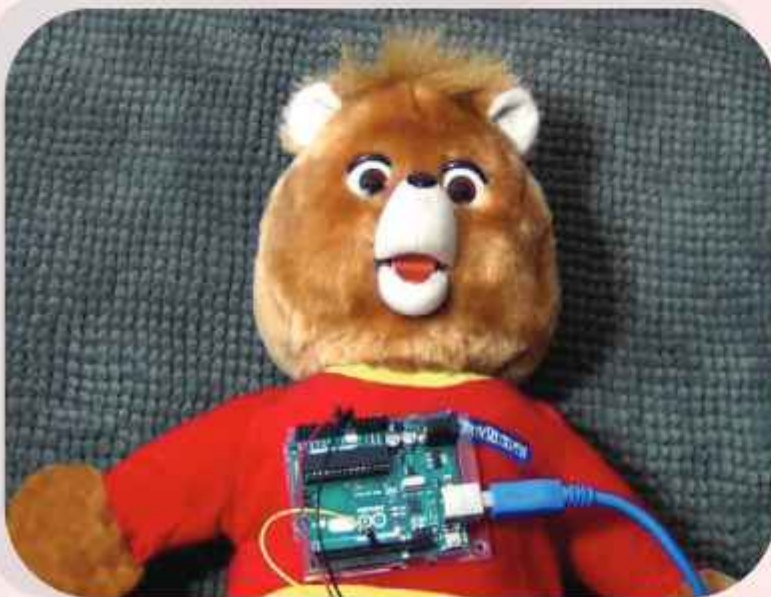
Toys like teddies have always been an amusement to the majority of the children and adults alike and having toys that could talk have been an amusement to every person. The revolution of talking toys started with Talking Tom back in 2013, though it was a mobile-based application, the extensive use of the app ignited the thought of bringing the virtual one into the physical world, giving rise to various products like Amazon Alexa, Google Home, Apple Siri, etc. One idea of the ideas was talking teddies that sparked the interest of Sean Gallagher, a researcher, to combine both Alexa and creepy toys of the 20th century to make a toy called Tedlexa

A gutted, 1998 model of the Teddy Ruxpin animatronic bear tethered to Amazon's Alexa Voice Service, the working inspired by Brian Kane, an instructor at the Rhode Island School of Design who threw down the gauntlet with a video of Alexa

connected to that other servo-animatronic icon, Billy the Big Mouthed Bass, the Frankenfish all powered by an Arduino.

Tedlexa is an animatronic bear that works on Arduino, Raspberry Pi, and Alexa. A hardware-focused approach, that uses the audio stream from Alexa, to drive the animation of the bear is used. AlexaPi's scripted install retrieves all the components required, compiles some of them from the source, and then configures the software with the identification credentials and keys Amazon provides. The actual code of AlexaPi itself is in two Python scripts—a "main" and a Python-based player for the TuneIn audio streaming service (used to stream the "Flash" news updates and other external audio content called by Alexa).

The Arduino handles all the animation itself through code written in Python, telling it when to start and stop.



Source: <https://artedfx.com/information-technology/2021/01/you-cant-leave-tedlexa-the-internet-of-things-a-bear-of-your-nightmare/>

On the AlexaPi side, PySerial is imported to create a serial connection to the Arduino and to send one-letter commands to start and stop the animations. These are put into the main.py code at instances where the audio player is triggered or Alexa's "hello" and "yes" responses are played. Sophistication in toys can lead to more such revolutionary toys which can bring back the memories of the millennials, associated with those toys, and pass on the toys to their next generation. Such futuristic toys can be seen coming up in large numbers shortly.

Emergence of multicloud

SAP India invests 500 Cr to boost multicloud strategy



SAP India has recently announced that it would help customers localize and to offer a multicloud choice, and will be investing INR 500 crore in India. The company further added that it will fulfill its commitment to driving the growth of tech in the country and will make its multi-cloud solutions available in Indian data centers.

Scott Russell, President, SAP Asia-Pacific Japan stated that SAP's commitment to supporting India's growth vision will remain a top priority, and they are determined to make it come true by deeper collaboration with their customers, ecosystem, and the government.

He further added that accelerating the nation's digital agenda and its customers' transformation in the cloud is what their investment in India is meant for.

SAP India having one of the largest and most diverse business to business cloud portfolios and, is a leading cloud company that is actively working towards addressing local customer details.

SAP further fortified its commitment to enterprises with the benefits of integrated cloud technologies to deliver the greatest flexibility and be data compliant under the upcoming Personal Data Protection Bill.

Adoption of a cluster of IaaS service's from a couple or more cloud providers and allocating workloads between each other is known as the Multi-cloud strategy, which has been a modern trend in cloud technology.

Kulmeet Bawa, SAP Indian Subcontinent President, and Managing Director stated that to qualify innovation and to yield prompt business output, today's customers are preferring scalability, faster deployment, data compliance, and price-effective solutions.

He further added that grasp an agile and scalable cloud technology that is developed and made available in Indian data centers will help Indian organizations remedy their business to prosper better and thereby supporting the vision of self-reliant India (Atmanirbhar Bharat) is SAP's major intention.

Source: <https://analyticindiamag.com/sap-to-invest-inr-500-crore-in-india-to-boost-multi-cloud-strategy/>



Kanika Agarrwal, Nikhil Hooda and Atanu Agarrwal - Founders of Upside AI

Upside AI The Unicorn

Human intelligence is often biased and emotional. It so happens that the more you try to avoid it, the more you are caught up in the bias. This becomes a major drawback when it comes to the financial sector. Using this as the base, Three Mumbaikars Kanika Agarrwal, Nikhil Hooda and Atanu Agarrwal founded Upside AI back in 2018. Upside AI understands, recognizes, and buy companies that are not just fundamentally good businesses but are in-demand stocks. The company came out in July 2019 with a beta start offering its investment products under SEBI registered PMS license.

The premise of Upside AI essentially parses fundamental data of all stocks on the NSE, i.e. financial statements, price and valuation metrics, etc. The algorithms, over millions of portfolio iterations, learn to pick companies that are not only fundamentally good businesses but also in-demand stocks. Once it is done learning, it suggests a portfolio of stocks. The Upside AI analysts then do manual checks on corporate governance to ensure that the companies are reporting financials accurately. They suggest a portfolio of 10-25 stocks to buy and then re-evaluate your portfolio every quarter. It is clear from the beginning that the outcome should not be a black box where it is not sure how the machine came to its conclusions. Hence, neural networks, etc are not used to build the algorithms. So, the ML techniques are used to allow to trace back the decision-making process. While it is not possible to go from front to back, work can be done backward with the tech used.

The hypothesis of Upside AI's products stands on four legs: eliminating human bias, so that calls are not based on market panic or euphoria, focus only on the business performance of companies, scan the market millions of times looking for investment ideas, and dynamically adapt to the changing market conditions. Differentiation from humans is clear as the use of a systemized rules-based approach to investing and is not affected by bias and emotion making it dynamic as machine learning is used. It can learn and adapt to different market conditions and stock-pick based on (1) fundamentally good stocks (2) what the market thinks are good stocks.

Upside AI currently runs two products on the technology – Upside Multicap and Upside 250. Upside Multicap is market cap agnostic, and Upside 250 focuses on the top 250 stocks by market cap.

Sometimes it is needed to be unbiased and unemotional to make the best of decisions and Upside AI is one such company that not only helps in keeping a check on ourselves in the financial sector but also rectifies our unbiased nature. However, AI and ML is an area that is going to gain more importance in the future and pave way for more sophisticated algorithms that work more efficiently than human beings.

Source: <https://analyticindiamag.com/can-ai-ml-disrupt-investing-this-mumbai-based-startup-is-showing-how/>

Delisting jolts

Imposition of bans in trading has affected
China's telecom sector negativity

Dated on 4th January, three major telecom carriers dipped sharply after the New York stock exchange delisted the companies to follow with the US Government ban.

There was a steep loss observed in the first trading session since the NYSE move was announced.

Chinese Unicom the smallest among the three was the only firm to have again which is 0.5% whereas China Telecom corp which is the major competitor has seen a loss of 2.8% by the time of. China Mobile Ltd the largest of all seen a huge drop of 4.5% by the time of closing.

A loss of 3% to 6% was observed by American depository during trading on Monday in New York.

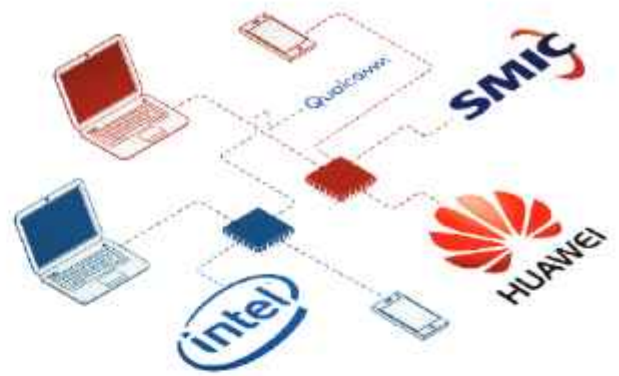
Edison Lee of Jefferies Analyst stated that non-U.S. investors would not be covered by our "bottom - fishing." He also added that there has been an improvement in the business fundamentals of the three firms and due to China Mobile's offer cost a higher profit yield of 7.5% was achieved.

By January 11th NYSE would suspend trading of the three firms and will halt the trading in closed funds and exchange-traded products that hold banned stocks.

The whole delisting happened due to executive order signing done by President Trump which will be implied starting Jan 11 and will block American's from investing in companies the US government says help the Chinese military.

This delisting has been a setback for US investors in Chinese telecom companies. These groups rank among the biggest global telecommunications providers however to a great extent they fell behind the more extensive business sectors since the organizations started listing in the U.S over two decades ago.





Peter Milliken who is head of Asia-Pacific telecom research at Deutsche Bank has stated that it is a problem for US investors that must sell, locking in their investments at a historically low price and this does not a bigger problem for Chinese telecom companies.

He added that they are cash flow machines, not needing to be fuelled by new capital from the U.S., or anywhere.

But there is an option for American Depository receipts can swap their securities in Hong Kong-listed ordinary shares through Bank of New York Mellon, which is the depository for all three ADR programs.

Chinese Securities Regulatory Commission stated on Sunday that it was less than \$3.1 billion worth when the combined value of the ADRs was considered and the delisting and ban will not alter the company's prospect to a large extent.

While the U.S. government has blacklisted the telecom carrier's unlisted parent organizations, it hasn't explicitly added these traded on an open market element to its list. In any case, a week ago, the Treasury Department said it expects to publicly list the subsidiaries of the banned groups, which will then include them in the scope of the executive order. Index providers have moved to bar a few organizations straightforwardly named by U.S. specialists yet have not said they would drop stocks in listed subsidiaries of blacklisted firms.

On considering 4th January moves there has been a total of 16% to 23% of share prices since November 12th order.

Looming Delisting Jolts Chinese Telecom Stocks - WSJ.

Conventional Appstore and the new norm

Do you know that Apple appstore has some interesting yet weird rules?

It was in December of 2019, director Rian Johnson while promoting his film "Knives Out" mentioned that every character in the film used an Apple iPhone except for the antagonist/killer, who used an android phone. Want to know why? It is because Apple has a norm stating no negative character in any film/TV show should use an iPhone as it might damage brands identity.



On the other hand, William Gustafson developed "Amphetamine", an app that prevents Macbook's from going into sleep mode and keeps them awake. The application comes in very handy while having multiple background operations going on. Ironically, it was accused of violating Apple's App Store guidelines even though it was often included in the "Best Mac Apps" lists.

According to the company, "Amphetamine" included content that some users might find offensive or objectionable as the name and icon of the app includes references to controlled substances, 'pills' and it also appears to promote inappropriate use of them.

The free app has more than 432,800 downloads and an average rating of 4.8 out of 5.0 considering a total of 1400 reviews in the apple app store.

Gustafson has appealed to Apple's App Store Review Board to lay off the violations and has stated that he will leave "Amphetamine" as is it and is not willing to change the branding or identity to satisfy Guideline 1.4.3 as the app does not promote the use of illegal drugs.

After a lot of hue and cry, Apple's Review Board stated that the app didn't violate any guidelines as the pill icon was just used "metaphorically" and in a medical sense. Although this sounds good for now that doesn't mean "Amphetamine" is free of any future issues with the tech giant.

Apple, as they say, may not look like a classic monopoly. Yet, when it comes to the iOS app store, it's content restrictions, and the terms it imposes, there's no doubt in saying that Apple is exerting monopoly.

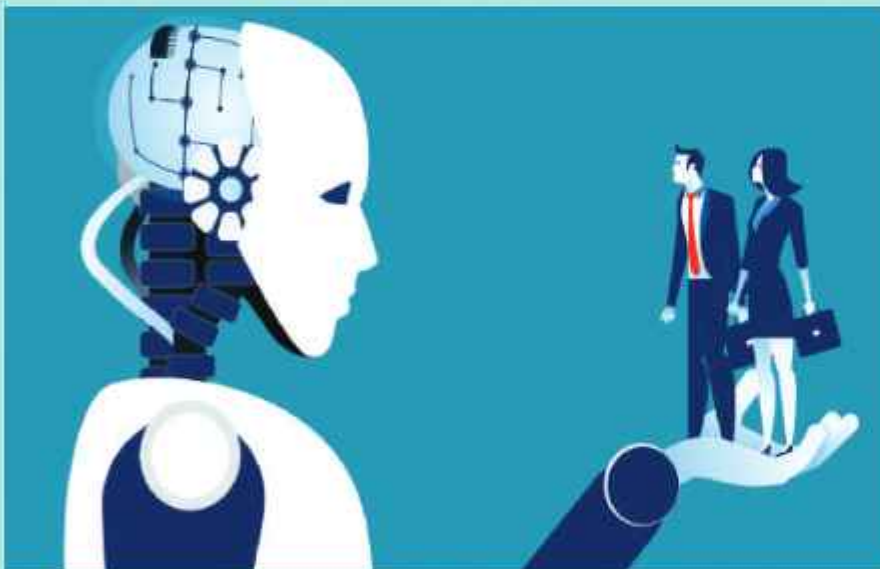
Will robots become the new recruiting managers?

Technology has made its presence felt in many fields and HR has been the new addition.

Technology has been driving businesses for a long time now and no matter how complex the business might be, technology has been making things easy.

But due to the COVID-19 pandemic, the pattern and process of work culture have been changed completely. Work From Home has become a norm in the majority of organizations which made companies realize employee engagement and motivation are major factors for a successful business.

Another technology that has been grabbing a lot of light these days have been Chatbots. Chatbots are user-friendly collaborative communication technology between management and the employees which makes the conversations informal and interactive. Chatbots can seamlessly communicate organization objectives to the employee making them stakeholders in organizational objectives.



Inclusion of Chatbots in employee's mobile's or would eradicate the need for Learning Manage System (LMS) or classroom style learning which indeed leads to monetary benefits and reduces the time taken by employees making their own learning schedules thereby boosting employee morale and making them knowledgeable through Digital courses.

Automation has been the front runner among the other aspects, recruitment wing under HR has been using digital technology to sort out the applications and filtering only the needed one's.

Conventional employee engagement practices and motivation techniques are becoming stale and have not been rewarding as before. To analyze employee behavior, to provide feedback, and to create a viable ecosystem, emerging technologies such as Internet of Things (IOT), Machine Learning (ML), and Artificial Intelligence are being utilized.

Integration of employee data into the cloud makes the job of HR easy by retrieving data whenever required and from any location with an internet connection.

Pandemic has brought a lot of changes in everyone's day to day life and the HR department is no exception. So inclusion above factors in their workforce would lead to positive results and thereby making everyone a stakeholder in achieving organizational objectives.

Source <https://www.peoplematters.in/article/hr-technology/does-how-you-can-blend-technology-into-hr-27871>



“Do you love me?” Boston Dynamics robot dance

Boston Dynamics, one of the world's most leading companies in robotics, has posted a video of robots dancing to “Do you love me”. Coupling an art form with technology and being successful in it is what makes us humans hope for a better future. So far, the video has 24 Million views, which is not surprising, given the content.

Technically, this is not the first time to have robots dance, but what makes this one unique is the collaboration with Monica Thomas, who is known for her innovative art concepts.

One of the robots, Atlas, has a function to perform practical tasks and some gymnastics, but dancing is new ground. Aaron Saunders, Boston Dynamics' VP of Engineering, has reached a new level of accomplishment in Robot Dynamics.

They initially started working with the choreography and the dancers to develop a base concept of what they thought should be the baseline. One of the most crucial challenges was for Atlas, in particular, to alter the human dance moves for better simulation to the robot. Dancers would first perform a few moves, and it is the engineers that observe and adjust them. Overall, it is a result of multiple iterations and numerous adjustments with choreographers and engineers.

Saunders says, “Atlas ballet moves were a work. It's harder to create a code, so we had to develop a toolchain to use. This toolchain is in such a way that it gives you the freedom to input diverse elements to simulate in the robot. As time went on, the iterations became easier and the timeframe got shorter, with the toolchain we developed. This experience taught us never to underestimate how strong and flexible dancers work, and we all learned how challenging it can be to recreate the same complicated and beautiful moves with our robots.”



Speaking about Handle and Spot, "The people we worked with had a very deep understanding of movements in both humans and robots. Our robots are dynamic, they can balance. It was no question whether the robot had two or four legs. It was more of a universal composition since we don't have a blueprint of animal motion or human behavior." These robots are commercially viable since they are composed of agility, impeccable balance. When there is a constant urge to push the limits of what these dynamics can do, it gives a much closer and better understanding of the hardware of these robots. Spot, after its production, has become much more than what it was at the initial stage. Now, Spot is robust enough to dance all day.



Speaking of Atlas again, "It is a complicated machine, only a few of them are manufactured on the globe. Reliability is not one of its crucial requirements. We improvise on it, and it is constantly under work, and it definitely needs higher maintenance than Spot, but it also has an upper hand in the tasks it performs.

Now speaking about the technical aspects, Saunders says, "Rather than choosing strictly one type of actuator, either Hydraulic or Electric, one should prefer to choose on a when-and-where basis. It depends on the number of tasks and what those tasks consist of, and on the size of the robot being us, and as such. But the catch is the industry doesn't provide tiny hydraulic elements or massive electrical components either, so there are a default division and use of these things."

Aaron Saunders further adds, "As a company, we are passionate to follow new developments in sensing, computer vision, terrain perception. These are all things where, the better they get, the more we can explore. Manipulation research is something we are working on, such as friction-based interactions, which encourages us to a better understanding of complex physical activities. Advancements in this field would surely open up gateways for quality interaction."

Successfully, designing and developing an intricate dance set with a bunch of robots, is the foundation stone, for many more such collaborations. The more precise and easier this grows, the more it opens the doors for much more and brings us all closer to progress because progress is the only way forward for us together as humanity.



Source: <https://spectrum.ieee.org/automaton/robotics/humanoids/how-boston-dynamics-taught-its-robots-to-dance>

28-29

January 2021
Online

**REWORK DEEP LEARNING
SUMMIT 2.0**

REWORK hosting its 7th annual Deep Learning Summit online. It brings many industry experts in the field of deep learning to share their recent innovations, thoughts, research status, etc.

https://www.re-work.co/summits/deep-learning-virtual-summit-2021?utm_source=Social&utm_medium=KDBanner_NewYear&utm_campaign=MP_KD_Banner_NewYear_DL

3-4

February 2021
Online

DATA BUSINESS CONGRESS

It is organized by IAM and GDR. The Data Business Congress is bringing specialists in the field of data management and exploration strategy.

<https://web.cvent.com/event/10240ffb-fa61-43b2-9038-73c9838049ae/summary>

9-11

February 2021
Online

DATAcated Conference 2021

Speakers will be delivering 10 min talks with a Q&A session. This is a free conference that is hosted on LinkedIn. This event covers a wide spectrum of topics.

<http://datacated.co/>

10-11

February 2021
Online

FutureCompute 2021

FutureCompute includes interactive panel discussions, chat sessions, and live conversations.

<https://event.technologyreview.com/future-compute-2021/>

16-17

February 2021
Online

Global Agriculture Technology Summit 2021

30+ global leading companies are participating in this summit. It is the first-ever 24-hour marathon virtual conference with the presence of key industry leaders to discuss the emerging technologies around the world. This summit cover topic such as precision agriculture, vertical farming, talent management, water and soil management, etc.

<https://www.digitalagtech.com/>

17

February 2021
Online

ExplainableAI Mini-Summit

The technical speakers are from different industries with different backgrounds come up to share their insightful thoughts. There is a 15 min virtual open network where you can collaborate and connect with many industry experts.

<https://www.re-work.co/events/>

17-19

February 2021
Online

Developer Week 2021

Every year more than 8000+ developers, engineers, managers, leads from 70+ countries come together to participate in this developer week to discover the latest technology, languages, platforms, and tools. There are many conferences, hackathons, workshops, interactive sessions with industry experts that will be conducted at this conference.

<https://www.developerDATAcated Conference2021week.com/>