JULY 2021 | ISSUE #26



BROUGHT TO YOU BY





IN PARTNERSHIP WITH



WHAT'S HOT

AI CAN DETECT WORKERS' PSYCHOLOGICAL STRESS

HEADLINE NEWS IN A FLASH

- Introducing Chiplet based, highperformance, low-power AI chips
- Azerbaijan: AI in livestock sector
- AI based model for disease detection in potato crops
- Scientists develops AI model to detect gravitational waves
- China's AI industry scale exceeds
 40 bln USD in 2020

SECTOR FOCUS

HARNESSING THE POWER OF AI FOR INTERNAL FRAUD DETECTION

AI CAN DETECT WORKERS' PSYCHOLOGICAL STRESS

Depression is a worldwide problem, with serious consequences for individual health and the economy, and rapid and effective screening tools are thus urgently needed to counteract its increasing prevalence. Now, researchers from Japan have found that artificial intelligence (AI) can be used to detect signs of depression.

In a study published this month in BMJ Open, researchers from University of Tsukuba have revealed that an AI system using machine learning could predict psychological distress among workers, which is a risk factor for depression.

Although many questionnaires exist that screen for mental health conditions, individuals may be hesitant to answer truthfully questions about subjective mood due to social stigma regarding mental health. However, a machine learning system could be used to screen depression/psychological distress without such data, something the researchers at University of Tsukuba aimed to address.

"We wanted to see if the AI system could detect psychological distress in a large population from sociodemographic, lifestyle, and sleep factors, without data about subjective states, such as mood," says lead author of the study Professor Shotaro Doki.

Even without data about mood, the AI model and the team of psychiatrists produced similar predictions regarding moderate psychological distress.

To investigate this, the researchers asked a group of researchers and office workers to complete an online survey about sociodemographic, lifestyle, and sleep factors. Then, they developed an AI model that predicted psychological distress according to data from 7,251 participants, and compared the results obtained from the AI model with predictions made by a team of six psychiatrists.



"The results were surprising," explains Professor Doki. "We found that even without data about mood, the AI model and the team of psychiatrists produced similar predictions regarding moderate psychological distress."

Furthermore, for participants with severe psychological distress, the predictions made by the AI model were more accurate than the predictions of the psychiatrists.

"This newly developed model appears to easily be able to predict psychological distress among large numbers of workers, without data regarding their subjective mood," says Professor Doki. "This effectively avoids the issue of social stigma concerning mental health in the workplace, and eliminates the risk of inappropriate responses to questions asking about respondents' mood."

Thus, screening tools that do not require individuals to report their subjective mood may be more accurate, and thus better able to identify individuals who would not otherwise receive treatment. Earlier interventions to treat depression and psychological distress are likely to lessen the severity of mental illness, with important benefits for both individuals and society.//

Source: University of Tsukuba, Japan



BLUE OCEAN SMART SYSTEM TO INTRODUCE CHIPLET BASED, HIGH-PERFORMANCE, LOW-POWER AI CHIPS

Using Blue Ocean's proprietary Chiplet architecture and technology, the company's GPGPU chiplet called BlueFin will support end-to-end highprecision compute (FP32) applications, scaling from 2 TFLOPS to 128 TFLOPS with the flexibility required by our customers. The company's second chiplet, an NPU chip called BlueDanio, supports a wide range of highly computational and energy-efficient AI training and inference applications with a flexible solution from 50 TOPS to 1,200 TOPS with a single design. At the same time, the company's integrated hardware and software development environment will reduce product development costs, and shorten development cycles for the markets focused on AI training, inferencing, high-precision compute, and large-scale image processing.//

Source: PR Newsire

AZERBAIJAN ACTIVELY USING INNOVATIVE TECHNOLOGIES, AI IN LIVESTOCK SECTOR

Using Blue Ocean's proprietary Chiplet architecture and technology, the company's GPGPU chiplet called BlueFin will support end-to-end highprecision compute (FP32) applications, scaling from 2 TFLOPS to 128 TFLOPS with the flexibility required by our customers. The company's second chiplet, an NPU chip called BlueDanio, supports a wide range of highly computational and energy-efficient AI training and inference applications with a flexible solution from 50 TOPS to 1,200 TOPS with a single design. At the same time, the company's integrated hardware and software development environment will reduce product development costs, and shorten development cycles for the markets focused on AI training, inferencing, high-precision compute, and large-scale image processing.//

Source: Trend AZ



IIT MANDI DEVELOPS AI BASED MODEL FOR DISEASE DETECTION IN POTATO CROPS USING PHOTOS OF LEAVES

The research in collaboration with the Central Potato Research Institute, Shimla, uses AI techniques to highlight the diseased portions of the leaf and has also been published in the journal -- Plant Phenomics. The computational tool developed by IIT Mandi scientists can detect blight in potato leaf images. The model is built using an AI tool called mask region-based convolutional neural network architecture and can accurately highlight the diseased portions of the leaf amid a complex background of plant and soil matter. The researchers are further working on converting the developed tool to a smartphone application for a more practical usage.//



SCIENTISTS DEVELOPS AI MODEL TO DETECT GRAVITATIONAL WAVES

Using Blue Ocean's proprietary Chiplet architecture and technology, the company's GPGPU chiplet called BlueFin will support end-to-end highprecision compute (FP32) applications, scaling from 2 TFLOPS to 128 TFLOPS with the flexibility required by our customers. The company's second chiplet, an NPU chip called BlueDanio, supports a wide range of highly computational and energy-efficient AI training and inference applications with a flexible solution from 50 TOPS to 1,200 TOPS with a single design. At the same time, the company's integrated hardware and software development environment will reduce product development costs, and shorten development cycles for the markets focused on AI training, inferencing, high-precision compute, and large-scale image processing.//

Source: Indo-Asian News Service



CHINA'S AI INDUSTRY SCALE EXCEEDS 40 BLN USD IN 2020

The industry scale of China's AI industry reached approximately 43.4 billion U.S. dollars in 2020, according to the China Academy of Information and Communications Technology (CAICT). The data also shows that the industry scale of the global AI industry grew by 12% year on year to 156.5 billion U.S. dollars in 2020, while China witnessed annual growth of 15%. The development of trustworthy AI has become a priority for the industry globally, as the technology brings not only opportunities but also risks and challenges. An initiative on promoting the development of trustworthy AI was co-released at the conference by over 20 research institutions, enterprises and universities, with the aim of accelerating the formation of international cooperation and consensus, promoting the understanding of trustworthy AI, and fully tapping its industrial and social values.//

Source: Xinhua News Agency



Source: Press Trust of India

HARNESSING THE POWER **OF AI FOR** INTERNAL FRAUD DETECTION

Source: Fintech Future Analysis

AI HAS THE POWER TO DISRUPT INTERNAL BANK FRAUD MONITORING, BUT ARE FIS READY TO TAKE THE PLUNGE?

Up until very recently, before digital identity theft and online payment fraud became the chart-toppers in the overall financial fraud stakes, internal fraud accounted for close to 70% of all cases annually.

Yet, employee fraud in financial institutions (FIs) remains a taboo subject and is not discussed or reported very often, possibly to avoid tarnishing an FI's image and reputation.

66 While FIs have been spending huge budgets on advanced tools and technology to prevent and intercept frauds committed by customers or external criminals, an aggressive effort must be made to deter and detect internal frauds conducted by FIs' employees either on their own or by colluding with other parties.



INTERNAL FRAUD DETECTION IN FIS – THE CURRENT LANDSCAPE

Over the years, the scale of internal frauds in FIs has reached staggering levels. The internal fraud monitoring and detection landscape is far from mature in most FIs across the globe. Here are some of the current challenges in this space:

Lack of documented policies and procedures around internal fraud monitoring and reporting – Most FIs have a dedicated fraud management function and the standard three lines of defense around it. However, very often the focus is on policies and procedures to prevent, detect and mitigate risks of external frauds involving customers or third parties.

Absence of frameworks to assess internal fraud risks and controls on a dynamic basis – Like any risk management function, internal fraud risk management requires assessment of employee fraud risks and designing corresponding controls.

Lack of tools and technology solutions to monitor employee fraud – Reports suggest that almost all internal frauds in FIs are unearthed either during internal audits or through whistleblowing, at least 12 to 15 months after such fraud is committed.

Rule-based technology platforms susceptible to circumvention by errant employees – In FIs where technology solutions have been implemented to monitor internal frauds, they are found to be of the traditional rule-based models. There is a need for a behaviour-based fraud detection tool that tracks employee activities.

Fragmented systems and data leading to lack of holistic view of employee footprint – Most often, FI employees must access multiple systems for their routine work, covering customer accounts, internal accounts and reports and multiple rooms and floors of the office building. Employee footprint data across these systems and locations are most often not aggregated and so it is not possible to get a unified view of an employee's activities across the organisation.

REIMAGINING INTERNAL FRAUD DETECTION SOLUTIONS IN FIS USING AI

With regulators encouraging the use of advanced technologies like analytics, machine learning (ML) and other forms of artificial intelligence (AI) in managing fincrime risks, here are some solutions on how AI can be leveraged to combat internal frauds at FIs:

Automated enterprise-wide risk and controls assessment – Al-powered solutions can be used to assess inherent internal fraud risks, existing controls and their effectiveness and resulting residual risks on a regular dynamic basis, as opposed to a yearly manual exercise. This can be set up by geography, product, line of business (LoB), employee type and tenure (permanent vs contract, newly joined vs long timers), employee role (front end vs back end, business user vs IT user/admin) and so on.

Unified analytics of employee data across all systems, physical and digital accesses – A 360-degree view of an FI's employee footprint across the physical premises and electronic systems can help in analytics and intelligence on employee conduct. This can cover unusual accesses to accounts, machines or buildings/rooms, uncommon privileges provided and revoked in a short time, indications of abnormal hours spent in the office premises (e.g. late working hours, holiday working) and activities conducted during such time.

Machine learning-based behaviour profiling and anomalous activity detection – A hybrid model where a traditional rule-based platform works in conjunction with an ML-based employee behaviour profiling and anomaly detection platform can improve the effectiveness of internal fraud detection in FIs. The rule-based platform checks employee conduct based on static scenarios, flagging an activity when any scenario or threshold is breached, e.g. a login to a bank system by an employee who is on leave. ML models detect outliers by comparing peer behaviour when an employee is found to be particularly deviating from their expected activity pattern. This can include working hours, kind of accounts touched, volume and frequency of customer detail updates, holidays taken (or not taken) and so on.

Network and linkage analysis using internal and external data of employees and customers – FI employees can commit frauds in collusion with other employees, customers or third parties. Identifying such frauds requires discovering hidden linkages and relationships among such parties, both internal and external to the FI. Integrating an FI's internal data with external data, including social network analysis where relevant, can help in generating early warning signals of fraudulent activity.

Automated investigation workflow of suspicious employee alerts – An Al-based intelligent workbench providing visualisation of anomalous activities of employees, linkages and risk scores can expedite contextual analysis and investigation of the internal fraud incident. The rich data and insights can enhance the quality, effectiveness and turnaround time for reporting and prosecuting such offences.

TOWARDS AI-LED DISRUPTION IN INTERNAL FRAUD MANAGEMENT: THE JOURNEY AHEAD

Internal fraud management in banks must be strongly driven by data and powered by AI, given the massive physical and digital footprints employees have across the enterprise. Strong warning systems can enable early detection, while effective control procedures can prevent such frauds altogether.

Integration of internal and external data, linking employee data to customers and third parties and combining structured and unstructured data like chats and emails can generate red flags and high-risk employee behaviour patterns.

All three pillars – people, process, technology – must be aligned for a robust internal fraud prevention and detection framework. Al has the power to disrupt internal bank fraud monitoring, but are FIs ready to take the plunge yet?//



CERTIFICATION IN APPLIED AI

A 3-month professional programme that builds up your knowledge, in order to **develop a solution for industries** and implement to achieve measurable impact.

This is a must-attend especially for those **without coding**, **programming or technical knowledge**.

3 LEVELS

FOUNDATION

Learn key concepts, understanding various Al models, case studies, assignments.

INTERMEDIATE

Design applications with project assignments linked to industry pain points; develop blueprint design and solutions

ADVANCED

Actual industry engagements and solutions design with MyFinB/CEAI, by applying what you have learnt in Foundation and Intermediate levels - into actual organisations: sandbox, pilot and test runs, with potential for commercialisation with industries.

TO FIND OUT MORE, PLEASE EMAIL: CEAI@MYFINB.COM

06

JULY 2021 | ISSUE 26

Design an AI solution at the end of the three-month programme!



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 Al-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.



Global Chamber® is a one-of-kind virtual and growing community of CEOs, executives and leaders in 525 regions around the world... everywhere... focused on helping companies grow in more than one metro area.

It is the ONLY organization in the world with hundreds of locations that helps executives grow their company through warm connections and a variety of virtual services.

Global Chamber's vision is a world where doing cross metro and cross border business is as easy as selling across the street. It also provides members with virtual connections, training, and information just right to grow... helping members connect with customers, partners and experts to grow across metros and borders. When members engage with Global Chamber, risk is reduced, and growth accelerates.





@MyFinBGroup





grow-globally



@globalchambe



MALAYSIA

MyFinB (M) Sdn. Bhd.

Level 13A, Menara Tokio Marine 189 Jalan Tun Razak, Hampshire Park, 50450 Kuala Lumpur, Malaysia.

Tel: +60 327 173 418



SINGAPORE



One Marina Boulevard, Level 20, Singapore 018989

Tel: +65 6932 2658



UNITED STATES

Global Chamber, LLC.

4400 N Scottsdale Road, Suite 9-852, Scottsdale, AZ 85251 USA

Tel: +1 (855) 476-9845