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Студенческая газета кафедры английского языка

IT Review

В этом выпуске

Faculty News

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«Анализ рынка труда Гомельской области дает основания утверждать, что потребность в высококвалифицированных специалистах по современным информационным технологиям остается очень высокой. Компаниям необходимы сотрудники, досконально знающие операционные системы, специалисты, подготовленные к разработке программного обеспечения с использованием языков программирования различных уровней.»

декан факультета, кандидат физико-математических наук, доцент Сергей Петрович Жогаль

Служба скорой помощи тестирует новую программу

08.04.20 Служба скорой помощи Гомеля тестирует специальную программу, которая позволяет в режиме реального времени отслеживать местоположение каждой машины и направлять ее к месту звонка. Программу разработал магистрант факультета математики и технологий программирования ГГУ имени Ф. Скорины Владислав Ефименков под руководством заведующего кафедрой вычислительной математики и программирования Дмитрия Кузьменкова

Новая специальность на факультете математики и ТП

Факультет математики и технологий программирования предлагает абитуриентам специальность «Прикладная информатика (программное обеспечение компьютерных систем) со специализацией «Мультимедийные системы и интернет-программирование». Выпускники специальности будут работать проектировщиками информационных систем, менеджерами программных проектов, руководителями проектов по разработке программного

заведующий кафедрой, доцент, кандидат физико-математических наук Кузьменков Дмитрий Сергеевич

Microsoft and Intel develop antivirus software that turns malware into 2D images that can be examined by a neural network

Microsoft and Intel have partnered up in an effort to develop a new kind of malware detection.
The project, called Static Malware-as-Image Network Analysis (STAMINA), is a joint effort by the tech giants to develop a software that sniffs out malicious code by converting it into greyscale images that can be assessed by utilizing deep-learning.

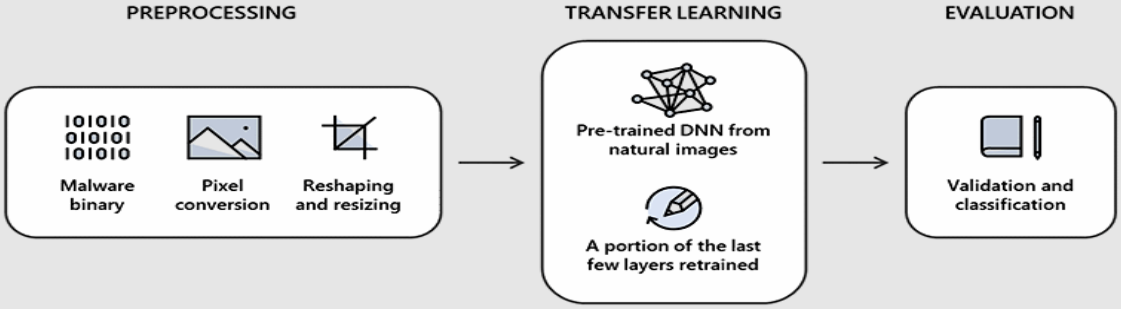
Intel and Microsoft say a new kind of virus-detecting software called STAMINA converts malware into 2D images that can be scanned by a computer vision algorithm (stock)

Specifically, STAMINA converts one-dimensional malware bits into two-dimensional greyscale images and then 'looks' at the images for patterns that may indicate specific types of malicious code using computer vision software designed to analyze images.
One the image is assembled, STAMINA then resizes it into a smaller dimension to make it easier to view.

This compressions, according to researchers helps avoid needing the software to assess billions of pixels - which would likely slow the process - and does not negatively affect its ability to identify malware.
According to ZDNet, STAMINA is trained using millions of examples of malware pulled from Windows Defender - an antivirus software made by the company - and has shown early promise in its missions to spot computer viruses.
The system has a little more than 99 percent accuracy with classifying malware and a false positive rate of below 2.6 percent.

The approach could help reduce the amount of data that needs to be scanned by algorithms and make malware detection more efficient (stock)

The AI apparently has apparently shown more success with smaller file sizes but according to Microsoft, STAMINA could eventually be deployed to focus solely on smaller files.
Either way the tool could be an improvement over current methods of scanning for malware that create very large data points and increase the chances of malware falling through the cracks.



Google Meet video conferencing platform improved

Google has improved its video conferencing platform Meet to be able to compete with other platforms such as Zoom and Microsoft Teams. A new feature of Meet is that users can now see the faces of 16 people on their screen. Previously, users could only see four people on their screen at one time, but with Meet's new tiled layout, people can now see 16 participants at once. Meet's new gallery view comes at a time when more and more people are using video conferencing services across the world. Many people are contacting family and friends during lockdown; companies are holding online meetings; and schools and universities have changed their operations to be able to teach online.

Google said the improved Meet platform would help millions around the world in times of lockdown. It wrote: "Remote work has become increasingly necessary for public safety and wellbeing - which makes staying connected, even while we're apart, more important than ever." It added: "Each day, a rapidly growing number of people connect on Google Meet, and we want to make sure they have the features they need to share and be productive." Google said it would introduce more new features such as the ability to block out background noise. This will end the noise of keystrokes as other people type while online. Users will also be able to improve video quality if the lighting in their room is not sufficient

Computer translates brainwaves into sentences

Scientists may soon be able to interpret what someone is saying simply by analysing their brainwaves as they speak. This revolutionary advance in neuroscience would help millions of people who suffer from communication problems and neurological disorders. The scientists developed a form of artificial intelligence that can decode brainwaves and translate them into text. Algorithms take the brain activity created as a person speaks and translates it in real time into sentences on a screen. The scientists are from the University of California, San Francisco. They say their algorithms have a 97 per cent translation accuracy rate but are working hard to improve on this.

The scientists say they are at the early stages of being able to machine-translate everything someone says. The software used in their experiments matched features of speech that were repeated frequently to parts and shapes of the mouth. These included elements of English speech such as vowels, consonants and commands. The experiments were limited to around 40 short and simply-constructed spoken sentences. The scientists said: "Although we should like the decoder to learn and exploit the regularities of the language, it remains to show how many data would be required to expand from our tiny languages to a more general form of English."

Microsoft offered $100 thousand for hacking Linux-based OS home development

Microsoft will pay $100 thousand to hackers who can bypass the security systems of Azure Sphere OS-a custom operating system of the Redmond company, built on the Linux kernel, according to Forbes.

Azure Sphere is designed to run on IoT device chips. It was announced in 2018 and was released this February. The developers promise the maximum reward for hacking with the launch of arbitrary code of the security subsystem Pluto or the isolated environment (sandbox) Secure World.

Microsoft expects that marathon participants will help it detect gaps in the operating system that could have gone unnoticed. The Azure Sphere Security Research Challenge will run for three months from June 1 to August 31. Applications are accepted until may 15.

50 researchers will be selected to participate and will be provided with the necessary tools and documentation to search for vulnerabilities in various scenarios, including access to the Azure Sphere development toolkit.

Zoom bought the startup Keybase. Will implement end-to-end encryption

Zoom will introduce end-to-end encryption of video calls: to implement the technology and improve user privacy, messenger bought a New York startup Keybase, which specializes in cybersecurity, CNBC and Business Insider write.

This is Zoom's first purchase since it was founded in 2012. Financial terms of the transaction were not disclosed. The last time Keybase attracted investment was in 2015, when It received $10.8 million at a valuation of $42.6 million.
Keybase co-founder Max Krohn will lead the Zoom security team.
End-to-end encryption will be available to all paid users. Conference organizers can choose this option in the settings. You will not be able to connect to a call with end-to-end encryption from your phone, and you will not be able to save a conversation recording in the cloud. Zoom emphasizes that the keys will not be stored on its servers, and it will not have access to recordings of video calls.
Zoom decided to focus on privacy and security after a number of leaks and a barrage of criticism about it in the media. Eric yuan announced in April that the company would freeze the development of new functionality for three months and focus on these issues. Buying Keybase is one of the steps in this direction.
Recently, Zoom was caught inflating the audience figures: at the end of April, messenger announced the growth of DAU to 300 million (against 10 million in December). Later, Zoom discreetly corrected the wording in the blogpost to " 300 million video conference participants per day."

TIOBE: C is again the most popular programming language

C took the palm from Java in the may TIOBE programming language popularity rating-for the first time in five years.

The last time C took the top spot in 2015, writes Tiobe chief Executive Paul Jansen. The gap between Java and C was minimal back in April, but what led to increased interest in the latter remains unclear to the authors themselves. One of the unlikely, but still possible reasons they call coronavirus — or rather, the fact that C and C++ are often used in medical SOFTWARE.

In addition, they believe that the pandemic has naturally fueled the popularity of Python and R, which are widely used in big data processing, because now researchers around the world are intensively developing vaccines and searching for drugs from COVID-19. TIOBE also pays attention to Rust, which is getting closer to the top 20: in a month, IT has risen from 27 to 21 places.

As for C, it held a fairly solid position even before the whole world started talking about coronavirus, Dice Insights notes, and despite its decent age, it is actively studied and used. The same TIOBE in January named "language of the year" exactly C. Then the rating compilers explained its popularity by its dominance in IoT and the development of "smart" gadgets, as well as its ease of learning and a good set of compilers. In other words, there are more logical reasons for the growth of C than the pandemic, the publication believes.

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At MIT, artificial intelligence develops algorithms programmed for curiosity

Specialists at the Massachusetts Institute of Technology (MIT) taught artificial intelligence to develop algorithms endowed with the property of curiosity. Engineers argue that such algorithms work more efficiently and adapt better to new environments than algorithms developed by humans.

In this case, curiosity refers to a function of the algorithm that uses a forecast error as a reward. Artificial intelligence is trying to predict the future state - for example, the next frame when watching a video - and the best result is one that does not match the forecast. Thus, AI adapts better to the new.

Researchers have created an algorithm for "meta-learning", which, in turn, generated 52 thousand algorithms encoded for research. Within 10 hours, computers selected the best of these 52 thousand, eliminating over 99% in the process. As a result, about a hundred algorithms the machine recognized as highly productive. At the same time, according to MIT, the best 16 of these hundred were superior to those developed by man with their properties. A curiosity property has been programmed into all 16 algorithms.

The idea to give artificial intelligence curiosity came to scientists from OpenAI and the University of Berkeley. They came to the conclusion that this property will allow robots to make independent decisions more efficiently. They tested the algorithm they created on 54 video games, and in Super Mario Bros artificial intelligence went through 10 levels without external reward, based only on their own curiosity.