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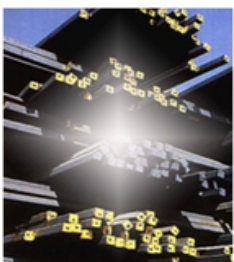
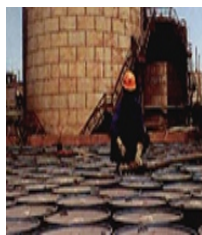
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PAKISTAN STEEL



Forthcoming Tech Events

- International Bhurban Conference on Applied Sciences & Technology
- International Conference on Computing, Mathematics Engineering Technologies
- Solar Pakistan Exhibition
- International Conference on Science, Engineering & Technology
- International Conference on Science Technology and Management
- International Conference on Research in Science and Technology
- International Conference on Information and Education Technology
- International Science, Technology and Engineering Conference

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Recognition of Off-Line Hand-Written Alphabets Using Knowledge-Based Computational Intelligence

The handwritten character recognition is considered an active recognition problem under the field of image processing and pattern recognition. Both area of research has gained so much popularity in last few years due to technology advancements and necessity of time. The handwritten character recognition also becomes popular due to globalization and technology improvements. In previous time, the information was stored in written form only. To utilize that information, one needs such an advanced method which can do this task efficiently and without reliance on human.

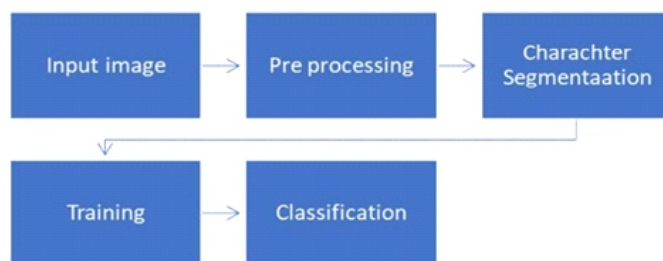


Fig. 10. Hand character recognition steps.

This work provides such a simplified and accurate method for the recognition of handwritten characters. A system is proposed to recognize characters using convolutional neural network and is evaluated on a benchmark dataset named as EMNIST to show the performance of the proposed technique. The proposed system gained the accuracy of 97.62% which is better than various existing methods.

Source:

G. Abbas, "Recognition of Off-Line Hand-Written Alphabets Using Knowledge-Based Computational Intelligence", PakJET, vol. 2, no. 1, pp. 1-8, Aug. 2019.

First Pakistani Startup receives an investment directly from the Bill & Gates Foundation to develop Innovative Artificial Intelligence Models for Data Collection.



The startup is aiming to disrupt \$75 Billion market research industry using recent advances in Artificial Intelligence.

An industry expert familiar with the company termed it as an “uber” for field data collection, where SurveyAuto relies on local community members with smartphones to report data rather than relying on expensive dedicated teams. “What Uber has done to taxi services, they are aiming to do the same to traditional market research companies like Nielsen and Gallup.”

“SurveyAuto uses a crowd sourcing model and relies on machine learning to decide who reports data, where it is collected, and when and how often it is reported. This reduces cost and minimizes human errors,” said Dr. Umar Saif, founder and CEO of SurveyAuto. SurveyAuto uses machine learning on satellite imagery and open street maps to accurately identify survey targets, tracks and monitors enumerators in real-time using smartphone applications, and uses speech and image analysis to automatically analyze the quality of collected data.

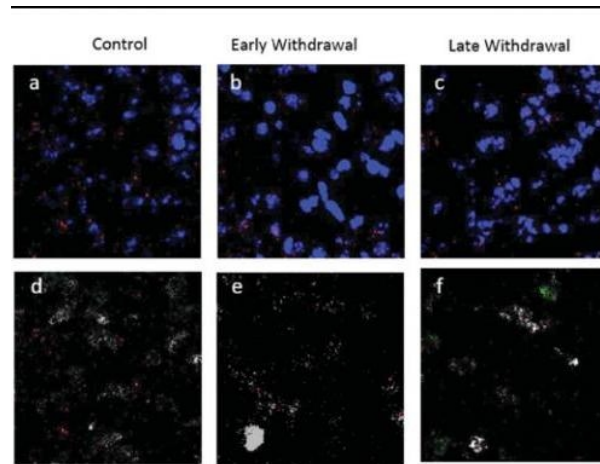
The investment marks the latest in a series of large-scale engagements for SurveyAuto. SurveyAuto is working on several global projects with the World Bank, Innovations in Poverty Action (IPA), ITA, UNESCO and other development organizations. SurveyAuto is headquartered in Lahore, Pakistan with offices in Amsterdam and Boston, MA.

Source:

www.suchtv.pk/technology/item/92179-former-pitb-chairman-dr-umar-saif-s-startup-receives-investment-from-bill-melinda-gates-foundation.html

Diabetes Drug relieves Nicotine Withdrawal

A drug commonly used to treat Type II diabetes abolishes the characteristic signs of nicotine withdrawal in rats and mice, according to new research published in *Jneurosci*.



Smokers trying to quit face potent side effects from nicotine withdrawal, including cravings, increased appetite, restlessness, anxiety, irritability, and depression. Even though they may want to quit, many smokers continue to smoke simply because the experience is so unpleasant. The diabetes drug, pioglitazone, targets a specific form of the peroxisome proliferator-activated receptors in the nucleus. This receptor, PPAR γ , is found in areas of the brain involved in drug addiction. Direct injections of pioglitazone into the hippocampi of male mice reduced the signs of physical nicotine withdrawal, including paw tremors, chattering, and head shakes. Injecting pioglitazone into the amygdala of male mice ameliorated signs of anxiety associated with nicotine withdrawal.

Nicotine abusers face a 30% higher risk of developing Type II diabetes. The researchers suggest pioglitazone may help diabetic smokers quit by lessening the physical and emotional withdrawal symptoms while reducing insulin resistance.

Source:

www.sciencedaily.com/releases/2019/11/191104130439.html

New Antenna Tech to equip ceramic coatings with heat Radiation Control

Researchers from Purdue University, Indiana, USA have developed a way for ceramic coatings to control heat radiation, a feature that could increase the performance of aircraft engines operating at high temperatures.

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They have engineered ceramic "nanotubes" that behave as thermal antennas, offering control over the spectrum and direction of high-temperature heat radiation. By controlling radiation at these high temperatures, we can increase the lifetime of the coating. The performance of the engine would also increase because it could be kept hotter with more isolation for longer periods of time.

These boron nitride nanotubes control radiation through oscillations of light and matter, called polaritons, inside the ceramic material. High temperatures excite the polaritons, which the nanotubes -- as antennas -- then couple efficiently to outgoing heat radiation.

The antennas could bring the ability to accelerate the radiation, perform enhanced cooling of a system or send information in very specific directions or wavelengths.

Source:

www.sciencedaily.com/releases/2019/11/191121183927.html

The Smell of old books could help preserve them: Development of Electronic Nose

Old books give off a complex mélange of odors, ranging from pleasant (almonds, caramel and chocolate) to nasty (formaldehyde, old clothes and trash). Detecting early signs of paper degradation could help guide preservation efforts, but most techniques destroy the very paper historians want to save. Now, researchers have developed an electronic nose that can non-destructively sniff out odors emitted by books of different paper compositions, conditions and ages.

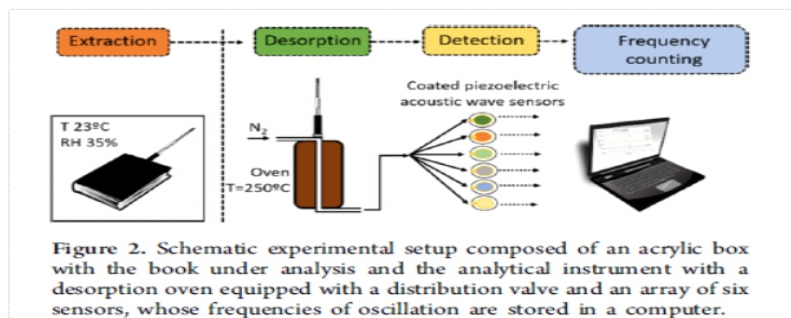


Figure 2. Schematic experimental setup composed of an acrylic box with the book under analysis and the analytical instrument with a desorption oven equipped with a distribution valve and an array of six sensors, whose frequencies of oscillation are stored in a computer.

Courtesy: Marta et al., 2019. DOI: [10.1021/acssensors.9b01279](https://doi.org/10.1021/acssensors.9b01279)

Paper is made primarily of cellulose, along with other plant components, and additives that improve the paper's properties. Cellulose is resistant to ageing, but the other paper components are much more vulnerable to degradation by heat, humidity and UV light. Before 1845, paper was made mainly from cotton and linen rags, which were relatively pure forms of cellulose and therefore quite stable. Then, in 1845, inventors developed a process to make paper from wood-pulp fibers. This paper is less durable than that made from cotton, but wood is cheaper and more readily available. In 1980, the advent of acid-free paper was a boon to preservationists because it degrades much more slowly than acidic wood-pulp paper.

The researchers from University of Aveiro, Portugal have developed an electronic nose that could non-destructively detect early signs of paper degradation from the volatile organic compounds (VOCs) books emit. The researchers collected 19 books published from 1567 to 2016. They classified the books by time period, paper composition, color and visible state. Then, the researchers collected VOCs released from the books and detected the gases with an electronic nose containing six sensors that selectively bound different VOCs.

The electronic nose clearly distinguished between paper from cotton or linen rags and paper from wood, as well as among books from three different time periods. Unexpectedly, some books published after 1990 still contained acidic paper, which the sensor discriminated from books with acid-free paper. And finally, the device sniffed out yellowing books, and new and used books from the same time period. The sensitive new method could help identify books in need of preservation, as well as help protect books from VOCs emitted by their neighbors on a shelf.

Source:

www.sciencedaily.com/releases/2019/11/191113112004.html

Study on greatest benefits of Global Renewable Energy Investments

New study finds that the amount of climate and health benefits achieved from renewable energy depends on the country where it is installed. Countries with higher carbon dioxide (CO₂) emissions and more air pollution, such as India, China, and areas in Southeast Asia and Eastern Europe, achieve greater climate and health benefits per megawatt (MW) of renewable energy installed than those operating in areas such as North America, Brazil, and parts of Europe.

Researchers from Harvard T.H. Chan School of Public Health measured two types of benefits -- climate benefits (reductions in carbon emissions) and health benefits (decreased mortality attributable to harmful air pollution) -- and developed a user-friendly model to compare how those benefits vary based on where renewable energy is operating. They found climate benefits are greatest in countries where the electricity grid is largely powered by coal with less-efficient plants, including Mongolia, Botswana, Estonia, Iraq, and Australia. Health benefits are greatest in countries with higher population densities where people are living downwind of emissions sources, including Myanmar, Bangladesh, Ethiopia, India, and large parts of Eastern Europe.

This new global model allows us to estimate benefits from renewables at the country-level, both from reducing greenhouse gas emissions, and including the massive health benefits achieved from reductions in air pollution. That hasn't been done

before in the sustainable investment world," said lead author Jonathan Buonocore, a research associate at Harvard C-CHANGE. "For example, the results show that a wind turbine or solar panel can save 30 times more lives if it is placed in India -- where air pollution is often a major public health issue -- than if that same turbine or panel is placed in the U.S., and climate benefits will be about twice as high.

This framework can be used by policymakers and investors to reach the Sustainable Development Goals set by the UN in 2015. The goals include ensuring access to clean and affordable energy (SDG 7) and promoting good health and wellbeing (SDG 3) by 2030.

Source:

www.sciencedaily.com/releases/2019/11/191112090642.html

New Artificial Intelligence System Automatically Evolves to Evade Internet Censorship

Computer Scientists from University of Maryland developed a tool called Geneva (short for Genetic Evasion), which automatically learns to circumvent censorship. Tested in China, India and Kazakhstan, Geneva found dozens of ways to circumvent censorship by exploiting gaps in censors' logic and finding bugs that the researchers say would have been virtually impossible to find manually.

Internet censorship by authoritarian governments prohibits free and open access to information for millions of people around the world. Attempts to evade such censorship have turned into a continually escalating race to keep up with ever-changing, increasingly sophisticated internet censorship. Censoring regimes have had the advantage in that race, because researchers must manually search for ways to circumvent censorship, a process that takes considerable time.

Known as a genetic algorithm, Geneva is a biologically inspired type of artificial intelligence developed to work in the background as a user browses the web from a standard internet browser. Like biological systems, Geneva forms sets of instructions from genetic building blocks. But rather than using DNA as building blocks, Geneva uses small pieces of code. Individually, the bits of code do very little, but when composed into instructions, they can perform sophisticated evasion strategies for breaking up, arranging or sending data packets.

The researchers plan to release their data and code in the hopes that it will provide open access to information in countries where the internet is restricted. If Geneva can be deployed on the server side and work as well as it does on the client side, then it could potentially open up communications for millions of people.

Source:

www.sciencedaily.com/releases/2019/11/191113124822.html

Coated Seeds may enable Agriculture on Marginal Lands

A specialized silk covering could protect seeds from salinity while also providing fertilizer-generating microbes

Providing seeds with a protective coating that also supplies essential nutrients to the germinating plant could make it possible to grow crops in otherwise unproductive soils, according to new research.



The engineers have coated seeds with silk that has been treated with a kind of bacteria that naturally produce a nitrogen fertilizer, to help the germinating plants develop. Tests have shown that these seeds can grow successfully in soils that are too salty to allow untreated seeds to develop normally. The researchers hope this process, which can be applied inexpensively and without the need for specialized equipment, could open up areas of land to farming that are now considered unsuitable for agriculture.

Although these nitrogen-fixing bacteria occur naturally in soils around the world, with different local varieties found in different regions, they are very hard to preserve outside of their natural soil environment. But silk can preserve biological material, so Marelli and his team decided to try it out on these nitrogen-fixing bacteria, known as rhizobacteria.

The silk, bacteria, and trehalose were all suspended in water, and the researchers simply soaked the seeds in the solution for a few seconds to produce an even coating. Then the seeds were tested at both MIT and a research facility operated by the Mohammed VI Polytechnic University in Ben Guerir, Morocco. "It showed the technique works very well.

The resulting plants, helped by ongoing fertilizer production by the bacteria, developed in better health than those from untreated seeds and grew successfully in soil from fields that are presently not productive for agriculture.

Source:

www.sciencedaily.com/releases/2019/11/191125153004.html

Forthcoming Tech Events

Pakistan

International Bhurban Conference on Applied Sciences & Technology

14-18, January 2020

Islamabad

www.researchsociety.co

International Conference on Computing, Mathematics Engineering Technologies

29-30 January, 2020

Sukkur Institute of Business Administration, Sukkur

www.10times.com/icomet-sukkur

Solar Pakistan Exhibition

19-21 March, 2020

Expo Centre, Lahore, Pakistan

www.10times.com/solar-pakistan-exhibition

International Conference on Science, Engineering & Technology

28-29 July, 2020

Pearl Continental Hotel, Rawalpindi

www.10times.com/icset-pakistan

International

International Conference on Education and Management Innovation

13-15 February, 2020

Barcelona, Spain

www.wikicfp.com

International Conference on Research in Science and Technology

20-22 March, 2020

Berlin, Germany

www.rstconf.org

International Conference on Information and Education Technology

28-30 March, 2020

Okayama University, Japan

www.iciet.org

International Science, Technology and Engineering Conference

8-10 April, 2020

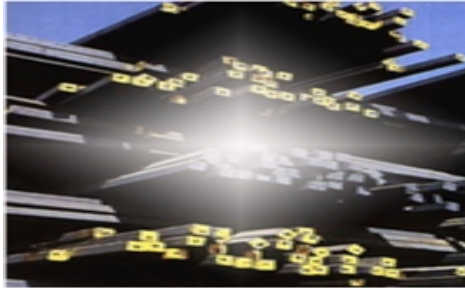
George Town, Malaysia

www.10times.com/istec-penang

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PAKISTAN STEEL

Pakistan Steel is strategically located 40km south east of Karachi in close vicinity to port Muhammed Bin Qasim. Pakistan Steel is a costal site which lies on the National Highway and is linked to the railway network. Spread over an area of 18,600 acres (29 square miles) with 10,390 acres for the main plant, 8070 acres for the township and 200 acres for the water reservoir Pakistan Steel is Pakistan's largest industrial complex, comprising component units numbering more than 20. It specialises in the production of flat steel products including, billets, slabs, hot rolled coils, cold rolled coils, galvanised sheets/coils/formed sections and corrugated sheets. It supplies high quality and cost effective steel products to the domestic market. Pakistan Steel's constant efforts in continuous improvement and quality management have resulted in accreditation in ISO 9001, 14001, 17025, SA 8000 and OHSAS 18001.



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