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Editorial Board

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- International Conference on Agricultural and Biological Science
- International Conference on Science, Health and Medicine
- International Conference on Science Technology and Management
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- International Science, Technology and Engineering

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Power System State Estimation using a Robust Estimator

State estimation (SE) is a primary data processing algorithm which is utilised by the control centres of advanced power systems. The most generally utilised state estimator is based on the weighted least squares (WLS) approach which is ineffective in addressing gross errors of input data of state estimator.

Researchers have presented an innovative robust estimator for SE environments to overcome the non-robustness of the WLS estimator. The suggested approach not only includes the similar functioning of the customary loss function of WLS but also reflects loss function built on the modified WLS (MWLS) estimator.

The performance of the proposed estimator was assessed based on its ability to decrease the impacts of gross errors on the estimation results. The properties of the suggested state estimator were investigated and robustness of the estimator was studied considering the influence function. The effectiveness of the proposed estimator was demonstrated with the help of examples which also indicated non-robustness of MWLS estimator in SE algorithm.

Source:

Zahid Khan, Katrina Lane Krebs, Sarfaraz Ahmad, Misbah Munawar. NED University Journal of Research 2019. XVI (4): 53-65. https://doi.org/10.35453/NEDJR-ASCN-2018-0038

An Investigation of Prototyping Technique in Pakistani Software Industry

Requirements elicitation is one of the important and major activities within the Requirements Engineering phase.

There are different techniques used for requirement elicitation process. Selection of any requirements elicitation technique depends on complexity, size, time and other resources of proposed software project. Selection of suitable technique for requirements elicitation is not a trivial process and if it is done properly then it can reduce time, budget, and risk constraints of system being developed. Sometimes researchers have found a gap between theory and practice that is gap between literature and industry practices. Therefore, goal of this paper is to find out the gap between literature and industry practice about requirements elicitation practices in PSI (Pakistani Software Industry).

The researchers in this study have shown the usage and impact of prototyping technique of requirements elicitation on product quality in Pakistani software companies. 29 Software companies following prototyping technique practice were surveyed using questionnaire, to investigate about usage of prototyping technique of requirements elicitation in industry, and impact of prototyping technique of requirements elicitation on product quality in term of schedule, cost and the customer Satisfaction.

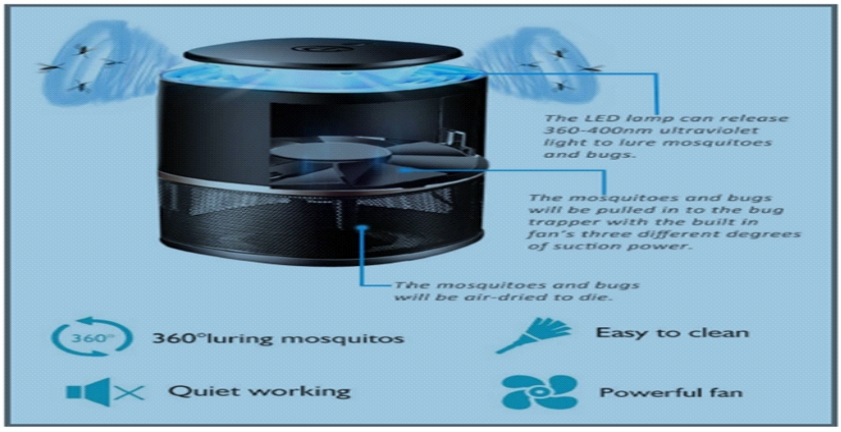
The study concluded that the appropriate practice of prototyping technique of requirements elicitation can reduce the project failure rate in PSI.

Source:

Muhammad Janas Khan, Rafiq Ahmad Khan, Mehran University Research Journal of Engineering and Technology, [S.l.], v. 38, n. 4, p. 945-960, oct. 2019. ISSN 2413-7219. https://publications.muet.edu.pk/index.php/muetrj/article/view/1241

Moskinator: a brand new type of Bug Catcher/Killer

Two German Engineers have designed a brand new type of bug catcher/killer called Moskinator, which claims to keep you and your loved ones mosquito free. They found that the traditional anti-pest devices were all either using harmful chemicals or didn't work!



The design is both innovative and very effective. Instead of trying to keep the mosquitoes away, it actually attracts them, then catches and kills them! It lures the flies and mosquitoes near using a safe, completely harmless UV phototaxis thermotaxis inducing light translation. The flying pests can't resist it! Next to the UV-PT light is a powerful, yet efficient reverse fan that sucks the insects through a 1-way trapdoor. Once trapped in the drying basket they are dried to death by the fan a matter of 2mins. (They die without moisture.) You can simply empty the dead bugs into the trash, without even touching them.

In Pakistan, a simple mosquito bite can mean serious illness or death. Mosquitos can infect you with Malaria, yellow fever, chikungunya, Zika and dengue. All can kill you. A certain mosquito called "Aedes aegypti" bites during the day. That's the mosquito that carries Zika and dengue. It infects 400,000,000 (400 million) people per year. No vaccine exists for either disease. So we spray large areas with pesticides. But this negatively affects the whole ecosystem and your health. All pesticides will eventually become useless when mosquitoes evolve to resist it. So a Moskinator can be one of the choices as it is cost effective as compared to other appliances**.**

Source:

www.blogs.dailylifetech.com/pNL2/moskinator/d1/this-creative-new-device-traps-mosquitos-without-chemicals-1122

Artificial Skin creates first Ticklish Devices

A new interface developed by researchers in Bristol and Paris takes touch technology to the next level, by providing an artificial skin-like membrane for augmenting interactive devices such as phones, wearables or computers.

Researchers created a phone case, computer touch pad and smart watch to demonstrate how touch gestures can convey expressive messages for computer mediated communication

Courtesy: https://ein.iconnect007.com/index.php/article/120256/artificial-skin-creates-first-ticklish-devices/120259/?skin=ein

The Skin-On interface mimics human skin in appearance but also in sensing resolution. The researchers adopted a bio-driven approach to developing a multi-layer, silicone membrane that mimics the layers present in human skin. This is made up of a surface textured layer, an electrode layer of conductive threads and a hypodermis layer. Not only is the interface more natural than a rigid casing, it can also detect a plethora of gestures made by the end-users. As a result, the artificial skin allows devices to 'feel' the user's grasp -- its pressure and location, and can detect interactions such as tickling, caressing, even twisting and pinching.

Artificial skin has been widely studied in the field of Robotics but with a focus on safety, sensing or cosmetic aims. This is the first research we are aware of that looks at exploiting realistic artificial skin as a new input method for augmenting devices.

Researchers created a phone case, computer touch pad and smart watch to demonstrate how touch gestures on the Skin-On interface can convey expressive messages for computer mediated communication with humans or virtual characters.

The next step will be making the skin even more realistic. They have already started looking at embedding hair and temperature features which could be enough to give devices -- and those around them.

Source:

www.sciencedaily.com/releases/2019/09/190905090929.html

Twist-based Refrigeration: Twisting and Coiling 'Twistocaloric' Yarns to keep Cool

Researchers of international team led by researchers at The University of Texas at Dallas and Nankai University in China have discovered a new technology for refrigeration that is based on twisting and untwisting fibers. They demonstrated twist-based refrigeration using materials as diverse as natural rubber, ordinary fishing line and nickel titanium wire.

According to the International Institute of Refrigeration, refrigeration and air conditioning consume about 20% of global electrical energy. Conventional refrigerators also release gases that significantly contribute to global warming.

As consumption continues to grow, especially due to the increasing needs of developing nations, researchers are investigating alternative cooling technologies to increase refrigeration efficiency, lower costs and reduce size.
To investigate the origin of the cooling effect in the fishing line, the researchers turned to X-ray crystallography, which allowed them to determine what was happening on the molecular level when twist was changed by stretching a coiled fiber.

Many challenges and opportunities exist on the path from these initial discoveries to commercialization of twist fridges for diverse large- and small-scale applications. The opportunities include using performance-optimized twistocaloric materials, rather than the few presently studied commercially available candidates.

Source:

www.sciencedaily.com/releases/2019/10/191010142152.html

Portable Electronics: A stretchable and flexible Biofuel Cell that runs on Sweat

A unique new flexible and stretchable device, worn against the skin and capable of producing electrical energy by transforming the compounds present in sweat, was recently developed and patented. This cell is already capable of continuously lighting an LED, opening new avenues for the development of wearable electronics powered by autonomous and environmentally friendly biodevices.

The potential uses for wearable electronic devices continue to increase, especially for medical and athletic monitoring. Such devices require the development of a reliable and efficient energy source that can easily be integrated into the human body. Using "biofuels" present in human organic liquids has long been a promising

avenue.
The biofuel cell, which follows deformations in the skin, produces electrical energy through the reduction of oxygen and the oxidation of the lactate present in perspiration. Once applied to the arm, it uses a voltage booster to continuously power an LED. It is relatively simple and inexpensive to produce, with the primary cost being the production of the enzymes that transform the compounds found in sweat. The researchers are now seeking to amplify the voltage provided by the biofuel cell in order to power larger portable devices.

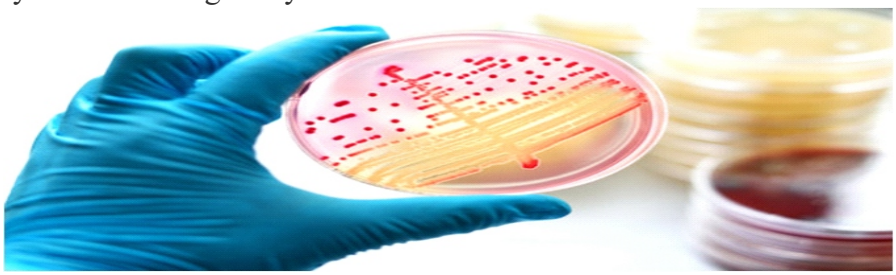
Source:

www.sciencedaily.com/releases/2019/09/190925123431.html

Machine learning Predicts behavior of Biological Circuits

Neural networks cut modeling times of complex biological circuits to enable new insights into their inner workings

Biomedical engineers have devised a machine learning approach to modeling the interactions between complex variables in engineered bacteria that would otherwise be too cumbersome to predict. Their algorithms are generalizable to many kinds of biological systems.



Bacterial colonies in dish (stock image). Credit: © jarun011 / Adobe Stock

In fact, the researchers trained a neural network to predict the circular patterns that would be created by a biological circuit embedded into a bacterial culture. The system worked 30,000 times faster than the existing computational model.
To further improve accuracy, the team devised a method for retraining the machine learning model multiple times to compare their answers. Then they used it to solve a second biological system that is computationally demanding in a different way, showing the algorithm can work for disparate challenges.
The researchers are now trying to use their new approach on more complex biological systems. Besides running it on computers with faster GPUs, they're trying to program the algorithm to be as efficient as possible.
Scientists now aim to improve these neural network systems to provide a window into the underlying dynamics of more complex biological circuits.

Source:

www.sciencedaily.com/releases/2019/10/191002165235.html

Harnessing Tomato jumping Genes could help Speed-breed drought-Resistant Crops

Once dismissed as 'junk DNA' that served no purpose, a family of 'jumping genes' found in tomatoes has the potential to accelerate crop breeding for traits such as improved drought resistance.

Tomato plant (stock image). Credit: © Szasz-Fabian Jozsef / Adobe Stock.

Researchers have discovered that drought stress triggers the activity of a family of jumping genes (Rider retrotransposons) previously known to contribute to fruit shape and colour in tomatoes. They further highlighted that the Rider family is also present and potentially active in other crops, highlighting its potential as a source of new trait variations that could help plants better cope with more extreme conditions driven by our changing climate.

Today's gene targeting technologies are very powerful, but often require some functional understanding of the underlying gene to yield useful results and usually only target one or a few genes. Transposon activity is a native tool already present within the plant, which can be harnessed to generate new phenotypes or resistances and complement gene targeting efforts. Using transposons offers a transgene-free method of breeding that acknowledges the current EU legislation on Genetically Modified Organisms.

Identifying that Rider activity is triggered by drought suggests that it can create new gene regulatory networks that would help a plant respond to drought.

Source:

www.sciencedaily.com/releases/2019/09/190916143949.html

Forthcoming Tech Events

Pakistan

International Conference on Information and Education Innovations
17 November, 2019
Lahore
www.researchsociety.co

International Conference on Recycling and Waste Management
25 December, 2019
Lahore
www.researchsociety.co

International Conference on Agricultural and Biological Science
28-29 December, 2019
Rawalpindi
www.iser.co/Conference2019/Pakistan/2/ICABS/

International Conference on Science, Health and Medicine
28-29 December, 2019
Rawalpindi, Pakistan
www.iser.co/Conference2019/Pakistan/2/ICSHM/

International

International Conference on Science Technology and Management
25-26 January, 2020
Paris, France
www.iastem.org/Conference2020/France/2/ICSTM

9th International Conference on Education and Management Innovation
13-15 February, 2020
Barcelona, Spain
www.wikicfp.com

8th International Conference on Information and Education Technology
28-30 March, 2020
Okayama University, Japan
www.iciet.org

International Science Technology and Engineering
8-10 April, 2020
George Town, Malaysia
www.10times.com/istec-penang

Tech & Trade Offers

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