Newsletter

Digital University Kerala

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Digital University Kerala joins hands with IISER for academic and research collaboration

Digital University Kerala (DUK) and Indian Institute of Science Education and Research, Thiruvananthapuram (IISER) have signed a Memorandum of Understanding (MoU) for academic and research cooperation that includes a plan for a joint international center of excellence for translational research in data science, and electronics manufacturing.

The MoU for cooperation between the two leading academic institutions was signed by DUK Vice Chancellor Dr Saji Gopinath and IISER director Prof. Jarugu Narasimha Moorthy. Prof. Alex P James (Dean, Academics) and Prof. Asharaf S (Dean, Research & Development) attended the signing in ceremony.

Through the joint academic programs and research projects, the strengths of both institutions from basic science to practical applications will be explored in a cross-disciplinary fashion. This MoU will foster faculty and student excellence towards attempting to solve grand scientific challenges in the years ahead.

As part of the initiative, DUK and IISER will work towards development of joint MSc, M.Tech, PhD programs in data science , electronics and inter-disciplinary themes. In addition to the joint programs, the MoU also includes provision for student exchange programs that will provide opportunities for students to collaborate with researchers and experts from both institutes, as well as from industry partners, preparing them for their future careers.

DACE second batch course inaugurated

The courses for Digital Access for Community Empowerment (DACE) second batch commenced on Feb 1,2023, which was Inaugurated by Digital University Kerala (DUK) Vice Chancellor Dr. Saji Gopinath.

This course gives students an opportunity to understand social issues and to attempt technology solutions. The students as part of DACE gather relevant data from communities that will be useful in integrating digital technologies for community development. Students work as teams during their visit to various areas.

Digital Access for Community Empowerment (DACE)

Congratulations!

Prof. Alex P James (Dean Academics- Digital University Kerala) got Outstanding Researcher Award 2022 instituted by IEEE Kerala Section. The award is in recognition for his theory-led research contribution for developing next-generation analog/mixed-signal neural systems leading the product development and start-up ecosystem in Kerala.

74th republic day celebrated in the campus

Session Chair - AICAPS 2023

Served as a Session Chair (Natural Language Processing and Machine Learning Track) for the IEEE International Conference on Advances in Intelligent Computing and Applications (AICAPS 2023) organized by the Department of Computer Applications, Cochin University of Science and Technology (CUSAT) on Feb 01.

Duk Sports Events

DUK football team won by 4-0 in the football tournament, which is conducted by Leeds arena Football Turf Pallipuram against Kaniyapuram FC.

DUK cricket team marches ahead in TPL 2022

The DUK cricket team earned a 5-wicket victory over FTIanzz on Thursday,26th January 2023, to march into the Qualifying round (Phase 2) of the Technopark Premier League. The winning streak started by beating Speridian Strikers by a dominant 6 wicket win, a week earlier. By two consecutive wins over two teams in the first phase, DUK emerged as the group champions, moving ahead to the second phase of the qualifying round.

TPL Cricket tournament is an annual cricket tournament conducted by Technopark, Trivandrum in association with Murugan Cricket Club, for the companies functioning inside Technopark. The tournament is intended for showcasing the Cricketing expertise of the employees who work in the Technopark Campus. With 152 teams from various companies in Technopark participating in the current edition of TPL, it is one among the largest cricket tournaments in India.

Thu 26th Jan 2023		
Technopark Ground		
Digital University Kerala B	vs	Ftianzz
69/5 (8.1 ov)		48/6 (8.0 ov)
Digital University Kerala B won by 21 runs		

Sun 22nd Jan 2023		
Technopark Cricket Ground		
Digital University Kerala - B	vs	Sperdian Strikers
44/4 (6.2 ov)		43/8 (8.1 ov)
Digital University Kerala B won by 6 Wickets		

Faculty Publications

- Bhabesh Deka, Helal Mullah, and Sumit Datta "Joint Sparse Representation-based Single Image Super-resolution for Remote Sensing Applications," IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2023

- Sreelakshmi, S., Malu, G., Sherly, E., & Mathew, R. (2023). M-Net: An encoder-decoder architecture for medical image analysis using ensemble learning. Results in Engineering, 100927. https://doi.org/10.1016/j.rineng.2023.100927

- Nair AS, Thampi SM. A location-aware physical unclonable function and Chebyshev map-based mutual authentication mechanism for internet of surveillance drones. Concurrency and Computation: Practice and Experience. https://doi.org/10.1002/cpe.7564

- Nikhil V. Chandran, Anoop V. S., Asharaf S., "TopicStriKer: A Topic Kernels-powered approach for Text Classification", Results in Engineering, Elsevier

- **Van teinhoven foundation grant:** Arjun CP (PhD research scholar, IIITMK), and Prof. Jaishankar R. received a grant for developing a Non-invasive wildlife monitoring system to mitigate Human-wildlife conflict and promote conservation. Funding Agency: The Van teinhoven foundation, Netherlands Grant amount:- 6199 euros (Please visit the below site for more content): https://vantienhovenfoundation.com/projects/94

  Paper Presented:

- Arka Ghosh, Shreyashi Dey, Raja Das and Gautam Mahapatra, *"Ensemble learning and it's application in spam detection."* International Conference on Computer Electrical and Communication Engineering ICCECE, 2023.

- Ms Sabitha Rani B S, *"Kidney Stone detection from CT Images using probabilistic Neural Network and watershed algorithm "* IEEE International Conference on Advances in intelligent Computing and Applications (AICAPS-2023) organized by Department of Computer Applications, Cochin University Of Science and Technology, Kochi, Kerala, India, during February 1-3, 2023

Knowledge Centre News
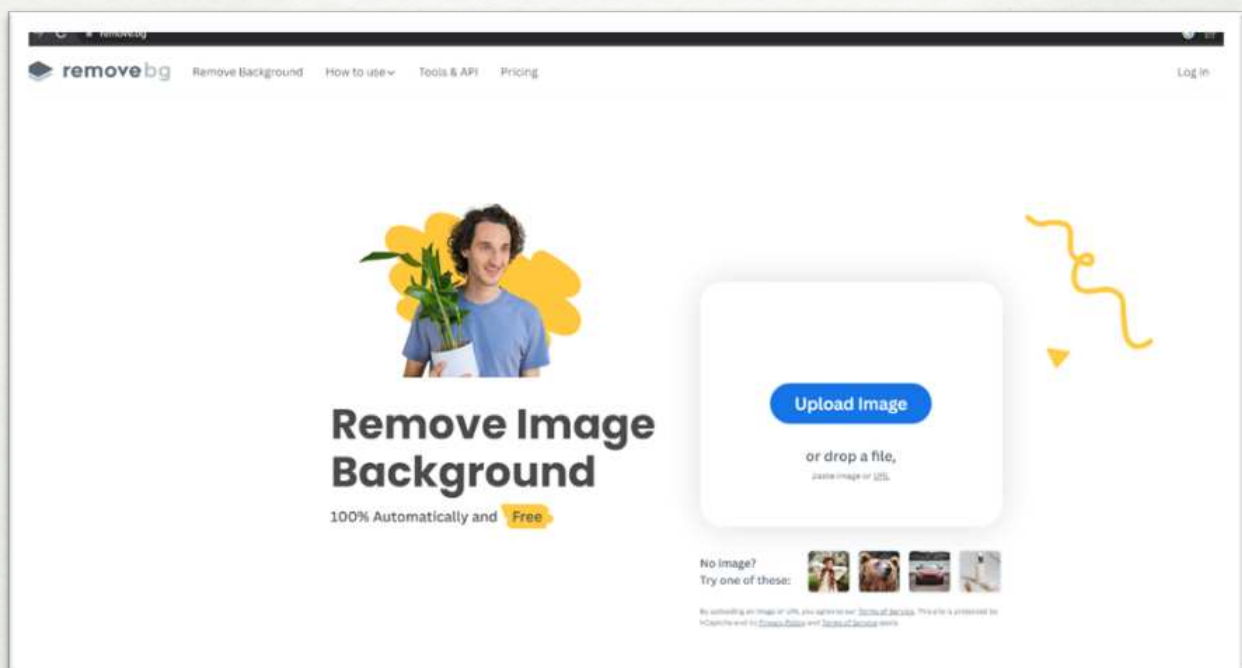
Website of the Month

Remove.bg
https://www.remove.bg/

Remove. bg is a web-based service to remove the background of any photo. It works 100% automatically: You don't have to select the background/foreground layers to separate them manually - select your image and instantly download the resulting image with the background removed!

It uses sophisticated AI technology to detect foreground layers and separate them from the background. To improve the results, it has several additional algorithms in place, for instance, to enhance fine details and prevent color contamination. You can upload any image in JPG or PNG format with a file size of up to 12 megabytes.

All photos with a subject meant to be in the foreground are supported. For instance, most photos of people, products, animals, cars, and other objects work.
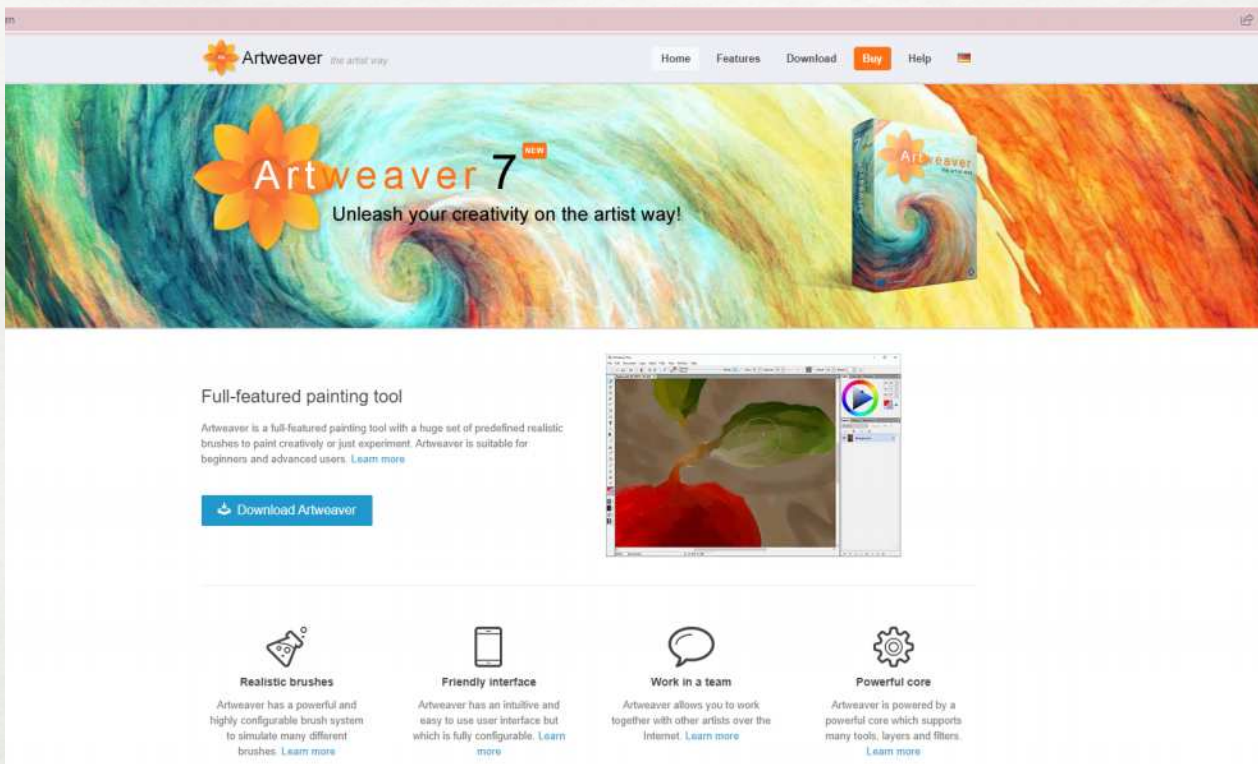
Software of the Month

[Artweaver](https://www.artweaver.de/en)
(https://www.artweaver.de/en)

Artweaver is a full-featured painting tool with a huge set of predefined realistic brushes to paint creatively or just experiment. Artweaver is suitable for beginners and advanced users. Artweaver has a powerful and highly configurable brush system to simulate many different brushes. Each brush configuration can be saved as a new variant or even into a new category. Artweaver records the whole painting process as events and allows to save and later to replay them. Demonstrate other users your painting style or just show the progress from an empty image to a finished artwork.
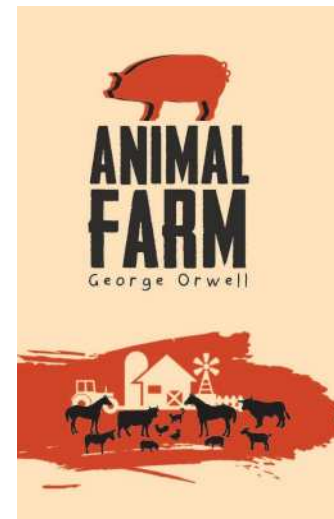
Book Review of the Month

"Animal Farm" by George Orwell

Animal Farm by George Orwell is a fictional story where animals of a farm rebel against human enslavement and operate the farm by themselves. Pigs, the most genius among animals, as depicted in the story, take charge of all the planning and coordination. It's incredible how they get such advanced plans just by reading the books left by Mr. Jones, the human farmer. It depicts the importance of reading, some politics, and how others who are illiterate can be manipulated easily.
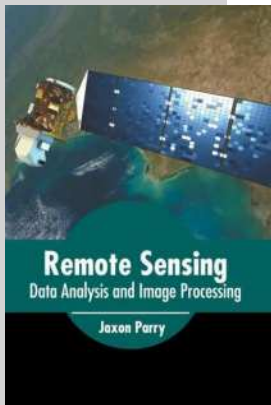
It's interesting to read about the animals' challenges in operating the farm without any human intervention. Orwell's writing is powerful and thought-provoking, and the story is straightforward, making it accessible to a larger audience. The characters are well-developed, and readers can connect with them and understand their motivations. The novel is concise and requires a little time to finish. So if you have not yet read "Animal Farm", I highly recommend doing so as soon as possible.

Renij Rajeev
MTech Computer Science specializing in AI
2021-23 Batch

New Additions to the knowledge centre Collection

Remote sensing: Data analysis and image processing

The information gained about an object or phenomenon without making any physical contact with that object is known as remote sensing. This information has four characteristics. They are spatial, temporal, spectral and radiometric resolution. This domain can be divided into two types; Active and passive remote sensing. Active remote sensing is the reflection of signal emitted by a satellite that is indentified by the sensor. Passive remote sensing is the reflection of the light of the sun that is identified by the sensor. This field is used in various other fields such as land surveying, ecology, meteorology, oceanography, hydrology and geography. It also has various commercial, military, planning, intelligence and humanitarian applications. Weather forecasting and reports on climate change are some of the other areas where this discipline finds its application. The book aims to shed light on some of the unexplored aspects of this discipline. It also outlines the processes and applications of remote sensing in detail. It will serve as a valuable source of reference for those interested in this field.
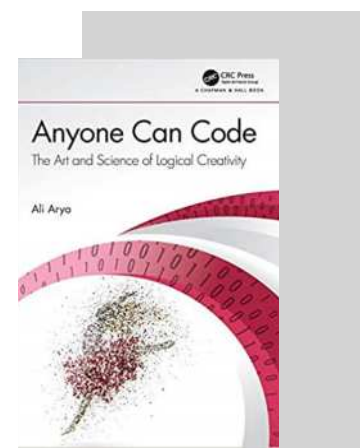
Source :Amazon
Parry, Jaxon(2022) *Remote sensing: Data analysis and image processing*, USA, Murphy and Moore.

Any one can code: The art and science of logical creativity
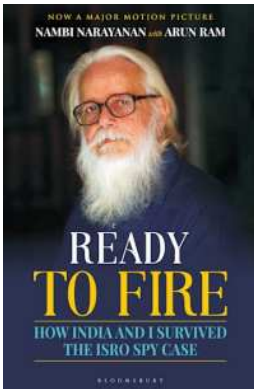
Anyone Can Code: The Art and Science of Logical Creativity introduces computer programming as a way of problem-solving through logical thinking. It uses the notion of modularization as a central lens through which we can make sense of many software concepts. This book takes the reader through fundamental concepts in programming by illustrating them in three different and distinct languages: C/C++, Python, and Javascript. Key features: Focuses on problem-solving and algorithmic thinking instead of programming functions, syntax, and libraries; Includes engaging examples, including video games and visual effects; Provides exercises and reflective questions.

Source :Publisher
Arya, Ali(2021) *Any one can code: The art and science of logical creativity*, Boca Raton, CRC Press.

Ready to fire : How India and I survived the ISRO spy case

The information gained about an object or phenomenon without making any physical contact with that object is known as remote sensing. This information has four characteristics. They are spatial, temporal, spectral and radiometr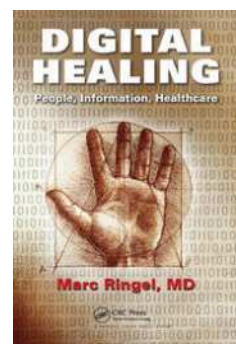ic resolution. This domain can be divided into two types; Active and passive remote sensing. Active remote sensing is the reflection of signal emitted by a satellite that is indentified by the sensor. Passive remote sensing is the reflection of the light of the sun that is identified by the sensor. This field is used in various other fields such as land surveying, ecology, meteorology, oceanography, hydrology and geography. It also has various commercial, military, planning, intelligence and humanitarian applications. Weather forecasting and reports on climate change are some of the other areas where this discipline finds its application. The book aims to shed light on some of the unexplored aspects of this discipline. It also outlines the processes and applications of remote sensing in detail. It will serve as a valuable source of reference for those interested in this field.

Source :Publisher
Narayanan, Nambi (2022) *Ready to fire : How India and I survived the ISRO spy case,* New Delhi, Bloomsbury

Digital Healing People, Information, Healthcare

Medical practice and research are inconceivable today without electronic computing and communication tools. Digital machines do many tasks orders-of-magnitude better, faster and more accurately than humans.till, there are functions critical to the healthcare endeavor that peopl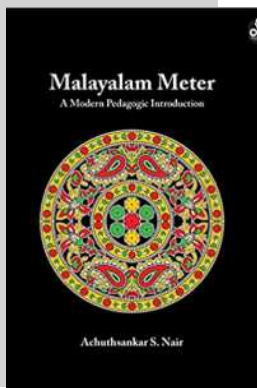e do much better than machines, things like: understanding and using natural language; perceiving what is unexpressed; taking into account values, culture, ethics, and human relationships; touching and healing. For the foreseeable future, the "smartest" computers will be no match for human beings when it comes to performing these most anthropic functions.

Source :Publisher
Ringel, Marc (2018) *Digital Healing People, Information, Healthcare,* Boca Raton, Routledge.

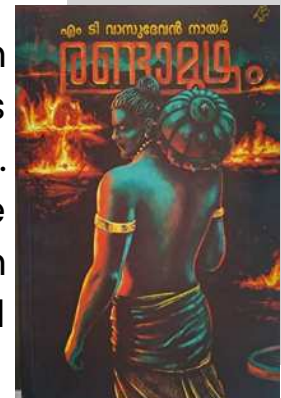## Malayalam Meter: A Modern Pedagogic Introduction

The initial chapters of this book are aimed at novices, to enable them to enjoy the art of poetic meters in Malayalam. It is written in unique pedagogic style. Later chapters may be suitable for scholars. The book includes a generous number of examples including contemporary poems. QR codes and links provide audio of 'Cholvadivu' of meters, which are absolutely essential to communicate ideas related to Malayalam meters. The chapter titled "Meter, rhythm, music & freedom" discusses a spectrum of formats from metric verse to prose poetry. About 4000 couplets of Malayalam poems were collected and analyzed using computer programs. Insights on meters, based on their computational analysis are presented in this book. A chapter has been included on the possibility of new meters. Computer programs for identification of meters, both Malayalam and Sanskrit, are included.

Source :Amazon
Nair, Achuthshankar.S(2022) *Malayalam meter: A modern pedagogic introduction*, TVPM, Infinity Indica Publishers.

Randamoozham

Randamoozham is the masterpiece of Jnanpith winning writer M. T. Vasudevan Nair. It was translated into English as Second Turn in 1997. M. T. Vasudevan Nair won Vayalar Award, given for the best literary work in Malayalam, for the novel in 1985. Later, in the year 1995, Mr. Nair was awarded the highest literary award in India, Jnanpith Award, for his overall contribution to Malayalam literature. The novel is set as a retelling of the Indian epic Mahabharata, from the view of Bhima, the second Pandava.
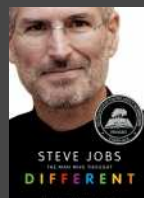
Source :Publisher
Nair, M T Vasudevan(2021) *Randamoozham*, Thrissur, Cosmo Books.

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