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TRANSFORMATIVE WORKSHOP ON "QUALITY PROCESSES AND CMMI STANDARDS"

NEWSLETTER

DIGITAL UNIVERSITY KERALA

Kerala University of Digital Sciences, Innovation and Technology

DIGITAL UNIVERSITY KERALA

Curating a responsible digital world

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75th Republic Day Celebration at DUK

DUK commemorated the 75th Republic Day with a spirited celebration on January 26th at 9:00 AM. Honourable Vice Chancellor Prof. Saji Gopinath proudly unfurled the national flag, followed by a security staff parade. Student Council Secretary Mr. Nithin K.S. guided everyone present in the solemn recitation of the national pledge. The occasion resonated with insightful speeches from Honourable Registrar Dr. A. Mujeeb, Prof. K. Pradeep Kumar, and Student Council representative Miss Meenakshi A.K.

Prof. Md. Meraj Uddin, Chairman of Student Affairs, expressed heartfelt gratitude before the joyous distribution of sweets to students, staff, and faculty, concluding a day filled with national pride and unity.

Workshop on Quality Processes and CMMI Standards

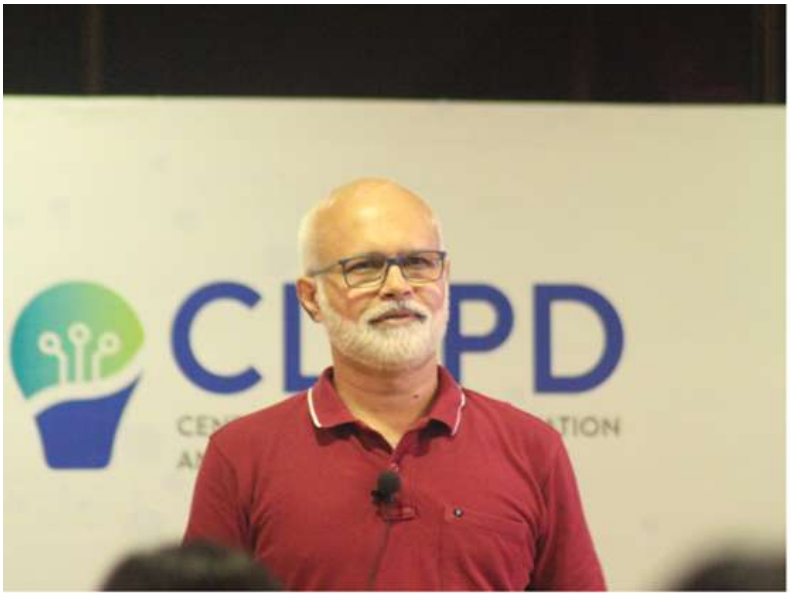
Centre for Digital Innovations and Product Development (CDIPD), a Centre of Excellence under DUK, conducted a transformative workshop on "Quality Processes and CMMI Standards" from January 11th to 13th, 2024, at Hotel Lake Palace. The theme of the workshop was to sensitize the team on the significance of adopting quality processes in achieving organizational goals. The workshop also focused on fostering team collaboration, improving communication, and thereby enhancing the overall team effectiveness.

The first day commenced with an enriching Session on Agile Project Management taken by Brajesh C. Kaimal, Co-founder, and Director, Experion Technologies (P) Ltd, followed by a power-packed session by Ms. Fincy Yousuff, Vice President for Growth, Equipo Health, who took the participants to the realm of Agile Methodologies through Gamification.

Second day, the sessions delved into the aspects of Quality Processes and CMMI Standards which were taken by experts Mr. Santhosh Kurup, Professor of Practice, School of Digital Humanities and Liberal Arts, DUK and Mr. Balamurali L, MR & Head Quality and Testing, SFO Technologies (P) Ltd. Session providing an overview on CI/CD Pipeline Integration Process was handled by Mr. Amal K J, QC and Delivery Manager, Data Analytics Wing, DUK.

The third day started off with an enriching session on “AI & Gen AI in Action: Potential Opportunities” by the Respected Dean of Research, Dr. Manoj Kumar T. K. To invoke the path towards creative thinking and fostering an environment of innovation, the session on "Design Thinking" was taken by our esteemed Honourable Vice Chancellor, Prof.SajiGopinath.

A formal concluding session followed, which was graced by esteemed dignitaries, including Honourable Vice-Chancellor Prof. Saji Gopinath, Registrar Prof. Mujeeb A., Dean Research Prof. Manoj T. K., and Director CDIPD Prof. Ajith Kumar R.



Day 1

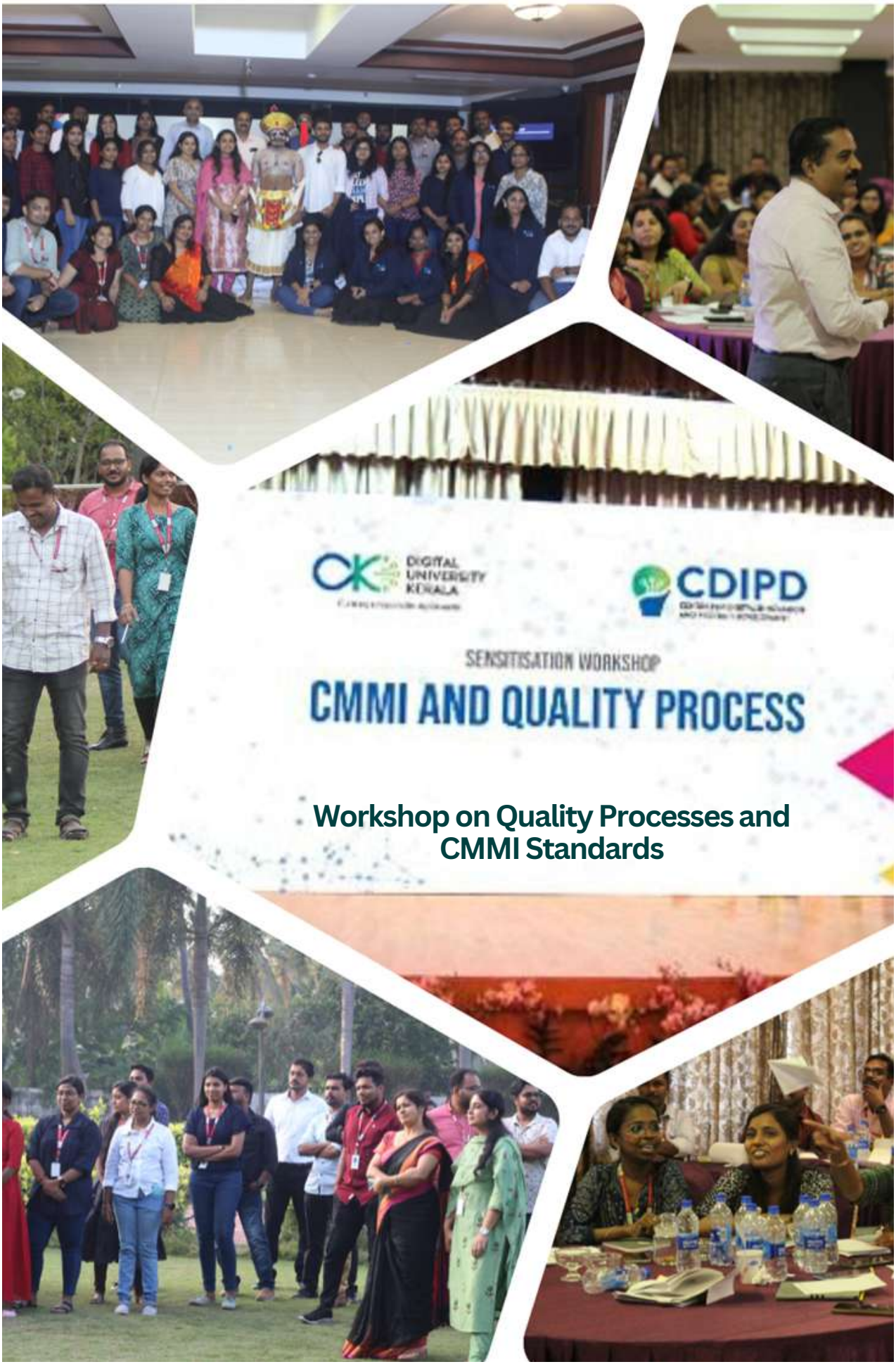
Workshop on Quality Processes and CMMI Standards

Day 2

Workshop on Quality Processes and CMMI Standards

Day 3

Workshop on Quality Processes and CMMI Standards



Workshop on Quality Processes and CMMI Standards

Dr Saji Gopinath, Vice Chancellor of Digital University Kerala in his recent conversation with The New Indian Express

In a recent conversation with The New Indian Express, Dr Saji Gopinath, Vice Chancellor delved into the inception and remarkable journey of the university in transforming the digital ecosystem. Also sheds light on the transformative impact and the milestones achieved in establishing the Digital University Kerala dedicated to digital education.

THE NEW SUNDAY EXPRESS | KERALA

04 THIRUVANANTHAPURAM | SUNDAY 07.01.2024

People from other educational backgrounds also require digital technology. Our concept is to take peo from conventional domains to digital technology

newindianexpress.com

'VARSITIES HAVE TO PLAY VARIED ROLES.. STANFORD CREATED SILICON VALLEY'

Saji Gopinath, the first vice-chancellor of the path-breaking Digital University Kerala, has been one of the key drivers of the state's renewed push in the knowledge economy. He served as a member of the Chief Minister's High-Power IT Committee from 2017 to 2019, and as CEO of Kerala Startup Mission from 2017 to 2020, before taking up his current pioneering role. In a wide-ranging discussion with *TNIE*, he outlines the plans and strategies at the Digital University, including tie-ups with foreign varsities, strategic alliances in areas such as graphene, and plans to attract global talents. Excerpts

EXPRESS Dialogues

Software startups have comparatively foot-loose staffers. They easily migrate from one place to another. They go to places where easy money is available

Former IT secretary M Sivasankar played a key role in the development of the state's IT sector. I had worked closely with him, and found him to be a great professional. I found him to be a very bright person who made quick decisions.

Though we have created an excellent infrastructure, I believe we have not marketed it well, wh compared with othe states

How did the concept of Digital University come up?

When we looked around, we found that Indian Institutes of Information Technology in other states had been converted into public-private universities. In Kerala, we could not do so. We realised that if we sought to scale up the institution, especially while looking at the knowledge economy, it was important to have a social institution/university to drive that. That's how the concept of the Digital University emerged, and IIITM-K was transformed into the Digital University. The ordinance came in 2020, and the Act was passed in 2021.

Your Digital University is the first of its kind in India... Could you elaborate on the model?

The Digital University is not a virtual one. It primarily focuses on creating talents to work in the digital space. There is going to be a substantial change from the physical-cum-industrial world to the digital world. Everyone has started applying AI in their work. In the current system, the digital aspects are handled only by people who are from a technology background. But, people from other educational backgrounds also require this digital technology. The concept is to take people from conventional domains to be developers or programmers. Similarly, we take the students from chemistry and teach them about computational drug designing; the pharma sector requires those who know about computational drug designing. This transition is what the university is looking for. That is why we have only postgraduate courses. We are envisaging courses like media-tech and judiciary-tech, too.

What about research?

Yes, the other vertical of the university is research. We believe there is a need for a substantial amount of research in the emerging domains. People do research in technology per se. However, a fundamental shift is happening, as there are sociological aspects related to technology. We need to study that as well.

Any other areas?

We believe in the new world, universities have to play different roles. Conventional universities will be creating talents who go on to create an economy. However, universities can play a direct role in creating an economy by being a point that attracts industries. Like how Stanford University created Silicon Valley. We think that good faculty who are doing applied research can work with an industry. We create an infrastructure where industries can come to us and create products by working with academia. In this concept, we have set up a graphene park or ecosystem. We are setting up an Internet of Things ecosystem as well.

Is the Digital University looking at tie-ups with industries?

The largest industrial association is in the graphene park, where we have three stages. The first stage was the applied research side, where Tata Steel is the partner. The second stage is moving from applied research to products, in which we have partnered with Carborundum (Chennai-based company Carborundum Universal). The third stage relates to upgrading to other industries, for which we are associating with the state industrial department. In the Digital Science Park, we are looking for those companies and startups that seek research and development, and are interested in working with us. We have a startup company spin-off from the University of Leeds. We have companies from Spain and the US working in Digital University. C-MET, which is a national institution, and

Where is the graphene development coming up?

The first phase is happening in Kalamassery, in our space... the digital hub area. This is jointly done by the government of India, the government of Kerala, and Tata Steel. The funding came from them. The operation is managed by Digital University. C-MET, which is a national institution, and

Coming to the startup space, there is a perception that Kerala is a good place for hardware, and not software units. What are your views?

It is not exactly correct. Software startups have comparatively foot-loose staffers. They easily migrate from one place to another. They go to places where easy money is available. Partially, it is right because in

There is a perception that the Kerala government is using the glitz of the startup culture to cover up unemployment woes in the state. What's your take?

As far as I see, startups and unemployment are two different things. This is because startups create a lot of value, and employment generation comes later. We have around 6,000 startups, and they must have jointly created a little less than 1,00,000 jobs. However, the SME sector might create much more jobs. That way, it is not only job creation. Job creation is one aspect of it, but it is more of a value creation.

You pointed out that people good at coding are migrating to Bengaluru, as there are better chances of getting investments and jobs there....

I didn't say that people migrate for jobs. I said that if one is looking at creating an asset like a startup, the funding ecosystem available in some of the growth centres in the country is different. That makes some of the startups move out. But that doesn't mean that they are leaving and going. They have their back-end and development offices here. This happens even outside the country. Some of the big names don't have funding coming from India. What we have done is that we have taken this as a metric and said, 'Let us see how many startups we can retain here and also bring from outside'. So we developed support systems and infrastructure. I don't think too many states provide such things. However, we have not marketed it well, when compared with other places.

You spoke about a blend of digital and hardware expertise. Keralites are reasonably skilled in programming. But for the hardware, how do you democratise the

with foreign universities?

We have tied up with three top universities – Oxford, Edinburgh, Manchester. We also have tie-ups with the University of Southampton. We are exploring similar tie-ups with other universities. We are looking at areas where we can have mutual collaboration.

Considering the major d opments here, do you people who had gone ab returning?

Well, when we talk to In

professors working ab about the developments pening here, they are acti happy to hear it, and they been recommending som their spin-offs to come to state. They want our sort o frastructure. The GBS (An can multinational GBS Al ty) started a centre Kolakkada, Kollam. It sh be noted that employees given the same salary a their Bengaluru centre. shows that they know tha have the necessary infrast ture and the talent pool need.

It is said former IT secre M Sivasankar played a role in the developmen the state's IT sector...

Yes, he did. Not only in I played a key role in many as. When he handled mul posts, like tourism director director of the Directorat

https://epaper.newindianexpress.com/c/74284152

Hosted a Science Lecture at Digital University as a part of Global Science Festival 2024

Global Science Festival Kerala, a comprehensive science event featuring not only the main exhibition but also a series of science lectures, seminars, and other programs, seeks collaboration with Digital University to enhance its impact in the city.

An enlightening talk by_ Dr. Robert Potts, an educator and researcher in Creative Digital Design at The School of Digital Arts at Manchester Metropolitan University. The date for the programme was 16th January 2024.

Dr Robert Potts is an educator and researcher in Creative Digital Design at The School of Digital Arts at Manchester Metropolitan University. Working with many pioneering learning institutes and organizations, Rob contributes to applied research into design processes concerning education, technology, and place with a specific interest in design leadership, research through design and collaborative innovation. He applies design-led approaches in across-domain way, sometimes as creative director, consultant, ethnographer, or documentarian to explore issues of learning, leading, and organising.

As part of the Global Science Festival Kerala, scheduled from January 15th, 2024, his talk will be of great value to the academic community at Digital University.

GREAT Talks
A lecture series by subject experts from the UK
BRITISH COUNCIL
Scan to know more about studying in the UK

DUK Outreach Program with 19 Arts and Science Colleges, Kerala

Digital University Kerala conducted an outreach program, a symposium in collaboration with 19 Arts and Sciences Colleges across different districts in Kerala in the month of January 2024, led by Dr. Christie Thomas Cherian, Admission Chair at Digital University Kerala. Members of the admission committee from five schools participated in the symposium and delivered talks on various topics related to digital technologies and data analytics.

The committee members included Dr. Christie Thomas Cherian (Admission chair), (School of Electronics), Dr. Sooraj N P (School of Informatics), Dr. Aswin V S (School of Digital Science), Dr. Shanujas V, (School of Digital Humanities and Liberal Arts), and Dr. Abhishek Kaushik (School of Computer Science).

Faculties from different schools included Prof. Satheesh Kumar and Dr. Sini V Pillai (School of Digital Humanities and Liberal Arts), Prof. Anoop V S (School of Computer Science), Dr. Shamjid P (School of Digital Science), and Mr. Nikhil P also participated and delivered talks.

DUK outreach program at EMEA Arts and Science College Kondotty, Malappuram

Dr. Shanujas V delivered a session on ‘Building a Successful Career in the Digital Era’ at EMEA Arts and Science College, Kondotty, Malappuram district, as part of the DUK outreach program on January 25, 2024.

Dr. Anoop V. S. has been awarded Responsible Computing Challenge Research Grant by Mozilla Foundation and United States Agency for International Development

Dr. Anoop V. S. (Research Officer - School of Digital Sciences) has been awarded $25,000 USD (INR 2,000,000) for the Responsible Computing Challenge by Mozilla Foundation and the United States Agency for International Development. The initiative blends Computer Science curricula with other disciplines, like the Humanities, Law, Policy, and Social Sciences, that address social context, critical thinking in technology design, inequality in technology, and equitable systems. Dr. Anoop's proposal titled "Integration of Modules on Responsible NLP into Existing Natural Language Processing Course for Computing Students using Flipped Classroom Strategies and Outreach Components" has been selected from a pool of 43 applications.

Dr. Anoop V. S

Research Officer
School of Digital Sciences

PGCSBM Batch 3 Final Networking Session and Examination

Third Physical Networking Session and Final Examination of Certificate Program in Entrepreneurship and Small Business Management- Batch 3 was successfully conducted on January 8th 2024 at DUK campus. 110 eligible participants attended the networking session and final examination. A final project Review and Evaluation was overseed by Dr. Sini V Pillai, Assistant Professor, School of Digital Humanities and Liberal Arts.

School of Digital Humanities and Liberal Arts conducted Certificate Program in Entrepreneurship and Small Business Management for the Executives of the Directorate of Industries and Commerce .This comprehensive program organized by Digital University Kerala was conducted in three batches, benefiting about 1000 executives. The program has not only equipped them with essential skills but has also played a pivotal role in catalyzing business growth within their respective panchayats. Each batch underwent 228 hours of sessions, providing valuable insights and practical tools to navigate the dynamic business landscape.

Institution's Innovation Council (IIC) Regional Meet @ Kochi

Digital University Kerala Participated in the regional meet of IICs, organized by MoE's Innovation Cell & AICTE , hosted by School of Engineering, CUSAT on 16th January 2024. The Innovation Initiatives of IIC established in the DUK, during the last one year was showcased during the event.

COCONET'23 Conference

The research paper titled "Computational Models and Neural Insights in Music Neuroscience" by Satchithananthi Aruljothi and Malu G. was presented at the Fifth International Conference on Computing and Network Communications (CoCoNet'23), held from December 18 to 20, 2023, in Bangalore, India. The work delved into the complexities of understanding the relationship between the human brain and music. The paper explored various computational models, including Rule-Based Interactions, Agent-Based Models, Generative Models, and more, shedding light on different aspects of music cognition. By integrating these models, researchers aim to unravel the intricate mechanisms underlying our perception of music, offering valuable insights into this captivating field.

SOCIAL ENGAGEMENT CENTRE

Project Revision for Jalsuraksha by Pothencode Panchayat

The Social Engagement Centre was approached by Pothencode Panchayat to contribute towards its 'Jalasurakha' to ensure self sufficiency in water. Considering the fact that the Social Engagement Centre, DUK was able to bring together various stakeholders for discussions and coordinated action plan for the purpose. The Panchayat has requested the Centre to submit a report summarising the various efforts already outlined by agencies like MGNREGA, Departments like Minor Irrigation and Underground Water. The Panchayat has included this proposal in its project revision.

Pothencode Thettiyar Thalakkulam

SOUTH ZONE INTER UNIVERSITY TOURNAMENT

Association of Indian Universities (AIU), New Delhi in collaboration with the Tamil Nadu Dr. Ambedkar Law University has organized and conducted The South Zone Inter University Chess (Woman) and Football tournaments, 2023-2024 from 25th to 30th December 2023 at their campus.

These events provided an excellent platform for DUK students to showcase their skills and sportsmanship.

SOUTH ZONE INTER UNIVERSITY FOOTBALL MEN TOURNAMENT 2023-2024

SOUTH ZONE INTER UNIVERSITY CHESS WOMEN CHAMPIONSHIP 2023-2024

Congratulations!

- Rajendran, B., Vidya, C. G., Sanil, J., & Asharaf, S. (2024). A Local Explainability Technique for Graph Neural Topic Models. Human-Centric Intelligent Systems. https://doi.org/10.1007/s44230-023-00058-8
- James, A. Energy efficiency and design challenges in analogue memristive chips. Nat Rev Electr Eng 1, 6–7 (2024). https://doi.org/10.1038/s44287-023-00008-3
- S.S. Muni, Ergodic and resonant torus doubling bifurcation in a three-dimensional quadratic map, Nonlinear Dynamics, Springer Nature, http://dx.doi.org/10.1007/s11071-024-09284-6, 2024
- Rajan, S. C., Vishnu, M., Mitra, A., Sooraj, N. P., Athira, K., Pillai, M. S., &Jaishanker, R. (2024). Threshold of anthropogenic sound levels within protected landscapes in Kerala, India, for avian habitat quality and conservation. Scientific Reports,14(1): 2701.
- Ayushi, K., Babu, K. N., Ayyappan, N., Nair, J. R., Athira, K., & Reddy, C. S. (2024). A comparative analysis of machine learning techniques for aboveground biomass estimation: A case study of the Western Ghats, India. Ecological Informatics, 80, 102479

Book Chapters

- Saranya, Kotturu., Malavika S Nair., & Chintala, Sudhakar Reddy. (2023). From Detection to Management: Insights and Applications from Satellite Remote Sensing of Forest Fires. In book: Exploring Emerging Techniques in Plant Sciences
- Arnab Banerjee, Brian D. Fath, Ursula M. Scharler, Santanu Ray, Ecological Modeling in Environmental Management: History and Applications, Reference Module in Earth Systems and Environmental Sciences, Elsevier, 2023, ISBN 9780124095489,https://doi.org/10.1016/B978-0-323-90798-9.00097-4

Invited Talk

Dr. Sinnu Susan Thomas gave an invited talk on Can Robots Learn at the Defence Institute of Advanced Technology in Pune on January 12, 2024.

Publications of the Year 2023

- Deka, B., Mullah, H. U., Barman, T., & Datta, S. (2023). Joint Sparse Representation-based Single Image Super-Resolution for Remote Sensing Applications. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 16, 2352-2365.
- 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, 17, 100927.Nair, A. S., & Thampi, S. M. (2023). A location-aware physical unclonable function and Chebyshev map-based mutual authentication mechanism for internet of surveillance drones. Concurrency and Computation: Practice and Experience, e7564.
- Chandran, N. V., Anoop, V. S., & Asharaf, S. (2023). Topicstriker: A topic kernels-powered approach for text classification. Results in Engineering, 17, 100949.
- Anoop, V. S., & Sreelakshmi, S. (2023). Public discourse and sentiment during Mpox outbreak: an analysis using natural language processing. Public Health, 218, 114-120.
- Kunnath, S. K., George, V. M., Kumar, K. S., & Babu, A. (2023). Disability Empowerment in Kerala: A Status Analysis and Vision for the Future. Journal of Developing Societies, 39(1), 104-127.
- Anoop, V. S., Thekkiniath, J., & Govindarajan, U. H. (2023, June). We Chased COVID-19; Did We Forget Measles?-Public Discourse and Sentiment Analysis on Spiking Measles Cases Using Natural Language Processing. In International Conference on Multi-disciplinary Trends in Artificial Intelligence (pp. 147-158). Cham: Springer Nature Switzerland.
- Rahulraj, P. V., Sanil, J., Anoop, V. S., & Asharaf, S. (2023, May). Monetize the Dual: A Data Analytic Approach for Native Language and Prequel Movies Popularity Analysis. In International Conference on Data Analytics and Insights (pp. 183-196). Singapore: Springer Nature Singapore.

- Anoop, V. S. (2023, April). Sentiment classification of diabetes-related tweets using transformer-based deep learning approach. In International Conference on Advances in Computing and Data Sciences (pp. 203-214). Cham: Springer Nature Switzerland.
- Krishnan, A., & Thomas, T. (2023). Finger Vein Recognition Based on Anatomical Features of Vein Patterns. IEEE Access.
- Thomas, S. S., Palandri, J., Lakehal-Ayat, M., Chakravarty, P., Wolf-Monheim, F., & Blaschko, M. B. (2021). Kinematics Design of a MacPherson Suspension Architecture Based on Bayesian Optimization. IEEE Transactions on Cybernetics.
- Badarinath, R., Raju, B. K., Mohammed, A. K., Prabhu, V., & Thomas, S. S. (2023). Real-time Vision Sensor for Volumetric Flowrate Estimation in Robotic Fused Filament Fabrication. IFAC-PapersOnLine, 56(2), 6569-6575.
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- Tharion, J., Viswanathan, A. M., Joseph, J., Steephen, J. E., Ismavel, V. A. (2023). Novel Gravity-driven Device for Intra-operative Auto-transfusion In: Innovative Blood Transfusion Strategies for Blood Deserts in LMICs, Harvard Radcliffe Institute, Cambridge, 6-7 April, 2023.
- Pillai, S.V., Priyadarsini, R.S., Kumar, R.S. (2023). Student Small Satellite Design and Development in India: A Review. Advances in Small Satellite Technologies. Lecture Notes in Mechanical Engineering. Springer, Singapore. ISBN 978-981-19-7473-1.
- Gurram, V. K., Sanil, J., Anoop, V. S., & Asharaf, S. (2023). String Kernel-Based Techniques for Native Language Identification. Human-Centric Intelligent Systems, 1-14.
- Arruda, E. F., Fragoso, M. D., do Val, J. B., & Thomas, S. S. (2023). A novel queue-based stochastic epidemic model with adaptive stabilising control. ISA transactions, 140, 121-133.
- Philip, S., Sherin, D. R., Kumar, T. M., Badisha Banu, T. C., & Roy, R. M. (2023). Molecular docking and simulation studies of some pyrazolone-based bioactive ligands targeting the NF-κ B signaling pathways. Molecular Diversity, 1-11.

- Athira, K., & Jaishanker, R. (2023). Colour Transition of Flowers. https://doi.org/10.21203/rs.3.rs-3095239/v
- Bonam, S., Bhagavathi, K. A., Joseph, J., Singh, S. G., & Vanjari, S. R. K. (2023). An Ultra-Flexible Tactile Sensor Using Silk Piezoelectric Thin Film. IEEE Sensors Journal.
- Ekstedt, M., Afzal, Z., Mukherjee, P., Hacks, S., & Lagerström, R. (2023). Yet another cybersecurity risk assessment framework. International Journal of Information Security, 22(6), 1713-1729.
- Mathew, T., Elangovan, K., & Sreekantan, A. C. (2023). Accurate Interface Schemes for Resistance Thermometers with Lead Resistance Compensation. IEEE Transactions on Instrumentation and Measurement.
- Elangovan, K., & Sreekantan, A. C. (2023). Metrological Evaluation of Robust Relaxation-Oscillator Interface for Remote Resistive Sensors and its Application towards Realizing Few Industrial Measurement Systems. IEEE Open Journal of Instrumentation and Measurement.
- Ramesh, A., Haris, R., & Arora, S. (2023, May). ML based D 3 R: Detecting DDoS using Random Forest. In 2023 IEEE/ACM 23rd International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW) (pp. 141-146). IEEE.
- Krishna, C. S., & Anoop, V. S. (2023, August). Figurative Health-mention Classification from Social Media using Graph Convolutional Networks. In 2023 9th International Conference on Smart Computing and Communications (ICSCC) (pp. 570-575). IEEE.
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- Reddy, B. N. K., & James, A. (2022, October). Hardware Implementation of an efficient FIR filter for ECG Signal Denoising Application. In 2022 29th IEEE International Conference on Electronics, Circuits and Systems (ICECS) (pp. 1-4). IEEE.
- Navaz, P. M., Chithra, R., & James, A. (2023, June). Memristive Crossbar for Hyper Dimensional Consumer Text Analytics Accelerator. In 2023 21st IEEE Interregional NEWCAS Conference (NEWCAS) (pp. 1-5). IEEE.

- Elangovan, K., Sukumaran, V. B., & Sreekantan, A. C. (2023). Geometric Programming Assisted Conversion Time Reduction Technique Applied to a Multiregime-Based Digitizer for Wide Span Resistive Sensors. IEEE Transactions on Instrumentation and Measurement, 72, 1-4.
- "Detection and Hardening Strategies to Secure an Enterprise Network", 19th International Conference on Information and Systems Security, Preetam Mukherjee, Sabu M Thampi, Rohith N, Bishwajit Kumar Poddar, and Ipshita Sen. This paper also introduces the XploitMAP tool for attack modeling, which was developed by DUK students (figure uploaded).
- Security Risk Assessment of Metaverse Based Healthcare Systems Based on Common Vulnerabilities and Exposures (CVE), Ravi Prakash, Gayathri R Nayar, Tony Thomas, 2023 IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE).
- Conference Paper Nikhil V. Chandran, V. S. Anoop, Asharaf S., "Textual semantics analysis using string kernels-based spectral clustering with incremental hierarchical topic clustering", 23rd International Conference on Intelligent Systems Design and Applications (ISDA 2023), Lecture Notes in Network and Systems, Springer.
- Umasankar R, Vimal D Kumar, Pradeep Kumar K, “Digital Transformation in the Government - An Analysis of the India Stack” at the ICSSR Sponsored Two- Day National Seminar - INDIA'S G20 Presidency: Scope for Strengthening Peace And Sustainable Development, Organized by Post Graduate Department of Economics, Nirmala College Muvattupuzha, Kerala on October 3-4, 2023 at Nirmala College, Muvattupuzha, Kochi. The paper was presented in the seminar by Umasankar R, Sr Research Associate, Centre for Digital Transformation & Innovation (CDTI), DUK.
- Deepthimol N K, Pradeep Kumar Kalampukatt, Vimal D Kumar, Kiran Kumar Kakarlapudi, “Does National Innovation Capacity Lead to Reduction in Income Inequality? Empirical Evidence from Panel Data Analysis” at the 20th Anniversary Globelics International Conference 2023 in GIFT, Thiruvananthapuram, 11-14 Oct., 2023. The paper was presented in the conference by Vimal D Kumar, Research Associate, Centre for Digital Transformation & Innovation (CDTI), DUK .

- Vimal D Kumar, Deepthimol N K, Pradeep Kumar K, Kiran Kumar Kakarlapudi, "Pathways to Equitable Prosperity: Investigating the relationship between Innovation and Income Inequality" at the Asia Pacific Innovation Conference (APIC) 2023, Ahmedabad University, Ahmedabad, Gujarat held during Oct 19-21, 2023. The paper was presented in the conference by Pradeep Kumar K, Coordinator, Centre for Digital Transformation & Innovation (CDTI), DUK .
- Bhagavathi, A., Bonam, S., Joseph, J., Singh, S. G., & Vanjari, S. R. K. (2023). Silk Thin Film-Based Triboelectric Nanogenerators for Energy Harvesting Applications. IEEE Sensors Letters.
- Elangovan, K., & Sreekantan, A. C. (2023). An Efficient Digital Readout for Four-Lead Resistance Thermometers. IEEE Sensors Letters.
- Ashique Sherief, Muhammed Fayas et.al (2022). Fruit Disease Detection Using CNN. International Journal of Computer Science Trends and Technology (IJCST) Volume 10 Issue 3, May-Jun 2022.
- Md Meraj Uddin, Roopak Surendran, Gokul Gopakumar Rema, Tony Thomas (2023). A Data Flow-Based Approach for Classification and Risk Estimation of Android Apps. IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE).
- Roopak Surendran, Md. Meraj Uddin (2023). On Impact of Semantically Similar Apps in Android Malware Datasets. IEEE International Conference on Recent Advances in Systems Science and Engineering (RASSE).
- Rajendran, B., Vidya, C. G., Sanil, J., & Asharaf, S. (2024). A Local Explainability Technique for Graph Neural Topic Models. Human-Centric Intelligent Systems, 1-24.
- Muraleedharan, V., & Rajan, S. C. (2024). Geometric entropy of plant leaves: A measure of morphological complexity. Plos one, 19(1), e0293596.
- Kurian, D., Hagberg, G. E., Scheffler, K., & Paul, J. S. (2023). A predictor–corrector phase unwrapping algorithm for temporally undersampled gradient-echo MRI. Magnetic Resonance in Medicine.
- Anjana Jimmington, Alfas Hakeem P, Preetam Mukherjee, Sabu M Thampi (2023), "A Novel Approach for Bridging the Gap Between SDN and MITRE for Agile Incident Response", 5th International Conference on Computing and Network Communications (CoCoNet'23), Bangalore, India.

- Dr. Sini V. Pillai, presented a paper at the POMS India International Conference 2023, hosted by the Production and Operations Management Society POMS India chapter at XLRI Jamshedpur from December 4th to 6th. The presentation, titled "Humanitarian and Crisis Management" delved into the complexities of electric vehicle incidents within the Indian context.
- Leena G Pillai, D. Muhammad Noorul Mubarak, and Elizabeth Sherly, “BiLSTM-CNN with Fixed Weight Approach for Tracking Speech Articulatory Features”, Seventh International Symposium on Intelligent Systems Technologies and Applications (ISTA’23), Bengaluru, India on 18th – 20th December, 2023. The paper in the conference was presented by Leena G Pillai, Research Scientist, Centre for Excellence in Brain Computing, Digital University Kerala.
- Basil K Raju, Leena G Pillai, Kavya Manohar and Elizabeth Sherly, “Automatic Speech Recognition System for Malasar Language using Multilingual Transfer Learning”, 20th International Conference on Natural Language Processing (ICON-2023), Goa University, Goa, India on 14th - 17th December, 2023. The paper in the conference was presented by Basil K Raju, Intern, VRCLC, Digital University Kerala.
- The research paper titled “EEG-based Imagined Word Recognition using CNN-Bi-GRU,” authored by Ms. Sabitha Rani and Dr. Elizabeth Sherly, has been accepted for presentation at the IEEE conference RAAI 2023. Ms. Sabitha Rani presented the paper at the 3rd International Conference on Robotics, Automation, and Artificial Intelligence (RAAI 2023) held at the prestigious National University of Singapore from December 14 to 16.
- 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
- 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.

- Anoop V. S., "ChatGPT, do my homework" – Will ChatGPT be an integrity threat to educational ethics? An analysis", 8th International Conference on Computing, Communication and Security (ICCCS'23), Springer CCIS.
- Dr. Sini V. Pillai participated in Katastasi: International Case Writing Competition as part of the Research Conference and was shortlisted to present a case study on Fire in the EV Market: Case on Electric Vehicle Explosions in India on February 24 at the Fortune Institute of International Business (FIIB), New Delhi, India.
- Mahendra K.S., " A COMPREHENSIVE STUDY ON THE IMPORTANCE OF INDUSTRY INSTITUTE INTERACTIONS" 2nd International Conference on Multidisciplinary Research Towards Sustainable Development organized by the Indian Academicians and Researchers Association.

- 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): Bhabesh Deka, Helal Mullah, and Sumit Datta "Joint Sparse Representation-based Single Image Super-resolution for Remote Sensing Applications.
- Tharion, J., Steephen, J. E., Joseph, J., & Ismavel, V. A. (2023). A gravity-driven apparatus for blood salvage and autotransfusion (Indian Patent Application No. 202341015667).

Software of the month

Pytorch

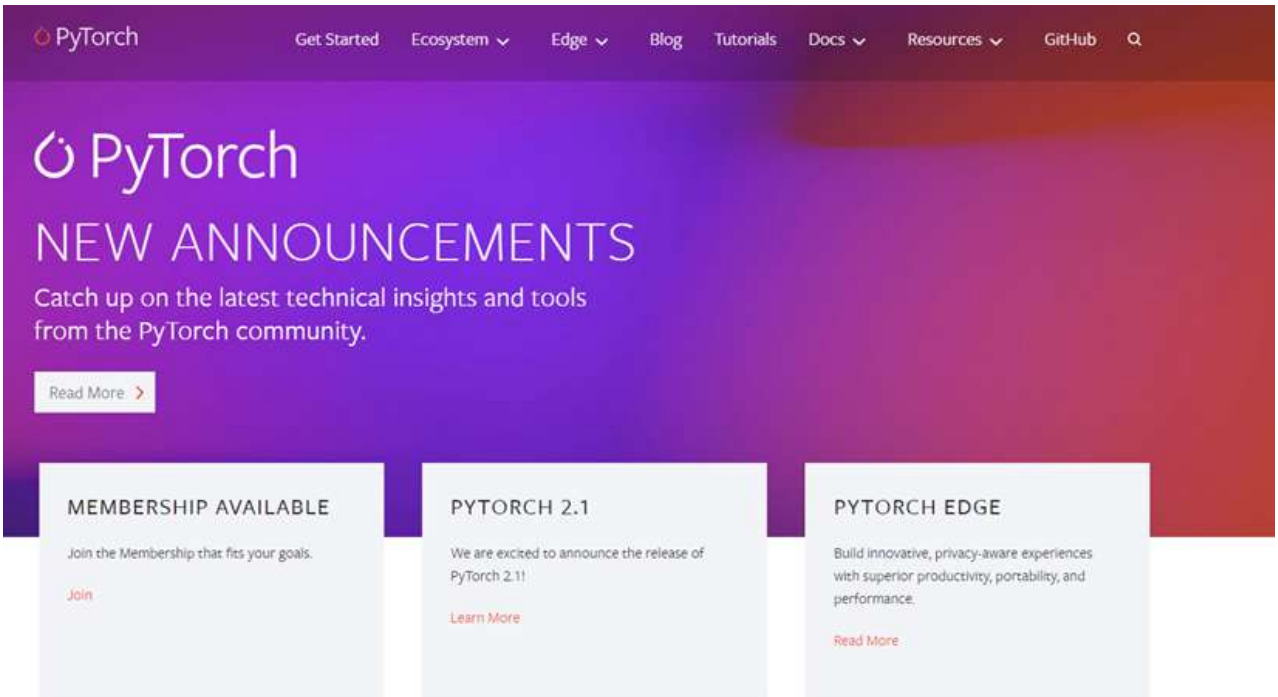
(https://pytorch.org/)

Pytorch is an open-source machine-learning framework based on the Torch library. It was developed by Facebook's AI Research lab (FAIR) and is used for applications such as computer vision and NLP.

It also gives a Python package specifically for advanced-level features like tensor computation and TorchScript. Various deep learning software is built on Pytorch like Tesla Autopilot, PyTorch Lightning, and Catalyst.

Features –

- Provides a rich ecosystem of tools and libraries.
- It is well supported on a majority of the cloud platforms.
- C++ interface is also available.
- Provides high-level features like Tensor Computing and Deep Neural Networks.
- Provides ease of use and flexibility in eager mode with the help of TorchScript.



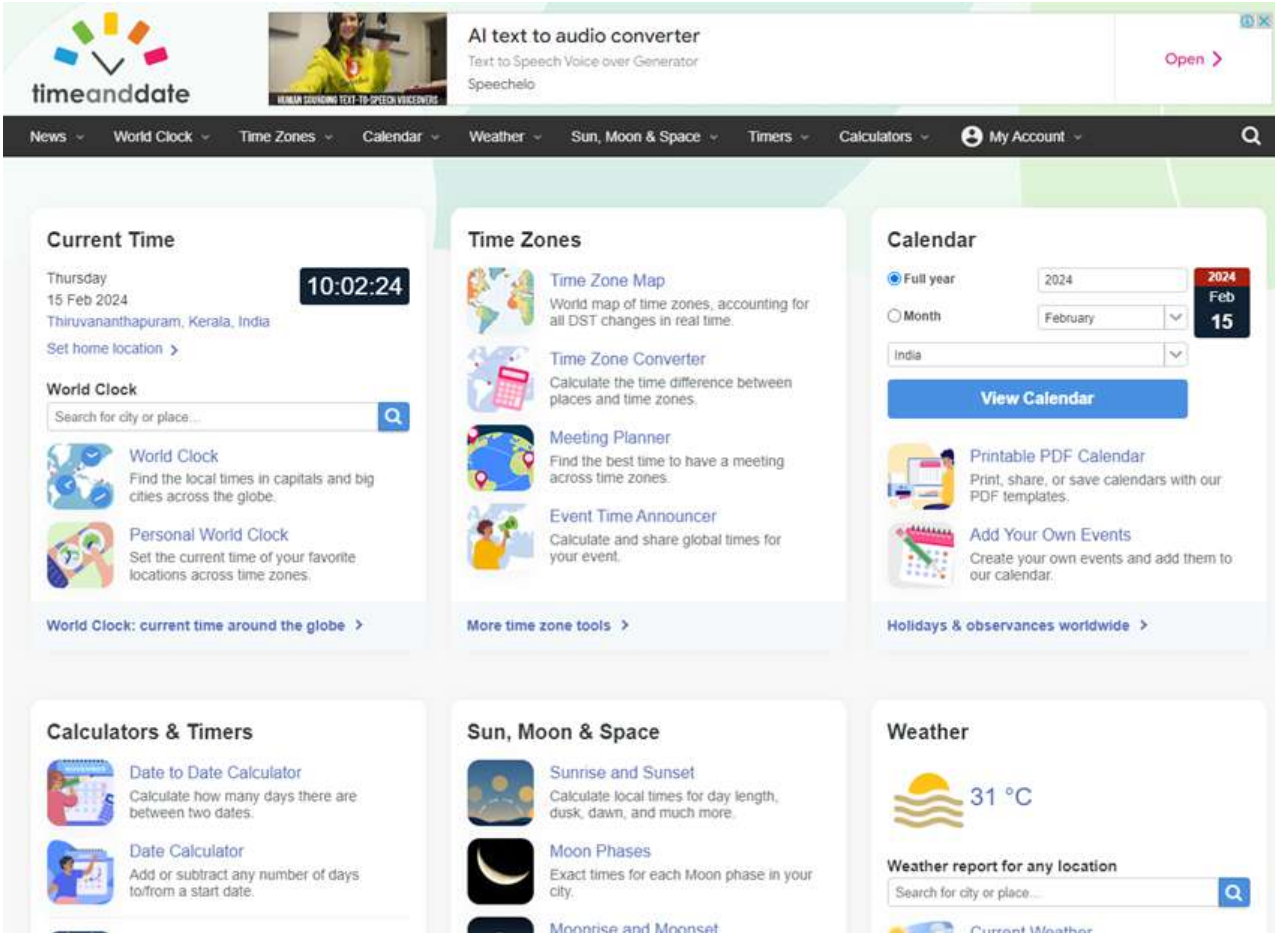
Website of the month

Time & Date

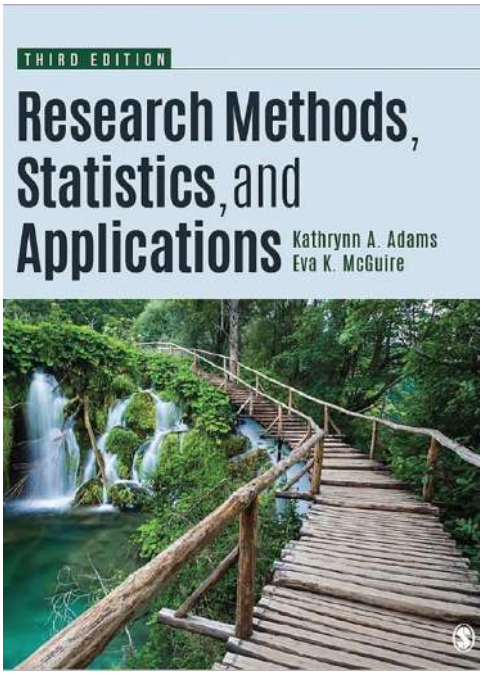
(www.timeanddate.com)

Time and Date offers many quick and easy tools to identify current times in other time zones. The website also features articles about various time/date topics such as daylight savings time and international holidays and festivals. It also provides diverse types of calendars such as “on this day in history” trivia, world-wide weather, phases of the moon, and sky maps.

The site provides tools to easily calculate dates of future natural events such as solar and lunar eclipses. Additional features include a countdown to future dates, a timer, a stopwatch, an alarm, a calendar creator, and a distance calculator.



Research Methods, Statistics, and Applications

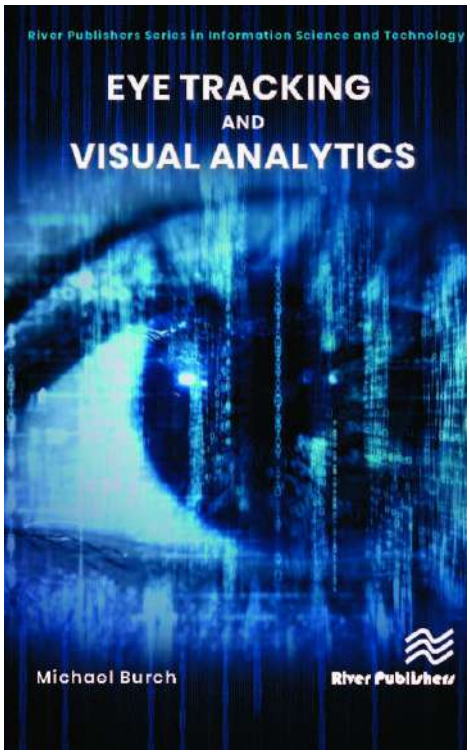


Research Methods, Statistics, and Applications by Kathrynn A. Adams and Eva K. McGuire is designed to give students the experience of being a researcher by combining the interrelated concepts of research methods and statistics to better explain how the research process incorporates both elements. Employing a conversational tone throughout, coupled with an emphasis on decision-making, this best-selling text will spark students' interest in conducting research and improve their ability to critically analyze research in their daily lives.The Third Edition includes a new chapter on measurement to better highlight its critical importance, updates for the 7th edition of the Publication Manual of the American Psychological Association, new examples related to social justice, additional sections on qualitative research methods, and more thorough integration of research ethics information and tips throughout each chapter.

Source: Sage

Adams, Kathrynn Ann -McGuire, Eva K (2023)
Research Methods, Statistics, and Applications. California, Sage Publications.

Eye Tracking and Visual Analytics

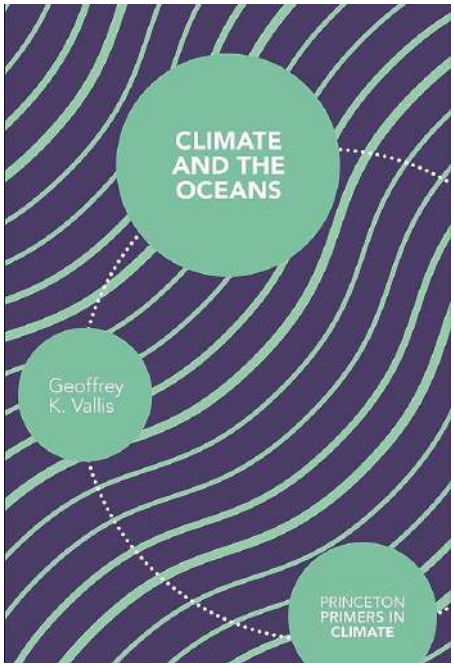


Visualization and visual analytics are powerful concepts for exploring data from various application domains. The endless number of possible parameters and the many ways to combine visual variables as well as algorithms and interaction techniques create lots of possibilities for building such techniques and tools.

This book describes aspects from the interdisciplinary field of visual analytics, but also discusses more general approaches from the field of visualization as well as algorithms and data handling. A major part of the book covers research on those aspects under the light and perspective of eye tracking, building synergy effects between both fields – eye tracking and visual analytics – in both directions, i.e. eye tracking applied to visual analytics and visual analytics applied to eye tracking data.

Source: Routledge
Burch,Michael(2021) Eye Tracking and Visual Analytics. Denmark, River Publishers

Climate and the Oceans



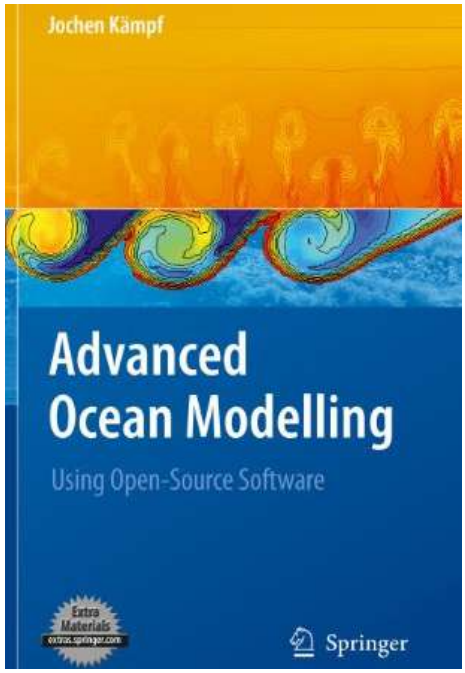
The oceans exert a vital moderating influence on the Earth's climate system. They provide inertia to the global climate, essentially acting as the pacemaker of climate variability and change, and they provide heat to high latitudes, keeping them habitable. Climate and the Oceans offers a short, self-contained introduction to the subject. This illustrated primer begins by briefly describing the world's climate system and ocean circulation and goes on to explain the important ways that the oceans influence climate. Topics covered include the oceans' effects on the seasons, heat transport between equator and pole, climate variability, and global warming. The book also features a glossary of terms, suggestions for further reading, and easy-to-follow mathematical treatments.Climate and the Oceans is the first place to turn to get the essential facts about this crucial aspect of the Earth's climate system.

Source: Princeton University Press

Vallis, Geoffrey K (2012) Climate and the Oceans. New jersey, Princeton University Press

Advanced Ocean Modelling: Using Open-Source Software

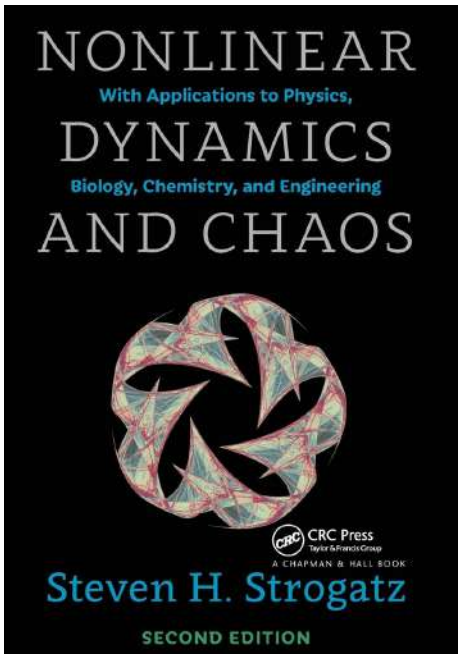
This book introduces the reader to advanced methods used in the computer-based modelling of fluid processes. This includes nonhydrostatic processes such as breaking internal waves and density-driven convection, but the model code is also used to simulate an El-Nio event! In this book, the art of hydrodynamic modelling is made available and transparent to a wider readership. An attractive byproduct of the book is that results are animations rather than still images. Model codes and animation scripts for all exercises are supplied .This book introduces the reader to advanced methods used in the computer-based modelling of fluid processes. In this book, the art of hydrodynamic modelling is made available and transparent to a wider readership. An attractive byproduct of the book is that results are animations rather than still images. Model codes and animation scripts for all exercises are supplied on a website. The reader can adopt model codes for own independent studies



Source: Amazon

Kämpf, Jochen(2010) Advanced Ocean Modelling: Using Open-Source Software. Newyork,Springer

NONLINEAR DYNAMICS AND CHAOS : with Applications to Physics, Biology, Chemistry, and Engineering

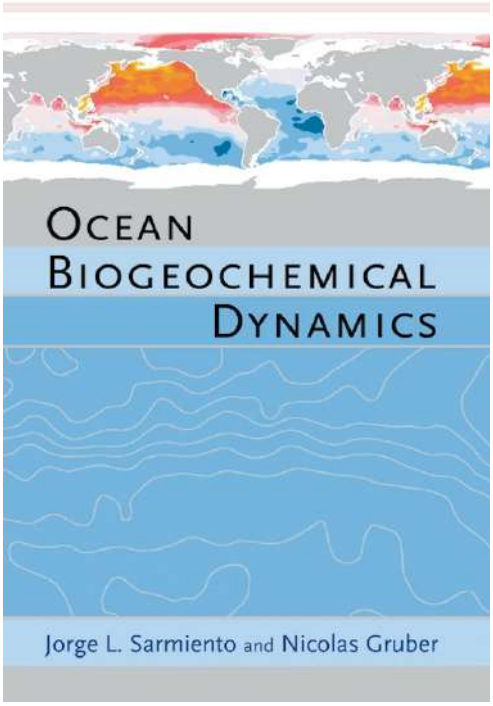


This textbook is aimed at newcomers to nonlinear dynamics and chaos, especially students taking a first course in the subject. The presentation stresses analytical methods, concrete examples, and geometric intuition. The theory is developed systematically, starting with first-order differential equations and their bifurcations, followed by phase plane analysis, limit cycles and their bifurcations, and culminating with the Lorenz equations, chaos, iterated maps, period doubling, renormalization, fractals, and strange attractors.A unique feature of the book is its emphasis on applications. These include mechanical vibrations, lasers, biological rhythms, superconducting circuits, insect outbreaks, chemical oscillators, genetic control systems, chaotic waterwheels, and even a technique for using chaos to send secret messages.

Source: Amazon

Strogatz, Steven H (2022) Nonlinear dynamics and chaos: with applications to physics, biology, chemistry and engineering. Boca RatonCRC Press,

Ocean Biogeochemical Dynamics



In Ocean Biogeochemical Dynamics, Jorge L. Sarmiento and Nicolas Gruber have succeeded in providing students and instructors with a remarkably succinct yet complete account of current ocean biogeochemistry. The authors are both experts in the field who have long records of distinguished contributions. The central objective of Ocean Biogeochemical Dynamics is to unravel the nature of biogeochemical and physical interactions that regulate concentrations of elements in the ocean. In meeting this objective, it is admirably successful. The book begins with a summary of the elemental composition of today's oceans. It relates the concentration of elements to the rates at which they are supplied by rivers. Concentrations and rates of supply are used to calculate the residence times for individual elements to accumulate in the ocean.

Source: American Institute of Physics

Sarmiento, Jorge L , Gruber, Nicolas (2006) Ocean Biogeochemical Dynamics. Newjersey, Princeton University Press

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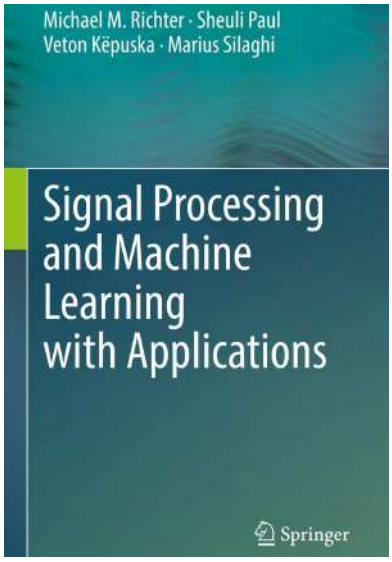

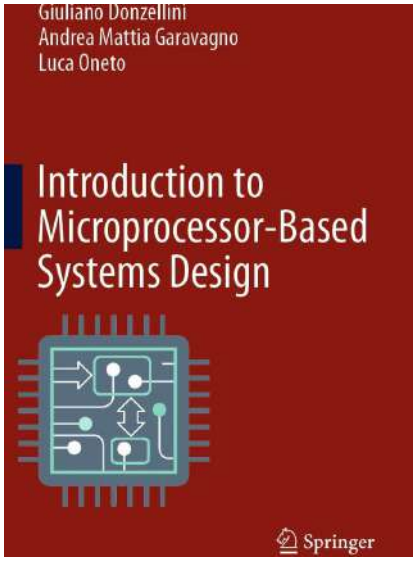

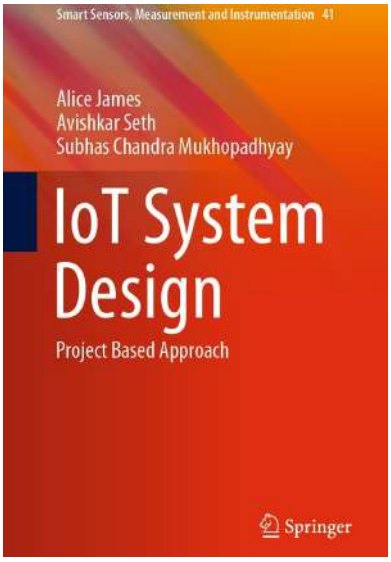

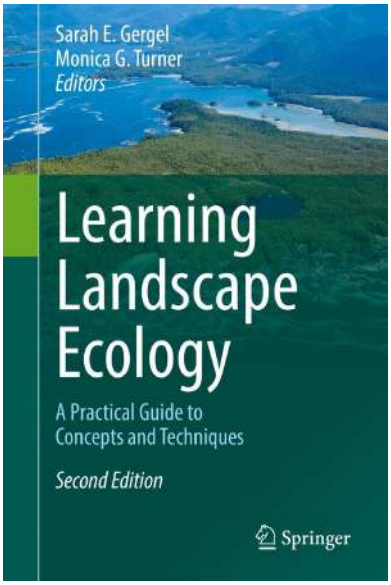

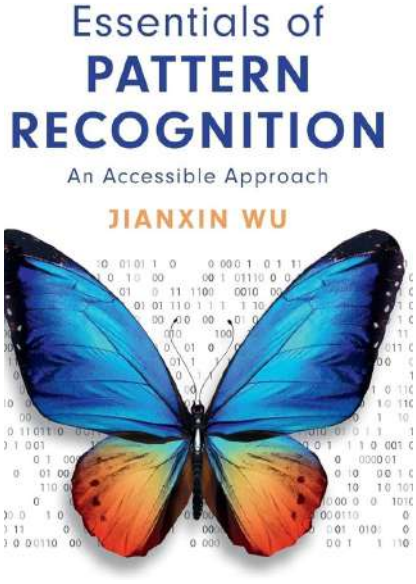

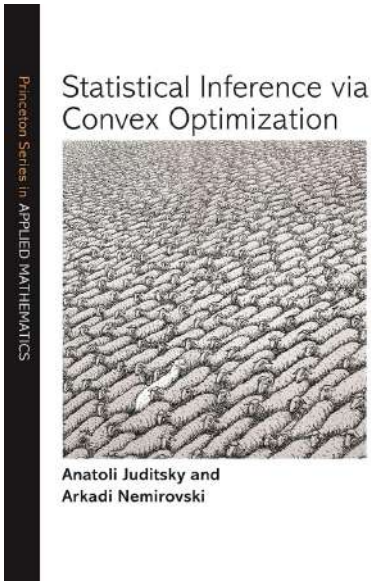

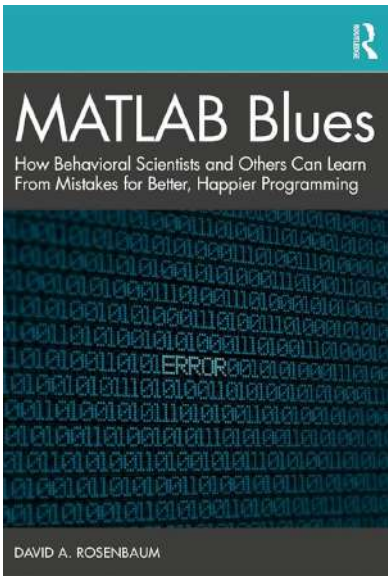

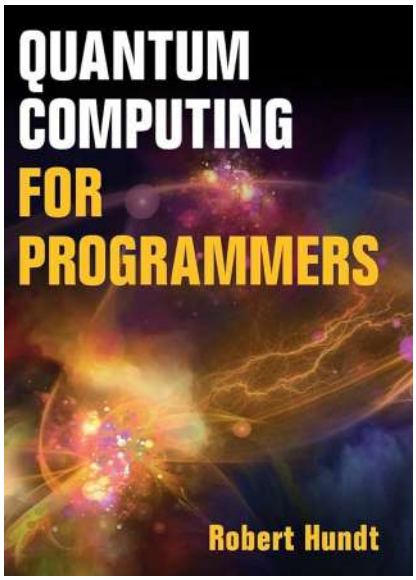

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