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DIGITAL UNIVERSITY KERALA

Kerala University of Digital Sciences, Innovation and Technology

NEWSLETTER

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Table of Contents

- AIFORALL-Certificate Distribution and Compendium of Projects Release
- Kerala Chief Minister Inaugurates State-of-the-Art Electronics and PCB Labs at Digital University Kerala, Lays Foundation Stone for International Hostel
- Partnership - Digital University Kerala ties up with UK-based semiconductor firm Arm
- Industry Institute Interaction at UST Infinity Lab

- SECURE YOUR CYBERSPACE
  Two Weeks Cyber Security Training
- Household Survey
- Visit To DUK - District Institute of Education and Training(Diet) Attingal
- Health Awareness Talk

- One Day Program on Digital Signature and Public Key Infrastructure
- Waterbody Management Meeting with Pothencode Panchayat Representatives
- Achievement
- Publications
- Knowledge Centre News
- Book Review of the month

"Technology is best when it brings people together."

- Matt Mullenweg
Social Media Entrepreneur

AIFORALL-Certificate Distribution and Compendium of Projects Release

Certificate distribution and Compendium of projects release ceremony for the second batch of Capacity Building in Artificial Intelligence & Data Analytics conducted by Digital University Kerala for the staff of Directorate of Economics & Statistics held at Directorate Conference Hall, Vikasbhavan, Thiruvananthapuram on 30-05-2023.

Link for the Image gallery: https://www.ecostat.kerala.gov.in/album/aiforall-30-may-2023

Kerala Chief Minister Inaugurates State-of-the-Art Electronics and PCB Labs at Digital University Kerala, Lays Foundation Stone for International Hostel

Three projects of Digital University Kerala were inaugurated by Kerala Chief Minister Shri Pinarayi Vijayan via online on May 19th. The state of the art Electronics Lab and the PCB lab, while foundation stone was laid for the International Hostel coming up in the DUK campus.

Partnership - Digital University Kerala ties up with UK-based semiconductor firm Arm

Digital University Kerala (DUK) has joined the Arm Academic Access (AAA) programme that enables academics to innovate, evaluate, design, and manufacture with commercially proven IP from UK-based global semiconductor company Arm, at no cost.

https://www.thehindubusinessline.com/info-tech/digital-university-kerala-ties-up-with-uk-based-semiconductor-firm-arm/article66910726.ece

Industry Institute Interaction at UST Infinity Lab

The students of MTech Computer Science, MTech Electronics, and MSc. Ecology from Digital University Kerala embarked on an exciting journey to the UST Campus in TechnoPark Phase II, Trivandrum on 30th May 2023 as part of an industry institute interaction followed by a visit to Infinity Lab. The purpose of the visit was to provide the students with insights into industry practices and to explore career opportunities. The visit was coordinated by Mr. Mahendra K.S and supported by the Chair of Placements, DUK.

A senior official from UST addressed the students and provided valuable insights into the industry, highlighting the skills and competencies required for a successful career. The insights and expertise shed light on the industry's current trends and the skills sought after by employers.

It was enlightening to understand the diverse opportunities available in the ever-evolving field of technology. Following the informative session, students visited the Infinity Lab, a hub of innovation and ground-breaking discoveries. The lab coordinators showcased various projects they had undertaken, introducing their ingenious ideas and initiatives, the lab's latest innovations, with a special focus on drone technology. They introduced cutting-edge surveillance drones equipped with advanced imaging capabilities, as well as delivery drones designed for the efficient transportation of goods. The visit to the UST Campus and the Infinity Lab was an incredibly enriching experience for all the students. The exposure to industry and the opportunity to witness ongoing innovative project inspired and motivated the students. The combination of theory and practical knowledge broadened horizons and provided valuable insights into the real-world applications of our respective fields.

The student representative and coordinators expressed their gratitude towards UST and its officials for organizing such an informative and interactive visit. Overall, the UST - Industry Institute Interaction and Lab Visit proved to be a successful endeavour, fostering a strong connection between academia and the industry, and equipping the students with the necessary skills and insights to thrive in the IT sector.

SECURE YOUR CYBERSPACE

Two Weeks Cyber Security Training

Kerala Security Audit and Assurance Center (KSAAC) hosted two-week training programme on cyber security for the second semester computer engineering students of Govt Womens Polytechnic College Kaimanam, Thiruvananthapuram during May 15-26, 2023 at DUK campus, Technopark Phase 4. A total of 59 students actively participated in the programme. It was organized under the CSR activities of the DUK.

The purpose of the programme was to provide necessary knowledge and skills to protect their information assets and secure their digital space. An online examination was conducted to assess their learning levels. The certificate of participation was awarded to all the students who actively participated in all the sessions and completed the assessment process

Household Survey

DUK has adopted five villages under the Unnat Bharat Abhiyan program. The Social Engagement Cell of DUK has been looking forward to collaborating with the elected representatives and participating in various development activities in these villages. As an initiation to all the development activities in these villages, the student volunteers have started a household survey using an app developed by DUK. There are more than twenty thousand households when we put together all the adopted villages. A household survey in Keezh Thonnakkal Village has been initiated. As a preparation before going into the households, student volunteers had a meeting and discussion with Pothencode panchayat members.

Visit To DUK - District Institute of Education and Training(Diet) Attingal

District Institute of Education and Training (DIET) Attingal visited Digital University campus on 18th May, 2023.Their purpose of visit was to learn and understand the various technologies and advancements that our university offers in the field of digital studies. A cyber security awareness session was also conducted along with the visit. Kerala Security Assurance and Audit Center(KSAAC) Team along with DUK hosted the event and around 33 participants were there.

Health Awareness Talk

To commemorate the International Day of Action for Women's Health celebrated worldwide on May 28, the Social Engagement Cell of DUK organized a medical awareness talk on women's health at 2 pm on the 25th of May, 2023. Dr. Shabin K. Siddique from KIMSHEALTH Cancer Centre handled the session. The students interacted with the doctor and clarified their queries about their health and well-being.

One Day Program on Digital Signature and Public Key Infrastructure

Digital University Kerala has successfully organized a one-day program on Digital Signature and Public Key Infrastructure on May 29, 2023, in association with C-DAC Bangalore and the Controller of Certifying Authorities (CCA), Ministry of Electronics and Information Technology, Govt of India. The program focused on the usage of Digital Signature, the technological processes involved and the legal implications. More than 100 officers working with public/private sectors attended the program.

Waterbody Management Meeting with Pothencode Panchayat Representatives

The Social Engagement Cell in DUK is taking initiatives to preserve, restore and manage the water bodies in the adopted villages. Keezthonnakkal village is seven kilometers from the university, coming under the Pothencode Panchayat. Ward members of Keezthonnkakal village visited the university campus and met the Social Engagement Cell team and a member of the faculty of Ecological Informatics at 3 pm on the 8th of May 2023. Pradeep Kumar K, Coordinator of the Social Engagement Cell, chaired the meeting. They discussed the need and scope of water management in their village. The panchayat representatives were keen and enthusiastic about working with the university, and they firmly believed that preserving and restoring water resources in their villages would solve the water crisis in their village.

Achievement

Under the guidance of Dr. Asharaf S (Dean (Development) and Professor), Dr. Sanil J and Ms. Vidya Chandran G (Research and Development Engineers) have developed an age-transformed image of Mr. Rahul, who tragically went missing at the tender age of seven from Alappuzha, Kerala. We are thankful to our vice chancellor, Dr. Saji Gopinath, for his support and contributions in the development of this project/article. The development of this age-transformation technique holds immense potential, not only for Mr. Rahul's case but also for similar missing person investigations. The developed, age-transformed image was featured in the Malayala Manorama Sunday supplement dated 14-May-2023.

Publications

- Sinnu Susan Thomas; G. Lamine; J. Palandri; M. Lakehal-ayat; P. Chakravarty; F. Wolf-Monheim; M. B. Blaschko, " Mitigating Bias in Bayesian Optimized Data while Designing MacPherson Suspension Architecture," in IEEE Transactions on Artificial Intelligence (accepted), May 2023.
- 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 https://doi.org/10.1007/978-981-19-7474-8_3
- Rahulraj P.V., Sanil J., Anoop V. S., Asharaf S, "Monetize the dual: A data analytic approach for native language and prequel movies popularity analysis", International Conference on Data Analytics and Insights (ICDAI '23), Lecture Notes in Network and Systems, Springer.
- Vamshi Kumar Gurram; Sanil J; Anoop V. S.; Asharaf S, "String kernel-based techniques for native language identification", Human-Centric Intelligent Systems, Springer

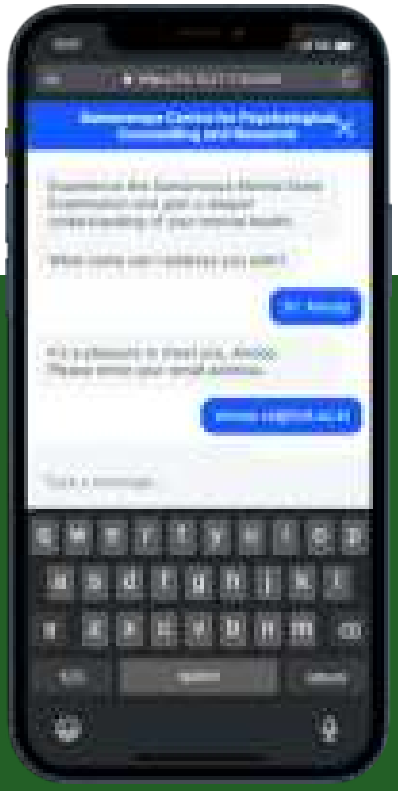
Invited Talk

Dr. Sini V. Pillai delivered an invited talk on the Design for Quality (DFQ) and Design for Reliability (DFR): A Design Thinking approach at VSSC, Thiruvananthapuram on 25 May 2023, as part of Quality Meet- 2023, jointly organized by National Institution for Quality and Reliability (NIQR) and ISRO Inertial Systems Unit.

Innovations

Dr. Anoop V. S. (Research Officer, SoDS) with Ms. Devika N. (Research Intern) has developed an entity recognition system for Malaria in collaboration with researchers from the Department of Biology, Purdue University Fort Wayne, Indiana, USA. Trained on a large collection of scientific literature on Malaria, this system can identify entities of clinical significance such as Disease, Medication, Organism, Chemical Substances, and Anatomical Substances.

A team of researchers led by Dr. Anoop V. S. (Research Officer, SoDS), comprising Ms. Meena P. N., Mr. Visakh P. R. (Research Interns, SoDS), Mr. Mohammed Fawaz, and Mr. Rafeek R. (Student Interns from II Semester M.Sc. Computer Science - Data Analytics) has developed a cognitive virtual agent that can conduct the Mental State Examination (MSE) for the psychological counselling. This was developed in collaboration with Samanwaya Centre for Psychological Counselling and Research, Thiruvananthapuram. This application can capture the mental state of an individual and present the key findings to the counsellor's dashboard for further analysis. It may significantly reduce the number of sittings required for conducting MSE.



Dr. Anoop V. S. (Research Officer, SoDS) with Ms. Ardra K. R. (Research Intern) has developed an entity recognition application for the Oral Medicine and Radiology specialty with research collaborators from the Department of Oral Medicine and Radiology, Malla Reddy Institute of Dental Sciences, Hyderabad, India. This application may help clinicians easily identify symptoms and medical conditions related to Oral Medicine from healthcare documents such as EHR and radiology reports.

Knowledge Centre News

Website of the month

DART-Europe

www.dart-europe.org

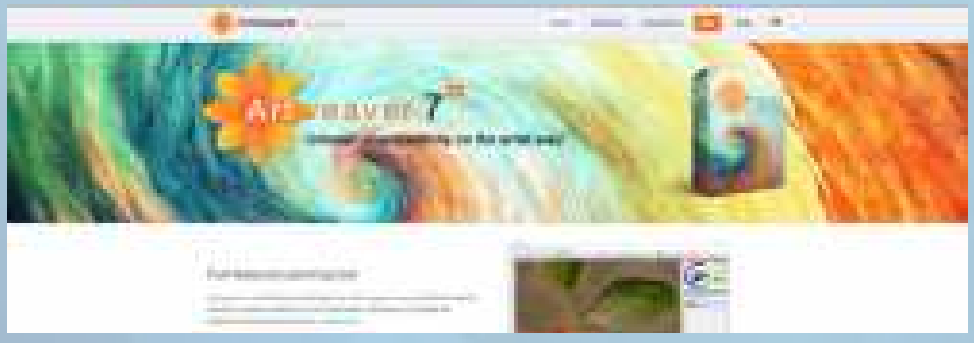
The DART-Europe E-theses Portal is a searchable database of electronic research theses held in European repositories. The theses listed are open access - publicly available, in full, without charge. The DART-Europe Portal does not store theses but aims to provide a link to at least one electronic copy of every thesis listed in our database. DART-Europe holds as much information as possible about each thesis, but this can vary, depending on the source of the information. As a minimum, details of the author, title and date of award are held in this database. Many providers supply additional searchable information, such as abstracts and keywords. To undertake a keyword search, click the 'Search' link on the Portal navigation bar, or use the search box in the left column. Enter keywords in the search box and click 'Search'. All fields in the DART-Europe database are searched.

Software of the month

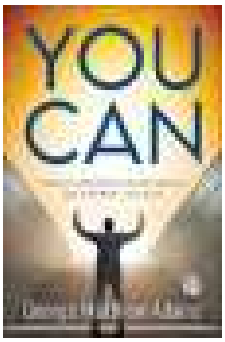
Artweaver

www.artweaver.de/en

Artweaver is a raster graphics editor for Windows developed by Boris Eyrich, mainly oriented to professional and amateur artists familiar with commercial programs like Adobe Photoshop and especially Corel Painter. Artweaver can simulate various classical effects (such as oil paints, acrylics, pastels, pencils, airbrushes, etc.) to create natural-looking artistic images. It also offers effect filters like sharpen, blur, emboss, and mosaic, as well as transparency and layer support in its AWD format. Artweaver supports most common file formats, such as BMP, GIF, JPEG, PCX, TGA, TIFF, PNG, PSD, although the BMP, GIF, JPEG, and PNG formats do not have layer support. The program also has standard image editing tools like gradient, crop, fill and selection tools (including lasso and magic wand), and pen tablet support.



Book Review of the Month



YOU CAN
By George Matthew Adams

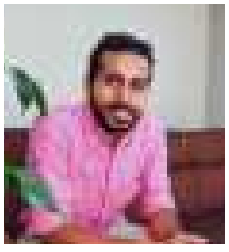
George Matthew Adams was an American newspaper columnist and founder of the George Matthew Adams Newspaper Service, which syndicated comic strips and columns to newspapers for five decades. His own writings were circulated widely to The Gettysburg Times and many other newspapers

One of the best empowering self-help manual ever written! A powerful guide filled with quotes imparting wisdom of a man whose teachings have inspired millions – Napoleon Hill & penned by bestselling author George Matthew Adams to promote personal growth and well-being.

The author shares insightful tips and strategies on how to overcome self-doubt and limiting beliefs, and provides actionable steps for setting and achieving realistic goals. What I appreciated most about this book is that it's not just theoretical - the author shares personal anecdotes and real-life examples of individuals who have achieved success by applying the principles outlined in the book.

The writing style is engaging and easy to follow, making it a great read for anyone regardless of their level of expertise in goal-setting or personal development. The book is also well-organized, with each chapter building on the previous one, making it easy to follow and implement the strategies.

Overall, I highly recommend "You Can" to anyone who wants to achieve their goals and unlock their full potential. It's a valuable resource for anyone looking for practical advice and inspiration to achieve success in their personal and professional lives.

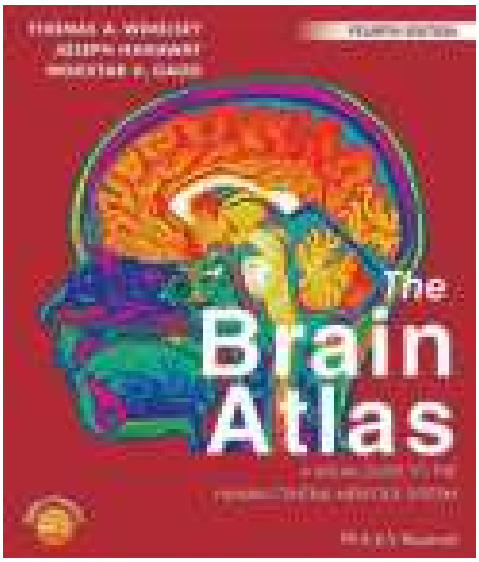


Harilal T P
Front Office Executive

"If my mind can conceive it, My heart can believe it, I know I can achieve it!"
—Jesse Jackson

New Additions to the Knowledge Centre Collection

The Brain Atlas

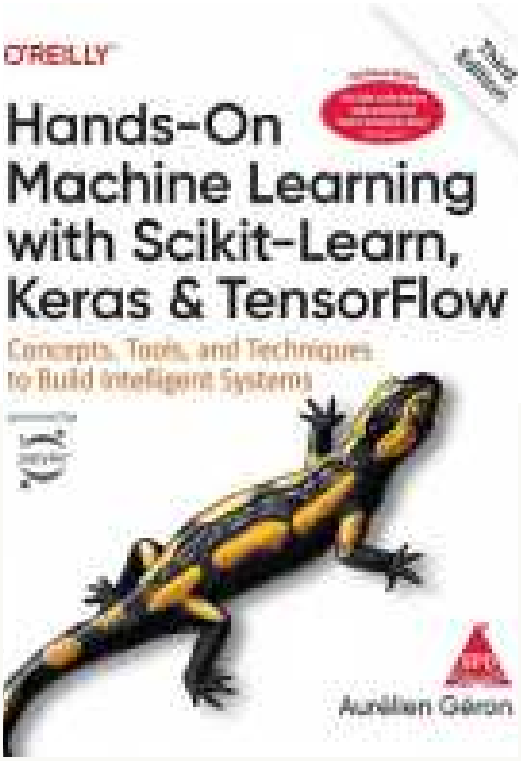


The Brain Atlas: A Visual Guide to the Human Central Nervous System integrates modern neuroscience with clinical practice and is now significantly revised and updated for a Fourth Edition. The book's five sections cover: Background Information, The Brain and Its Blood Vessels, Brain Slices, Histological Sections, and Pathways. These are depicted in over 350 high quality intricate figures making it the best available visual guide to human neuroanatomy.

Source :Publisher

Kleinberg, Samantha (2018) *Causality, Probability and Time* . New York, Cambridge University Press.

Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems



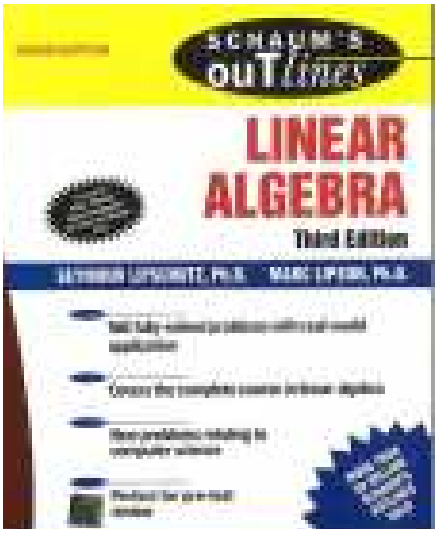
Through a series of recent breakthroughs, deep learning has boosted the entire field of machine learning. Now, even programmers who know close to nothing about this technology can use simple, efficient tools to implement programs capable of learning from data. This practical book shows you how.

By using concrete examples, minimal theory, and two production-ready Python frameworks–Scikit-Learn and TensorFlow–author Aurélien Géron helps you gain an intuitive understanding of the concepts and tools for building intelligent systems. You'll learn a range of techniques, starting with simple linear regression and progressing to deep neural networks. With exercises in each chapter to help you apply what you've learned, all you need is programming experience to get started.

- Explore the machine learning landscape, particularly neural nets
- Use Scikit-Learn to track an example machine-learning project end-to-end

Source :Publisher

Kleinberg, Samantha (2018) *Causality, Probability and Time* . New York, Cambridge University Press.

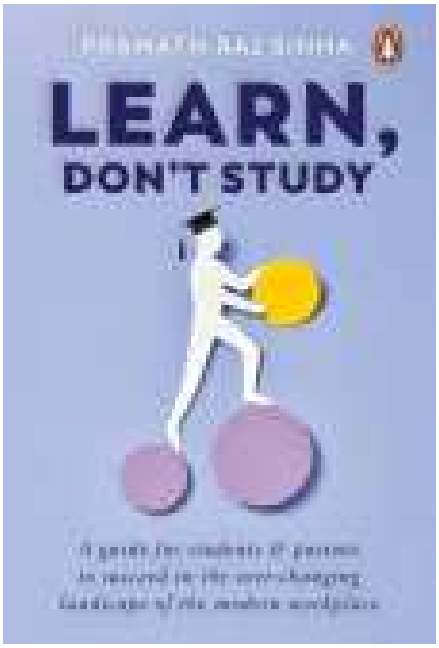


Linear Algebra

This third edition of the successful outline in linear algebra--which sold more than 400,000 copies in its past two editions--has been thoroughly updated to increase its applicability to the fields in which linear algebra is now essential: computer science, engineering, mathematics, physics, and quantitative analysis. Revised coverage includes new problems relevant to computer science and a revised chapter on linear equations.

Source :Amazon

Kleinberg, Samantha (2018) *Causality, Probability and Time* . New York, Cambridge University Press.



Learn Don't Study

This is the most common question one gets from young people (and their parents) who are transitioning from school to college education. They want to know which fields they should choose, which universities or programmes to attend, and which career track will give them the best chance to succeed.

The professional world isn't as straightforward as it once was, especially in India. The modern workplace is changing rapidly. While many from the previous generations chose a career in engineering, medicine or business and then stuck to it, most people entering college today will end up changing careers at least once, if not many times. And many of the careers that young people will have in the future don't even exist yet. Today's students and their parents need new guides and frameworks to make decisions about what educational opportunities to pursue and what to focus on as they embark on their professional journeys.

Source :Amazon

Kleinberg, Samantha (2018) *Causality, Probability and Time* . New York, Cambridge University Press.

Business Ethics

BUSINESS ETHICS, Eighth Edition guides you through the process of thinking deeply about important moral issues that frequently arise in business situations, and also helps you develop the reasoning and analytical skills to resolve those issues if and when you might face them. Combining insightful and accessible textbook chapters by the author with cases that highlight the real-world importance of key ethical concepts, this book provides a comprehensive, flexible, and pedagogically proven course of study that explores the intersections of commerce and ethics.

Source :Amazon

Kleinberg, Samantha (2018) *Causality, Probability and Time* . New York, Cambridge University Press.

Find more new titles..

- Applications in ecological engineering edited by Sven Erik Jorgensen
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- Earth observation for flood applications: Progress and perspectives By: Schumann, Guy J-P
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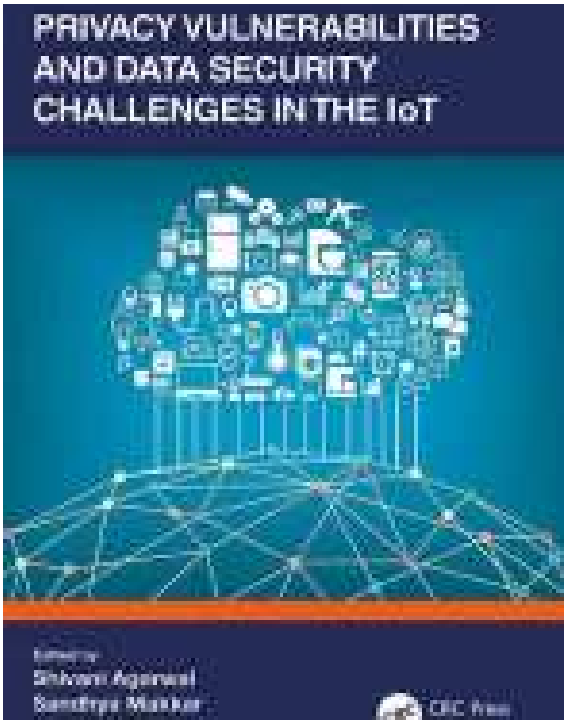

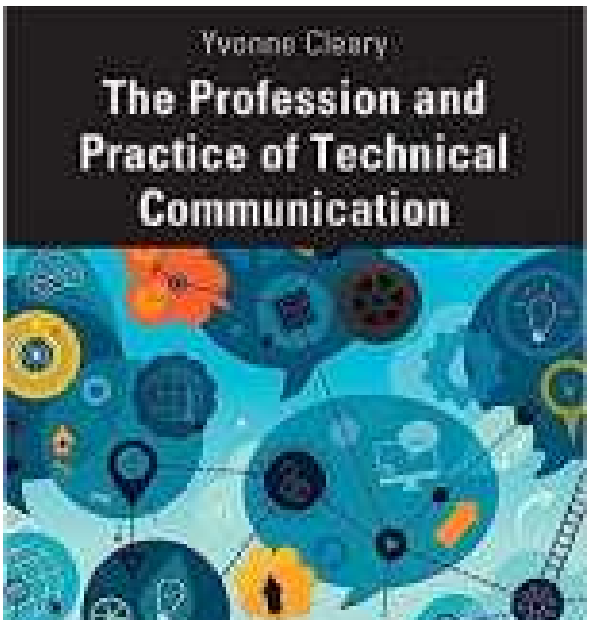

Check the OPAC of Knowledge Centre for new additions and their availability at

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G20
THE REAL
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SOCIAL WELFARE
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GOVERNANCE AND SERVICE EXCELLENCE

DUK ADMISSIONS 2023

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Formerly Indian Institute of Information Technology and Management - Kerala (IIITM - K)

Established by Government of Kerala

- Earn while you learn Hands-on Experience in real world Projects
- Strategic location at Technopark Phase I & Phase IV - one of the largest IT parks in the country
- State-of-the-art campus with advanced lab facilities
- Internship and placements in leading companies
- Centres of Excellence in cutting edge technologies
- Strong industry-academic linkages
- MSc / MTech admission through CUET-PG / DUAT
- Scholarships for top performing students

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MSc Computer Science
Data Analytics
Machine Intelligence
Cyber Security

MSc Ecology
Ecological Informatics

MBA
Business Analytics / Digital Governance / Digital Transformation / Finance / Human Resources / Information Security Management / Marketing / Operations / Systems / Technology Management

MSc Data Analytics
Computational Science / Math / Statistics

MTech (Flexible)
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PhD
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Computational Intelligence
Systems & Networks
Computational Neuroscience

www.duk.ac.in/admission

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