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Allianz Award for Best Digital Innovation for Social Impact

DIGITAL UNIVERSITY KERALA

Curating a responsible digital world

2024 NEWSLETTER

Kerala University of Digital Sciences, Innovation and Technology
(Digital University Kerala)
Thiruvananthapuram

+91-471-2788000

https://duk.ac.in

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Landmark MoU Between CCS, NIMHANS and CEBC, DUK to Advance Neuroscience and Cognitive Computing Research

A landmark MoU has been signed between the Centre for Consciousness Studies (CCS), Department of Neurophysiology, NIMHANS, Bengaluru and the Centre for Excellence in Brain Computing (CEBC), Digital University Kerala (DUK), to foster academic cooperation in research, teaching, training, publications, and innovative projects in 2023. This collaboration marks a significant step towards advancing education and research in areas of mutual interest. As a part of this initiative, NIMHANS has launched an MSc Neuroscience program in NIMHANS, with DUK actively contributing to specialized training in the transformative field of Cognitive Computing. The second batch of MSc course started at NIMHANS and the CEBC team conducted one paper on Computational Neuroscience in online mode in December 2024. Under the visionary leadership of Dr. Elizabeth Sherly, Head of CEBC, this partnership aims to redefine the landscape of cognitive sciences, creating a hub of knowledge and innovation for aspiring students and researchers.

Allianz Award

In a proud moment for Digital University Kerala, seven talented students were honored with the prestigious "Allianz Award for Best Digital Innovation for Social Impact" on 29th November 2024, at Allianz Technology. The award celebrates innovative solutions that harness digital technology to address critical societal challenges, marking a significant collaboration between Allianz and DUK. This initiative is part of Allianz's 20th-anniversary celebrations in India and aligns with DUK's mission to create a responsible digital world.

The award was presented by Dr. Barbara Karuth-Zelle, Member of the Board of Management, Allianz Group. The award was secured by team 'INSIGHTS', Shivani Bansal and Vicky Singh from M.Sc. in Computer Science with Specialization in Machine Intelligence, and team 'Threads', Annapurna Padmanabhan (M.Sc. Computer Science with Specialization in Data Analytics), Sudhi Suresh (M.Sc. Computer Science with Specialization in Cyber Security), Praveena. R (M.Sc. Data Analytics and Bio AI), Fathima Nazrin (M.Sc. Data Analytics and Computational Science), Fathima S Rahim (M.Sc. Computer Science with Specialization in Data Analytics).

The recognition stems from the students' work as part of DUK's postgraduate "Digital Access for Community Empowerment" (DACE) program. This program encourages students to address challenges faced by marginalized communities using innovative digital solutions.

The awarded projects include the "FabricSense" project, which enhances the quality inspection of handloom fabrics, boosting manufacturing efficiency and reducing eye strain for workers. Another winning initiative, "Autism Aid," is an AI-driven platform that advances early autism detection and provides personalized care.

'SEVANA 2024' - Celebrating Volunteerism

In celebration of volunteerism, the Social Engagement Centre, DUK, organized 'SEVANA 2024' on 4th December 2024. This meaningful event provided an excellent opportunity to connect with others, learn more about volunteerism, and explore new ways to make a positive impact. Dr. Satheesh Kumar K. G., Chair of SoDiHLA, inaugurated the session.

The program featured an enlightening session by Mr.Gautham Raveendran, Founder and CEO of Volunteer for India. He shared valuable insights into the power of collective action and how every individual can contribute to creating a better tomorrow.

Among the many highlights of the program, Mr.Sai Shankar G Nair was honored with the prestigious Best Volunteer Award. This accolade is a testament to Sai Shankar's tireless and selfless contributions as a Core Member of the Social Engagement Centre (SEC). His unwavering commitment, innovative ideas, and leadership have been instrumental in driving several impactful initiatives.

The program also included a heartfelt memento-giving ceremony to honor the SEC leadership team of the 2023-2025 batch for their dedication and contributions.
As part of this event, SEC also organized various competitions that brought together participants from diverse disciplines.

Winners of the games at 'SEVANA 2024':

- **Treasure Hunt:** Navaras P (M.Sc. in Computer Science with Specialization in Machine Intelligence), Dev Jacobs Peter (M.Sc. in Ecology with Specialization in Ecological Informatics), Namitha Raveendran (M.Sc. in Computer Science with Specialization in Cyber Security).
- **Reel Making Competition:** Anjitha Sivakumar (M.Sc. in Computer Science with Specialization in Machine Intelligence), Suhaib T (M.Sc. in Computer Science with Specialization in Data Analytics), Dev Jacobs Peter (M.Sc. in Ecology with Specialization in Ecological Informatics), Milan Prasad (M.Sc. in Data Analytics and Computational Science).

These competitions showcased the creativity, teamwork, and innovative spirit of the participants, making ‘SEVANA 2024’ a truly memorable event.


INTERNATIONAL
VOLUNTEER DAY
Gratitude note for Teachers/ Staff
Feed a Stray
Gift a Smile

Suhaib T

MSc. in Computer Science with Specialization in Data Analytics

Milan Prasad

MSc. Data Analytics and Computational Science

Anjitha Sivakumar

MSc. in Computer Science with Specialization in Machine Intelligence

Dev Jacobs Peter C

MSc. Ecology with Specialization in Ecological Informatics

DIGITAL UNIVERSITY KERALA

CONGRATULATIONS !

TREASURE HUNT WINNERS

Navaras P
MSc. in Computer Science with Specialization in Machine Intelligence

Dev Jacobs Peter C
MSc. Ecology with Specialization in Ecological Informatics

Namitha Raveendran
MSc. in Computer Science with Specialization in Cyber Security

Workshop on Internet of Things (IoT) for School Students

The Institution's Innovation Council and Innovation Club of DUK is jointly organizing a series of workshops for school students on Internet of Things (IoT). The first one was organised on 11th December 2024 for the students from KV Pallipuram.

International IEEE Conferences

The research paper titled "EEG Based Imagined Speech Recognition Using Multi-Feature Extraction with DNN-CapsNet" authored by Ms. Sabitha Rani and Dr. Elizabeth Sherly, has been accepted for presentation at the IEEE conference MoSICOM 2024, Dubai. Ms. Sabitha Rani presented the paper at the “3rd International Conference on Modelling, Simulation & Intelligent Computing (MoSICom 2024) held at the prestigious BITS Pilani, Dubai International Academic City, Dubai from December 09 to 11, 2024.

The research paper titled "Braille tactile representations in the brain: an EEG investigation” authored by Ms. Raji Gopinathan, Ms. Sabitha Rani, Mr. Harishankar and Dr. Elizabeth Sherly, has been accepted for presentation at the IEEE Conference on Modelling, Simulation & Intelligent Computing (MoSICOM 2024). Ms. Raji Gopinathan presented the paper at the conference held at BITS, Dubai campus, International Academic City, Dubai, in December 2024.

The research paper titled " Deciphering Braille: EEG based Deep learning for character recognition" authored by Ms. Sabitha Rani, Ms Raji Gopinathan N, Harishankar M and Dr. Elizabeth Sherly, has been accepted for presentation at the IEEE conference "iCon-BCIHT". Ms. Sabitha Rani presented the paper at the "2024 International Conference on Brain Computer Interface & Healthcare Technologies (iCon-BCIHT) jointly Organised by C-DAC Thiruvananthapuram, Govt. Medical College Thiruvananthapuram, SCTIMST Thiruvananthapuram, IIST Thiruvananthapuram, IEEE EMBS Kerala chapter & IEEE Kerala Section held at Hotel Dimora, Thiruvananthapuram, Kerala, India from December 19 to 20,2024.

Conference Paper

- Lukmanul Hakeem M, Aromal CJ, Sushant Kumar and Sumit Datta, "Continual Learning for Video Action Recognition using Parameter Allocation", 21st IEEE India Council International Conference (INDICON)-2024, Kharagpur, India, Dec., 2024.
- Remya Krishnan T., Manob J. Saikia and Sumit Datta, "ECG Synthesis from Reduced Lead Set using Neural Networks for Wearable Healthcare", 21stIEEE India Council International Conference (INDICON)-2024, Kharagpur, India, Dec., 2024.
- Aromal CJ, and Sumit Datta, "FISTA-NET: Compressed Sensing MRI Reconstruction using Unrolled Iterative Networks", 21st IEEE India Council International Conference (INDICON)-2024, Kharagpur, India, Dec., 2024.
- Debangshu Banik, Aromal CJ, and Sumit Datta, "Early Detection of Age-related Macular Degeneration using Image Super-Resolution with Cycle-GAN", 21stIEEE India Council International Conference (INDICON)-2024, Kharagpur, India, Dec., 2024.

Publication

Roopak Surendran, Tony Thomas, Md.Meraj Uddin, Optimizing malware detection with redundant sample filtering for efficient retraining, Journal of Cyber Security Technology, Taylor & Francis,1–22, Dec 2024, https://doi.org/10.1080/23742917.2024.2438696

Research Paper Accepted

Balasubramaniam S et al., "Medical Image Fusion using Unified Image Fusion Convolutional Neural Network", International Journal of Intelligent Systems, Wiley ,2025 (Accepted for Publication).

Tutorial Talk

Tutorial presented on Causal Inference and Explainable Models for Medical Imaging at Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP 2024), Bangalore, India, 13-15 Dec 2024.

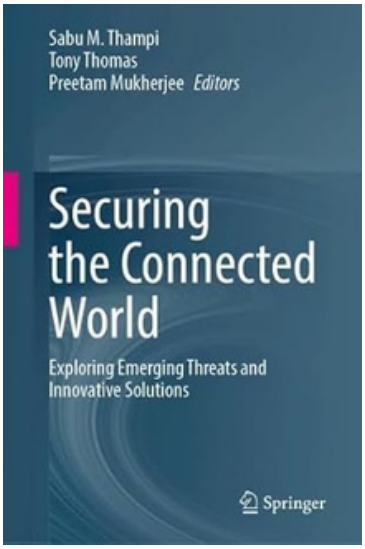
Invited Talk

Invited talk by Dr. I. Suresh in the International Indian Statistical Association Conference 2024 (IISA2024) held at Cochin University of Science and Technology on 28 December 2024. Title: Climatologist's perspective of emergence of climate change signals.

Books Published

Securing the Connected World: Exploring Emerging Threats and Innovative Solutions

By Sabu Thampi, Tony Thomas, Preetam Mukherjee (Eds.),Springer, May 2025, ISBN 3031828259, 9783031828256.

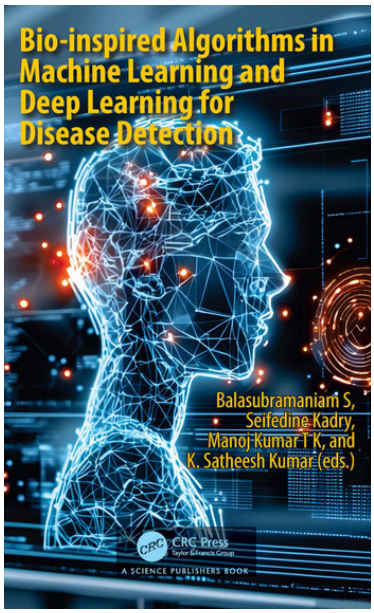


Securing the Connected World: Exploring Emerging Threats and Innovative Solutions offers a detailed examination of the growing challenges and cutting-edge solutions in the realms of IoT (Internet of Things) and IoD (Internet of Drones). The book is structured to provide a balanced blend of foundational knowledge and advanced research insights, making it an essential resource for researchers, industry professionals, and students. Covering both established concepts and the latest advancements, it addresses the pressing need for robust security frameworks in today's interconnected digital ecosystems.
The first section of the book lays a strong groundwork for understanding IoT security, exploring areas such as attack modelling, intrusion detection, fraud prevention, and secure communication protocols. It also discusses advanced defenses for 5G-powered IoT networks and the integration of Software-Defined Networking (SDN). The second section focuses on IoD, examining critical topics like authentication, trust management, access control, and ethical considerations in drone-based surveillance. By combining theoretical perspectives with practical applications, this book provides a holistic approach to securing the connected world.

Bio-inspired Algorithms in Machine Learning and Deep Learning for Disease Detection

By Balasubramaniam, S., SeifedineKadry, Manoj Kumar T K, Satheesh Kumar K (Eds). (2025),CRC Press, Pages:262, eBook ISBN: 9781003538158.

https://doi.org/10.1201/9781003538158



Currently, computational intelligence approaches are utilised in various science and engineering applications to analyse information, make decisions, and achieve optimisation goals. Over the past few decades, various techniques and algorithms have been created in disciplines such as genetic algorithms, artificial neural networks, evolutionary algorithms, and fuzzy algorithms. In the coming years, intelligent optimisation algorithms are anticipated to become more efficient in addressing various issues in engineering, scientific, medical, space, and artificial satellite fields, particularly in early disease diagnosis. A metaheuristic in computer science is designed to discover optimisation algorithms capable of solving intricate issues. Metaheuristics are optimisation algorithms that mimic biological behaviours of animals or birds and are utilised to discover the best solution for a certain problem. A meta-heuristic is an advanced approach used by heuristics to tackle intricate optimisation problems. A metaheuristic in mathematical programming is a method that seeks a solution to an optimisation problem. Metaheuristics utilise a heuristic function to assist in the search process. Heuristic search can be categorised as blind search or informed search. Meta-heuristic optimisation algorithms are gaining popularity in various applications due to their simplicity, independence from data trends, ability to find optimal solutions, and versatility across different fields.

Secured a PhD position in Computational Neuroscience at the University of Regensburg, Germany.

Nuha Fathima, a BS-MS Physics major from IISER Thiruvananthapuram, successfully completed a four-month internship at the CAN Lab, School of Digital Sciences, specializing in Computational Neuroscience. Following this, she secured a PhD position in Computational Neuroscience at the University of Regensburg, Germany.

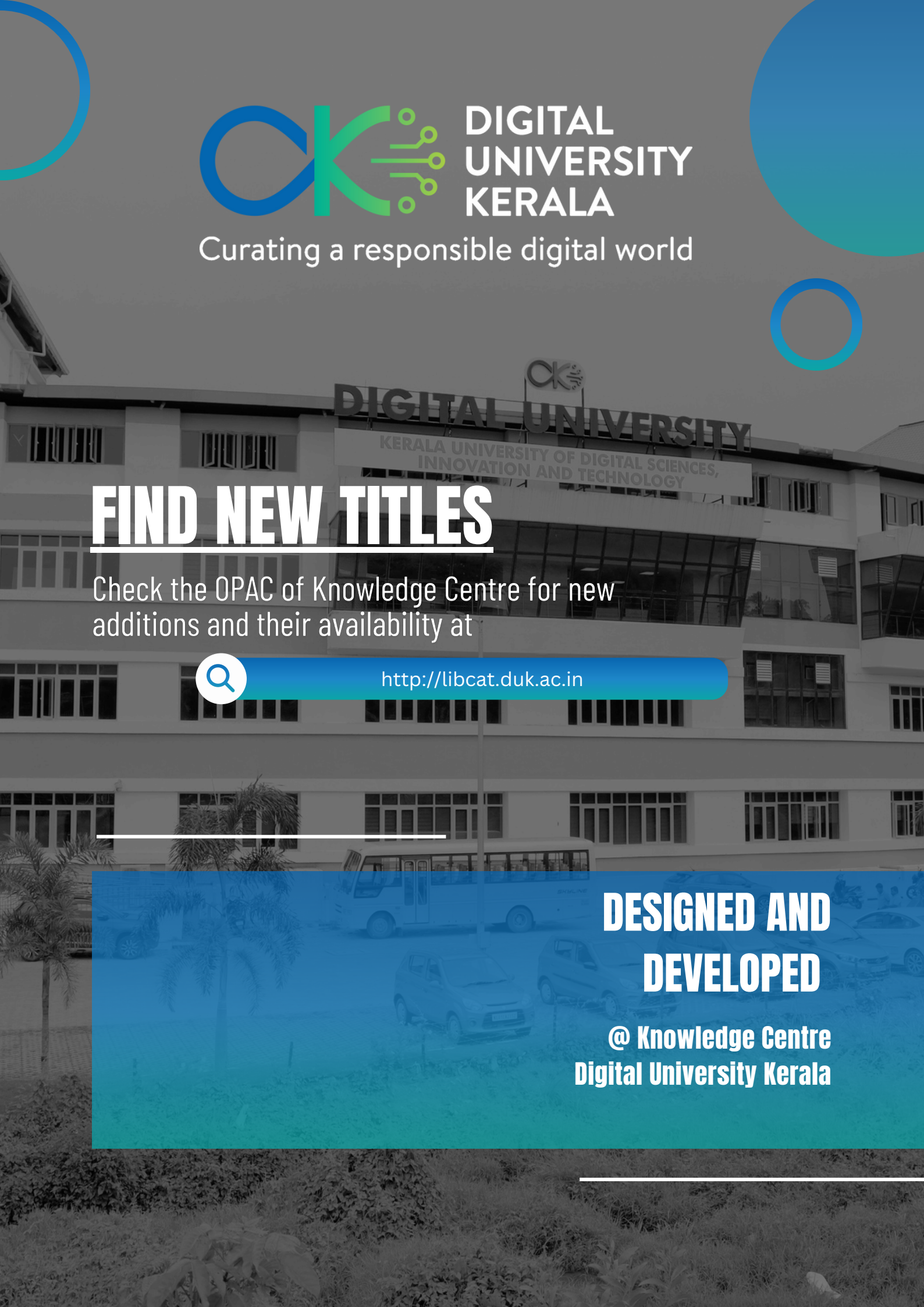
Adhith M K, MSc Ecology student, has been awarded with Shillim Fellowship for Groundbreaking Ecological Research

Adhith M K has been awarded with Shillim Fellowship for Groundbreaking Ecological ResearchAdhith M K, a Master's student in Ecology specializing in Ecological Informatics at Digital University Kerala, has been awarded the prestigious Shillim Fellowship. This distinguished fellowship, valued at ₹3,00,000, recognizes Adhith's outstanding research potential in the field of ecology.

Adhith's research focuses on developing an automated acoustic monitoring system to analyze the distribution patterns of selected species. By integrating advanced technologies like machine learning and GIS, the study aims to acoustically monitor wildlife and map their spatial distribution. These insights will play a crucial role in enhancing conservation efforts and managing biodiversity in critical ecosystems.

The fellowship will enable Adhith to conduct extensive field research, develop the monitoring system, and perform comprehensive data analysis, paving the way for significant advancements in ecological monitoring and conservation science.

DUK Christmas Celebration



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