

KVIT RAIPUR

The official newsletter of Krishna Vikash HEI Raipur



VISION

TO CONTRIBUTE TO THE PROGRESS OF THE STATE, NATION AND HUMANITY AS A WHOLE PROVIDING EDUCATION THROUGH RESEARCH AND INNOVATION TO THE FUTURE CITIZENS AND CREATING A NEW ORDER OF PEACE AND PROSPERITY.

MISSION

TO PAVE A PATH FOR THE STUDENTS TO TREAD CONFIDENTLY, GAINING KNOWLEDGE AND SKILLS THROUGH THAT THEY MAY USE TO TAKE THE NATION TO THE PINNACLES OF SUCCESS.

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MEET THE TEAM

EDITORIAL DESK



Dear Readers,

At Krishna's Vikash Institute of Technology, we offer a transformative journey where academic excellence meets holistic development. Our commitment to revolutionizing engineering education is evident in our students' impressive academic performance and their engagement in various competitions, from coding to sports and robotics. Our esteemed faculty provides rigorous coursework and innovative research opportunities, preparing students for the challenges of a rapidly evolving technological landscape. Their achievements reflect not only technical skills but also the ability to apply classroom knowledge to real-world scenarios.

As we celebrate these accomplishments, we extend our gratitude to everyone who contributes to this journey. Together, we pursue engineering excellence for a brighter future.

WARM REGARDS,

MRS. PALLVEE BHAIRAM,

ASSISTANT PROFESSOR OF CSE DEPARTMENT ,

KRISHNA'S VIKASH INSTITUTE OF TECHNOLOGY, RAIPUR



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HAPPY DIWALI



Dear Teaching and Non-Teaching Staff Members, and My Dear Students,
As we celebrate the joyous festival of Deepawali, let us embrace the light of wisdom, kindness, and unity that this occasion brings. Deepawali reminds us that no matter how deep the darkness, the smallest light can dispel it. In the same way, each of us, with dedication, passion, and hard work, has the power to illuminate the lives of others and our community. let us work in harmony, supporting one another to achieve new heights of success.

Wishing you all a Very Happy and Prosperous Deepawali. May the festival of lights fill your lives with joy, peace, and prosperity.

Dr. D. N. Dewangan
Principal , KVIT



SWACHHATA HI SEVA 2024

KVIT, Raipur observed Swachhata Hi Seva (SHS) 2024 from September 14 to October 1. The program, themed "Swabhav Swachchhata-Sanskar Swachchhata," culminated on October 1 with a pledge ceremony, where students, faculty members, and staff took a collective oath to uphold cleanliness and civic responsibility. Throughout the 18-day initiative, participants engaged in diverse activities such as Nukkad Natak, slogan and essay writing competitions, a cleanliness rally, rangoli, and "Best Out of Waste" drive. These events fostered teamwork, creativity, and environmental awareness, reinforcing KVIT's commitment to community service and sustainable living.



MUSEUM VISIT

KVIT 1st semester students visited Mahant Ghasidas Museum and Garkalewa on 3rd October 2024 , exploring Chhattisgarh's rich cultural heritage and historical significance. At the museum, they discovered ancient temple architecture, traditional clothing, and rare coins. The trip culminated with a delightful traditional Chhattisgarhi cuisine experience, featuring local delicacies like Chila, Farra, and Dubki at Garhkalwa. Students praised the visit, citing a deeper understanding of Chhattisgarh's culture and history, and the traditional food as a highlight.



1st EDITION GREEN SUMMIT

KVIT 1st semester students participated in the 1st Edition Green Summit at Pt. Dindayal Upadhyay Auditorium on 3rd October 2024. Approximately 24 first-year students registered for the program, engaging with experts and enthusiasts on sustainable practices and environmental conservation. The summit provided valuable insights into climate change, sustainable solutions, and collaborative initiatives, inspiring students to contribute to a greener future. Students praised the event, citing newfound enthusiasm for environmental conservation.



ECS ACTIVITY

The Infinity Coder Club of KVIT Raipur organized an event titled "LOGIFEST" with a focus on enhancing logical thinking, technological awareness, and decision-making skills. The event brought together students and tech enthusiasts to participate in fun and knowledge-driven activities aimed at fostering innovation and learning.



The "Rangoli Competition" under the theme swachh Bharat Abhiyan (clean India) took place on 01 october 2024 at KVIT building. This is the way to clean the country's street, road and infrastructure



ENTREPRENEURSHIP AWARENESS DRIVE

On October 9, 2024, an inspiring Entrepreneurship Awareness Drive took place at Krishna's Vikash Institute of Technology in Raipur, organized in collaboration with the Entrepreneurship Cell of IIT Kharagpur. This event was designed to engage young minds and encourage them to explore entrepreneurial opportunities. Esteemed speakers, including R. Dinesh, Executive Chairman of TVS Supply Chain Solutions, and Parmindar Sahni, Co-founder of Vsnapu, shared their valuable insights and experiences with the students. They also conducted one-on-one sessions to address individual queries, fostering an interactive environment for learning and growth. Dr. Jawahar Suri Shetty, Executive Director, facilitated both speakers with a token of appreciation in the form of a book and expressed gratitude to the audience for their participation. The event was well-attended by principals and faculty members, who also benefited from the discussions, creating a vibrant atmosphere of knowledge exchange and motivation for future entrepreneurs.



GARBA & FUNFAIR

KVIT Raipur celebrated a vibrant Garba and funfair on 10/10/24, marking the festive spirit of Navratri. The event brought together students, faculty, and staff from KVIT, KDR CST, and RCPSR for music, dance, and merriment. With energetic Garba performances, traditional Dandiya Raas and delicious food stalls, the celebration was a resounding success. The institute's campus was transformed into a colorful and lively hub, reflecting the joy and unity of the festive season



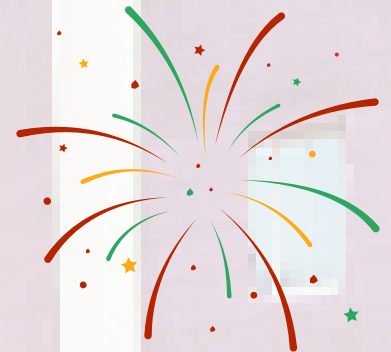
INUGRATION OF CRICKET GROUND

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IPR WORKSHOP

The Central Research and Innovation Cell at Krishna Vikash, Raipur, recently organized a two-day training (16-17 October) workshop aimed at enhancing knowledge on patent and copyright drafting. The event saw enthusiastic participation from students and faculty members, all keen to deepen their understanding of intellectual property rights. This initiative was designed to equip participants with the tools to protect their innovations and creative works through proper legal frameworks. The program featured expert speakers Mr. Dhruv Brahmbhatt, Managing Director, and Ms. Pooja Menon, COO, from Mycrave Consultancy, Vadodara. They shared valuable insights into the intricacies of patent and copyright drafting, emphasizing their practical importance in today's innovation-driven world. Their sessions provided a comprehensive overview of intellectual property laws, helping attendees grasp the importance of safeguarding their creative and intellectual contributions.



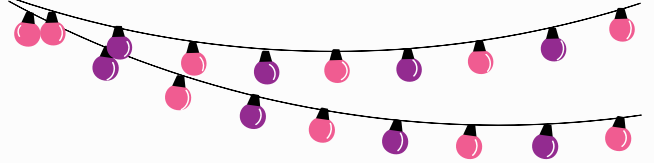
CSVTU INTER COLLEGE VOLLEY BALL COMPETITION

The “Inter College Volleyball Tournament 2024-25” (Girls & Boys) took place on 19/10/2024 at College Campus KVIT, Raipur ,This is an excellent chance to display your Sports skills. This event was organized by KVIT, Raipur under the CSVTU Sports activities .The office bearers were enthusiastic and very keen to manage the event. They put a lot of effort to pool in talented players from various streams of college l of Management.



CSVТУ SPORTS EVENT

KVIT Students enthusiastically participated in the Chhattisgarh Swami Vivekananda Technical University (CSVТУ) intercollege kabaddi and chess competition. The KVIT kabaddi team displayed exceptional teamwork and agility, showcasing their skills against top teams from various colleges affiliated with CSVТУ. Meanwhile, the chess players from KVIT demonstrated strategic thinking and mental prowess, competing against talented opponents in intense matches. Through their participation, KVIT students showcased their sporting spirit, discipline, and dedication, making their institution proud. The experience provided valuable exposure, fostering camaraderie and teamwork among participants.



RESEARCH & INNOVATION

Krishna's
Vikash
Group of Institutions

Congratulations



Dr. Ritesh Kumar Dewangan

Professor, Mechanical Engineering

Academic Coordinator

Rungta College of Engineering & Technology, Raipur

For publication of Research Paper in

Journal of Failure Analysis and Prevention

Topic : "Fault Diagnosis of Rolling Element Bearing with Operationally Developed Defects Using Various Convolutional Neural Networks"

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ORIGINAL RESEARCH ARTICLE

Fault Diagnosis of Rolling Element Bearing with Operationally Developed Defects Using Various Convolutional Neural Networks

Devendra Sahu · Ritesh Kumar Dewangan · Surendra Pal Singh Matharu

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Abstract Rolling element bearings are critical building blocks of any rotating machine. Achieving effective and precise fault diagnosis through various neural network models plays a pivotal role in ensuring the accuracy of rolling element bearing fault diagnosis. This research paper represented comparative study of artificial neural network (ANN), 1-D CNN, multi-input 1-D CNN, and 2-D CNN in fault diagnosis of rolling element bearings. The experiment was conducted on a roller bearing test rig over 2000 hours at constant speed of 800 rpm along with radial load of 1.5 kN till the development of naturally occurring operational surface defects on the bearing components. The proposed neural network architecture utilized multiple parallel convolutional layers to effectively extract rich and complementary fault features. The model was configured by implementing the categorical crossentropy loss function and Adam optimizer. Evaluation of the neural network models was performed using a confusion matrix and t-SNE visualization to ensure accurate fault identification. Comparative analysis among the convolutional neural network techniques was conducted to show their effectiveness toward fault diagnosis. The multi-input 1-D CNN achieved 97% prediction accuracy. The results demonstrate that

multi-input 1-D CNN model provides better accuracy in fault diagnosis compared to the other models.

Keywords Rolling element bearing · Natural defect · Fault diagnosis · Convolutional neural network models

Introduction

Rolling element bearings are considered to be a vital element in all rotating machines. These bearings are constantly operating under various conditions and are utilized in a diverse array of industrial and transportation applications, including automobiles, airplanes, gas turbines, electric generators, space shuttles, etc. [1, 2]. Under working circumstances, an increase in the fatigue load and speed on the bearing contact surfaces will create a fatigue fault, viz. macro-pitting, micro-pitting, spalling and scuffing. Over 40% of failures in rotating machinery are attributed to bearing faults [3], leading to diminished accuracy, availability, safety, reliability, and cost-effectiveness of machines, as well as the degradation of bearing life [4]. To maintain accuracy and reduce shutdown costs and accidents, monitoring and estimating the life of bearings are becoming more essential [5]. Therefore, nowadays fault diagnosis and condition monitoring of the machine is a highly valuable research area in industrial and academic. Vibration approach is a frequently adopted technique for condition monitoring of machines because every defect on the machine is increasing the vibration levels [6]. Other condition monitoring techniques include oil analysis, thermography, acoustic emissions, and ultrasonic testing. Vibration analysis is often preferred because

D. Sahu (✉)
University Teaching Department, CSVTU, Bilal, Chhattisgarh
491101, India
e-mail: devendrasahu721@gmail.com

R. K. Dewangan
Rungta College of Engineering and Technology, Raipur,
Chhattisgarh 490290, India

S. P. S. Matharu
National Institute of Technology (NIT), Raipur, Chhattisgarh
492001, India

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Krishna's Vikash Group of Institutions, Raipur Campus

DIWALI MILAN 2K24

On 26th October, Krishna Vikash Group of Institutions celebrated Diwali Milan with enthusiasm and warmth. The campus was beautifully decorated with lights and diyas, creating a festive ambiance that filled everyone with joy and positivity.

This celebration brought together students, faculty, and staff, fostering unity and a sense of community. The gathering allowed everyone to share Diwali greetings and reflect on the festival's message of light, hope, and prosperity. The Diwali Milan truly highlighted the values of togetherness and cultural appreciation within the Krishna Vikash family.



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