

ECHO ...

NEWSLETTER

Volume I, MARCH 2024 ISSUE



DEPARTMENT OF COMPUTER APPLICATION



Mahapurusha Srīmanṭa Saṅkarādeva Viśvavidyālaya, Guwahati Unit
Rupnagar, Guwahati, Pin-781032, Assam (India)



WORD FROM THE Head (I/C)

Dear friends and well-wishers of the Department of Computer Application, MSSV.

I am happy to present the March 2024 issue of the departmental newsletter to you.

This issue will give you glimpses of departmental activities, academic achievements, research & innovations and collaborations.

Your comments and suggestions are welcome to make the next issue of the newsletter more interactive.

Warm regards,

Dr. Santanu Kalita

Head (i/c) and Assistant Professor,

Department of Computer Application, MSSV

About the Department

The Department of Computer Application started functioning as a full-fledged department in the year 2014 and is situated at MSSV Guwahati Unit, Rupnagar, Guwahati-32, Assam with an objective to produce Computer Science and IT professionals for software industries, research and educational institutions and other organizations in India and abroad. The Department is also bear the responsibility for maintaining the campus network, installation and maintenance of servers as well as providing computation-related facilities to each and every member of the university.

The Department of Computer Application, MSSV with IIT Bombay under the NMEICT Project started offering online software training to the research scholars and students on useful and popular open source software from the Academic year 2016-17. The training was provided with learning materials from the Spoken Tutorial Project, IIT Bombay. Till date the department has organized 72 numbers workshops/trainings on open source for students in collaboration with Spoken Tutorial project, IIT Bombay. As a part of this training programme, learners can participate in online exams and receive certificates from Spoken Tutorial Project, IIT Bombay.

Vision & Mission

- Imparting knowledge in Computer Science and Application
- Research in various disciplines in Computer Science and Application and to generate skilled manpower in the fields of Computer Science and Information Technology
- To impact quality education in Computer Science and Information Technology in Diploma and PG level

Programmes Offered

1. Doctor of Philosophy (Ph.D.)

Duration of the Programme: 3 Years (Min) to 5 Years (Max)

Eligibility Criteria for Admission: (i) M.Sc./M.Tech./M.E /Master in Computer Application (MCA)/ B.E. / B.Tech. with 75% marks in aggregate or equivalent CGPA with a valid GATE Score. Minimum two recommendation letters from the Institute/ University from where B.E./B.Tech degree was obtained.

2. M.Sc. in Information Technology (Machine Learning and Big Data Analytics)

Duration of the Programme: 2 Years (Multiple exits as per NEP 2020)

Eligibility Criteria for Admission: B.Sc./B.C.A./B.E./B.Tech with minimum 45% marks

3. B.Sc. in Information Technology (Digital Forensics and Cyber Security)

Duration of the Programme: 4 Years (Multiple exits as per NEP 2020)

Eligibility Criteria for Admission: 10+2 in science stream

Knowledge Partner



SPOKEN TUTORIAL
SOFTWARE TRAINING PROJECT
Developed by IIT BOMBAY
A PROJECT OF THE NATIONAL MISSION ON EDUCATION THROUGH ICT
POWERED BY THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT
GOVERNMENT OF INDIA

News & Events



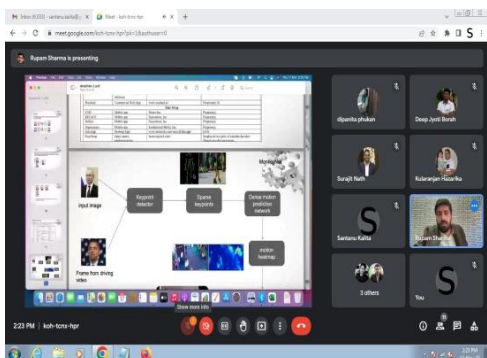
Teachers' Day Celebration

On the 5th of September 2022, the Department of Computer Application organized a heartfelt Teachers' Day Celebration, epitomizing gratitude and admiration towards the esteemed faculty members. The event commenced with a warm welcome, followed by a vibrant cultural program showcasing students' talents dedicated to their mentors. A felicitation ceremony ensued, honoring each teacher with tokens of appreciation and personalized messages from students, fostering a profound sense of appreciation and respect. Testimonials and speeches highlighted the profound impact of teachers on students' lives, culminating in a spirit of camaraderie and mutual admiration. The celebration concluded with a vote of thanks, affirming the significance of honoring the invaluable contributions of teachers in shaping the future generation.



Fresher's Day Celebration

The Department of Computer Application organized a vibrant Fresher's Day Celebration on the 14th of September 2022, welcoming both the 2022-24 PG batch and the 2022-26 UG batch with enthusiasm and warmth. The event was marked by lively interactions, engaging activities, and a sense of camaraderie among the incoming students, faculty, and existing students. Various cultural performances were arranged to facilitate bonding and integration within the departmental community. The celebration served as an excellent platform for the newcomers to familiarize themselves with the department, its facilities, and the faculty, while also providing an opportunity for existing students to extend a warm welcome and offer guidance to their juniors.



Seminar on "An Insight into Deepfake Technology"

On the 17th of November 2022, the Department of Computer Application organized a highly informative seminar titled "An Insight into Deepfake Technology," featuring Dr. Rupam Kumar Sarma from the Department of Computer Science and Engineering at Rajiv Gandhi University, Arunachal Pradesh, as the distinguished speaker. Dr. Sarma delivered an insightful presentation, elucidating the intricacies and potential ramifications of deepfake technology, which captivated the audience comprising faculty members, researchers, and students. The seminar provided a comprehensive understanding of the technological advancements, ethical considerations, and societal impacts associated with deepfake technology, fostering critical thinking and awareness among the attendees.



Academic Talk on "Sampling Methods: Its key role in Scientific Research"

The Department of Computer Application at MSSV Guwahati Unit hosted an engaging academic talk on the 28th of November 2022 entitled "Sampling Methods : Its Key Role in Scientific Research," presented by Dr. Uzzal Sarmah, Associate Professor in the Department of Computer Application at Don Bosco University. Dr. Sarmah's insightful presentation delved into the significance of sampling methods in scientific research, elucidating various techniques and their applications in data collection and analysis. Attendees, comprising faculty members, researchers, and students, benefitted from Dr. Sarmah's expertise, gaining a deeper understanding of the importance of robust sampling methodologies in ensuring the validity and reliability of research findings. The talk sparked meaningful discussions and fostered a greater appreciation for the role of sampling methods in advancing academic inquiry within the field of computer application.



Seminar on "Confusion Matrix in Classification Problems"

On the 7th of December 2022, the Department of Computer Application organized an illuminating seminar titled "Confusion Matrix in Classification Problems," featuring Dr. Syed Sazzad Ahmed, Assistant Professor in the Department of Computer Engineering at Don Bosco University, as the esteemed speaker. Dr. Ahmed delivered a comprehensive presentation, delving into the intricacies of confusion matrix and its crucial role in tackling classification problems within the realm of computer applications. The seminar attracted a diverse audience of faculty members, researchers, and students, who gained valuable insights into the practical application and interpretation of confusion matrices in assessing the performance of classification algorithms. Dr. Ahmed's expertise and engaging delivery style facilitated meaningful discussions, fostering a deeper understanding of this fundamental concept in the field of computer science.



Hands-on Training on Networking Fundamentals

Hands-on training can help us to build conceptual understanding, practical skills, and learn theoretical concepts through real-world examples. On March 29, 2023, the Department of Computer Application organized an enriching hands-on training session titled "Networking Fundamentals," facilitated by Mr. Imdadul Islam Ahmed from SMART IT, Guwahati. The training aimed to provide participants with practical insights into the foundational concepts of networking, equipping them with essential skills for understanding and managing network infrastructures. Through interactive demonstrations and exercises, Mr. Ahmed adeptly guided attendees through various networking fundamentals, including network protocols, configurations, and troubleshooting techniques.



One Week Hands on Workshop on Full Stack Web Development

The Department of Computer Application at MSSV Guwahati Unit hosted a comprehensive one-week hands-on workshop on Full Stack Web Development from May 29 to June 4, 2023. The workshop featured esteemed facilitators Mr. Deva Raj Mahanta from the Institute of Advanced Study in Science and Technology (IASST), Guwahati, and Mr. Rishiraj Baruah from the Department of Computer Science at Gauhati University. Participants were immersed in an intensive learning experience covering the entire spectrum of full-stack web development, from frontend technologies like HTML, CSS, and JavaScript to backend frameworks and databases. Through a combination of lectures, practical sessions, and project work, attendees gained practical skills and insights into building dynamic web applications.



Career Counseling on Artificial Intelligence and Data Science

The Career Counseling session on Artificial Intelligence and Data Science, hosted by the Department of Computer Application at MSSV on October 11th, 2023, was an enlightening event for attendees. Mr. Nilutpal Gogoi, a distinguished speaker and Senior Manager at Jio Institute, Navi Mumbai, Maharashtra, provided invaluable insights into the rapidly evolving fields of AI and Data Science. His expertise shed light on the diverse career opportunities available in these domains, emphasizing the growing demand for skilled professionals in the industry. Participants gained valuable knowledge about the current trends, requisite skills, and potential career paths, making the session immensely beneficial for aspiring professionals in the field.



Collaboration with TCS for conducting Exam for NTA, SBI, BOM, IBPS etc

Tata Consultancy Services Limited (TCS) is an Indian multinational information technology (IT) services and consulting company headquartered in Mumbai. It is a part of the Tata Group and operates in 150 locations across 46 countries. The Department of Computer Application, MSSV has successfully established a collaborative partnership with Tata Consultancy Services (TCS) to conduct various examinations for esteemed organizations such as NTA, SBI, BOM, IBPS, and others at Guwahati Unit. This collaboration marks a significant milestone in enhancing MSSV's financial strength through a reputable industrial alliance.

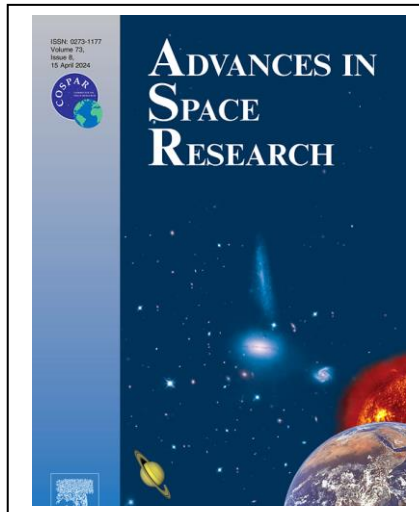


Skill Enhancement Course on ICT in Collaboration with Skill India Mission

Skill India is an initiative launched by the government of India in 2015 to train over 40 crore Indians in different industry-related jobs. The mission focuses on skilling, re-skilling and upskilling through short-term and long-term training programmes. The Department of Computer Application at MSSV is honored to participate in the Skill Enhancement Course on Information and Communication Technology (ICT) as part of the university's Skill India Mission initiative. Recognizing the importance of ICT skills in today's digital age, our department is committed to empowering individuals with the knowledge and expertise needed to excel in the rapidly evolving technological landscape.



Research & Innovation (2023-2024)



Ionospheric TEC prediction using hybrid method based on ensemble empirical mode decomposition (EEMD) and long short-term memory (LSTM) deep learning model over India

Researchers at Department of Computer Application led by Dr. Santanu Kalita, have invented a new hybrid model for predicting GPS total electron content data over India. The research is significant as it develops a hybrid Ensemble Empirical Mode Decomposition (EEMD) and Long Short-Term Memory (LSTM) model to predict GPS-derived Total Electron Content (TEC) over Indian GNSS stations, addressing the dynamic ionospheric behavior crucial for space weather understanding, with superior performance compared to other models. The study was published in *Advances in Space Research*, Elsevier. Speaking about the work, Dr. Santanu Kalita said, "In our research group at MSSV, we extensively work on all aspects of ionospheric studies and its emerging applications with academic and industrial partners".

More details: <https://doi.org/10.1016/j.asr.2022.10.067>



Machine learning-based approach for detecting earthquake precursor from GPS satellite data

In a groundbreaking development presented at the Mediterranean Geosciences Union Annual Meeting (MedGU-23) in Istanbul, Turkey, a team of researchers from Department of Computer Application, MSSV, unveiled a cutting-edge paper titled "Machine learning-based approach for detecting earthquake precursor from ionospheric time series data at anomaly crest station." Set to be published in *Advances in Science, Technology & Innovation* by Springer, the research introduces an innovative machine learning methodology that identifies earthquake precursors from ionospheric time series data collected at anomaly crest stations. Led by Dr. Santanu Kalita and Dr. Naba Jyoti Sarmah, the study marks a significant stride in earthquake prediction, uncovering previously undetected patterns and signals. This interdisciplinary approach, combining machine learning and geosciences, holds immense potential for advancing seismic event monitoring and response strategies, promising a safer and more resilient future for earthquake-prone regions



Prediction of Ionospheric TEC based on Ensemble Learning Method

Dr. Santanu Kalita from Department of Computer Application, MSSV, Assam, has been honored with the Certification of Paper Presentation for his outstanding contribution at the International Conference on Mathematical Modeling in Physical Sciences in Belgrade, Serbia, from August 28-31, 2023. The paper, titled "Prediction of Ionospheric TEC based on Ensemble Learning Method," showcased Kalita's expertise in the field. The certification, issued by Prof Dimitrios Vlachos, IC-MSQUARE Chair at the University of Peloponnese, serves as a testament to the quality of the presentation and recognizes Kalita's valuable contribution to the conference.

Patents

- Patent Application ID and Date of Grant: 202231009348 A dated: 11.03.2022
Publication Number 10/2022
Title of Invention: An IOT based smart gas monitoring and controlling system
Inventor: Mr. Surajit Nath
- Patent Application ID and Date: Application No: 202321053974 dtd 10/08/2023
Title of Invention: Intelligent Decision Support System for Business Management Using AI and Machine Learning
Inventor: Dr. Santanu Kalita

Student's Achievements (2023-2024)



Surajit Nath, Research Scholar, Department of Computer Application has been awarded the degree of Doctor of Philosophy for his thesis entitled "Modeling and Prediction of Ionospheric Characteristics using Machine Learning Technique" under the supervision of Dr. Santanu Kalita.



Ms. Ranjishmita Mishra
Folk Dance - 2nd Position,
Creative Dance - 3rd Position
Varsity Week, 2024



Mr. Junaram Arandhara
Winner, Talent Hunt Programme
Runners up of Chess Competition
Ethnic food prepare -1st Position
Varsity Week, 2024,



Ms. Kritima Kalita
Best Chef,
Ethnic food prepare -1st Position,
Chat making-3rd Position,
Varsity Week, 2024



Ms Dimpri Saikia
Best Chef,
Ethnic food prepare -1st Position,
Chat making-3rd Position,
Varsity Week, 2024



Mr. Kishore Chhetry
Winner of Chess Competition
Varsity Week, 2024



Ms. Darshana Chakraborty
Miss Freshers

Mr. Rahul Das
Mr Freshers



Faculty & Staff



Dr. Santanu Kalita

Assistant Professor and Head (i/c)



Dr. Naba Jyoti Sarmah

Assistant Professor



Himun Jyoti Nath

Teaching Associate



Momi Tamuli

Guest Faculty



Krishna Sankar Borah
Designation- Laboratory Assistant



Angshuman Kakati
Designation- Laboratory Assistant

Beyond the Lens..



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