B.M.S. College of Engineering, Bengaluru-19
(Autonomous Institute, Affiliated to VTU)
Department of Electronics & Instrumentation Engineering

Phase Shift Report-14 & 15 Dec 2023

ROS Workshop

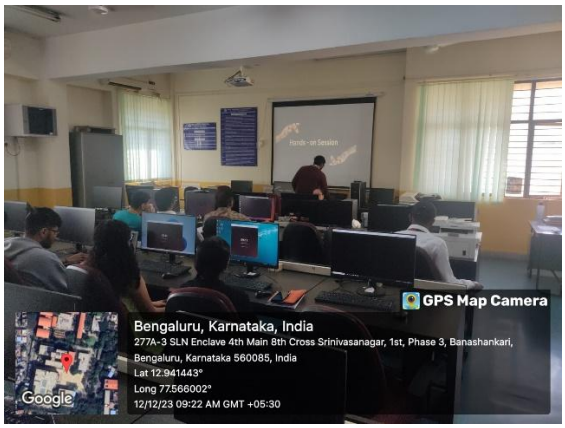
The Workshop on Robot Operating System (ROS) commenced enthusiastically, introducing participants to the fascinating world of ROS and its diverse applications. The two-day event unfolded on the 14th and 15th of December 2023, from 9 AM to 1 PM each day.

The workshop gave participants a comprehensive understanding of ROS and its real-world applications. The sessions were informative and hands-on, allowing participants to gain practical experience and delve into the intricacies of working with ROS.

One of the key highlights of the event was the interactive nature of the sessions. Participants actively engaged with the material, fostering a dynamic learning environment. The resource person, Mr. Rohith J Sharma, brought his expertise to the forefront, guiding participants through practical exercises and resolving queries with adept clarity.

As the event drew to a close, a vote of thanks was extended by Chetan, expressing gratitude to Mr. Rohith for his valuable insights and guidance throughout the workshop. The Head of the Department (HOD) presented a heartfelt token of appreciation, a memento, to Mr. Rohith, recognizing his significant contribution to the success of the workshop.

To capture the memories of this enriching experience, a group photo was taken with participants, symbolizing the collective journey into the realm of ROS. The event concluded on a high note, leaving participants with newfound knowledge and a memorable experience.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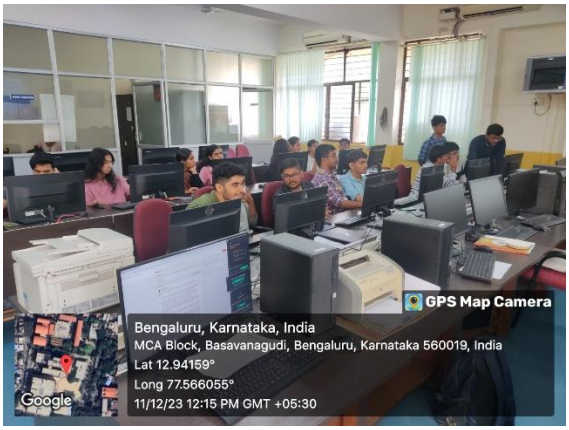
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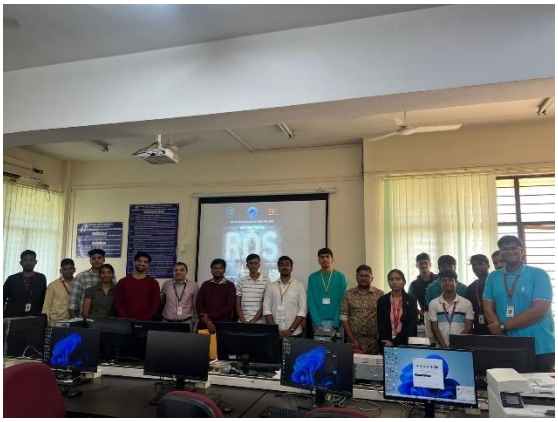
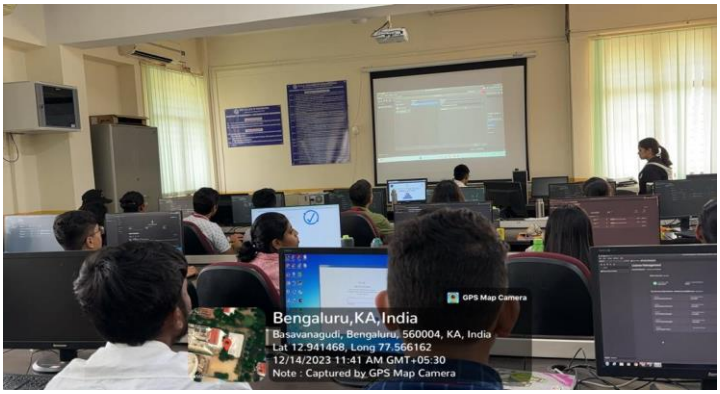
ROS


ROS


INTRODUCTION TO
ROS

Concluding the multifaceted and engaging event held on the **14th of December 2023**, spanning the duration from **9 AM to 5 PM**, an in-depth and all-encompassing overview of printed circuit board (PCB) terminologies and the nuanced functionality of software captivated the attention of a sizable audience comprising 39 attendees, as they were immersed in an interactive and dynamic format that facilitated a profound understanding of the subject matter. Delivered with utmost expertise, the event featured valuable insights into working with hardware components, imparted through a meticulously prepared presentation by the erudite Mr.Jitthu Joseph and Ms. Linet Thomas C, both distinguished research scholars hailing from the esteemed Center for Nano Science and Engineering (CeNSE) at the Indian Institute of Science in Bengaluru(IISc) . The pivotal focus of the event was directed towards introducing and acquainting participants with **Altium**, an open-source software revered for its prowess in circuit design and simulation. The erudite resource persons not only provided a rudimentary overview of the software but also actively guided the participants through the intricate process of constructing Voltage Divider design, In Altium Designer, the project commenced by establishing a new project, followed by schematic creation, resistor placement, wiring, annotation, and assignment of values. The voltage divider circuit was simulated, results were examined, and, optionally, the design was transferred to the PCB layout. Stringent adherence to design rules preceded the generation of manufacturing files for the comprehensive report..



Moreover, the distinguished industry connect for the event was established through project guidance facilitated under the esteemed supervision of Mr. Jitthu Joseph, Senior Technologist in Systems and Packaging Facility at the Center for Nano Science and Engineering (CeNSE) at the Indian Institute of Science(IISc). The hands-on and immersive activity integrated into the event structure not only served as a practical conduit for participants to grasp the fundamentals of operating Altium but also afforded them the invaluable opportunity to gain firsthand experience in the intricate realms of circuit design and simulation, thereby ensuring the acquisition of practical knowledge and skills germane to this evolving and dynamic field. In essence, the event achieved resounding success in its mission to equip participants with a holistic understanding of PCB terminologies, software functionality, and hands-on experience in circuit design, thereby contributing significantly to their knowledge and skill enhancement in this technologically advanced domain. This event was successfully led by the Faculty Coordinator S. Kumuda, Assistant Professor and Student Coordinators Niharika HC, Trivikram J

VR EDUTAINMENT

The event took place on December 15th, lasting from 9 am to 5 pm. It commenced with an introductory lecture on Virtual Reality (VR), providing participants with fundamental knowledge and highlighting key differences in VR technologies.

Morning Session:

During the morning session, participants received valuable information about VR, likely covering its applications, history, and technological aspects. This theoretical foundation likely prepared them for the hands-on experiences later in the day.

Afternoon Session:

The afternoon session was particularly exciting as VR headsets were distributed to all students. This hands-on approach allowed participants to immerse themselves in the practical aspects of VR technology. The focus shifted towards a specific project within a company, where students learned to manipulate temperature and water levels using the VR headsets.

Competition:

The highlight of the event was the competition organized by esteemed individuals, including Dr. Pavanraj HR (Senior System Engineer), Mr. Lathesh Shetty (VR Engineer), and Mr. Ashwin V V (VR Engineer) from Modelicon Infotech LLP. The competition likely tested the skills and creativity of the participants in applying what they had learned throughout the day.

Winners and Prizes:

Congratulations were in order for the winners—Akshay Naik & Gopi B of BMSCE, and Anish & Tejaswini of BMSCE. Modelicon Infotech LLP, as a generous sponsor, rewarded the winners with notable prizes. The first-place winners, Akshay Naik & Gopi B, received a Rs 1,500 Amazon Pay coupon, while the second-place winners, Anish & Tejaswini, were awarded a Rs 1,000 Amazon Pay coupon. These prizes not only recognize the efforts and skills of the winners but also serve as an incentive for future participation and excellence in such events.

Organizers:

The event was organized by Modelicon Infotech LLP, showcasing their commitment to fostering education and practical experience in the field of Virtual Reality. The presence of experienced professionals like Dr. Pavanraj HR, Mr. Lathesh Shetty, and Mr. Ashwin V V further added credibility to the event, providing valuable insights and guidance to the participants.

Overall Impact:

This VR event not only provided participants with theoretical knowledge but also allowed them to apply their learning in a practical setting. The combination of lectures, hands-on experiences, and a competition likely created a dynamic and engaging learning environment. Such events contribute significantly to the overall education and skill development of students interested in emerging technologies like Virtual Reality.

Event coordinators :

Rahul S M

Manoj Kumar S A

Faculty Coordinator :

Kumuda S

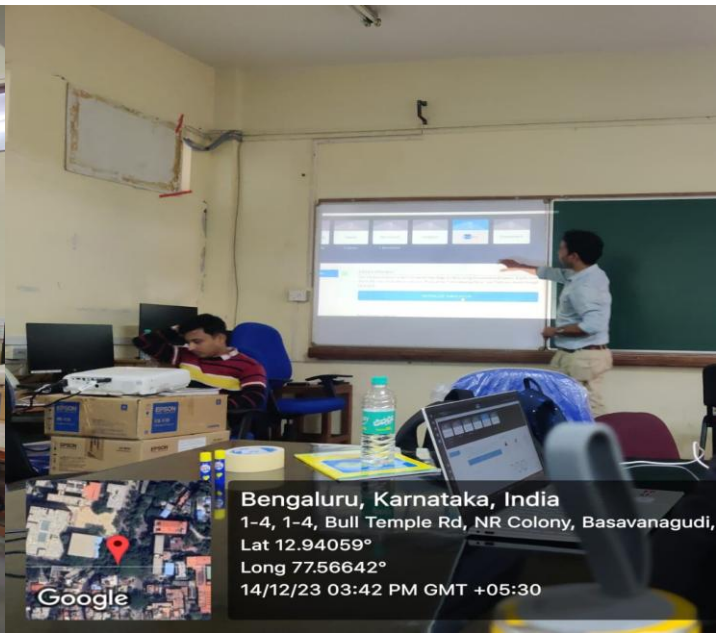
Department Of Electronics and Instrumentation

Anadigit Lockpick

The event was conducted on the 14th of December 2023, and it was an event where participants must solve analog or digital circuits using an online simulation tool to unlock a mystery box. The complexity of the circuits increases with each level and there are time limits set for each circuit. The event was open to teams of 2-3 people and participants were required to have a laptop and an account in NI Multisim. The team that unlocks the locker in the shortest amount of time wins. In this event participants used simulation tools to model and test the behavior of electronic circuits, while analog and digital circuits are two different types of electronic circuits that have different characteristics and applications. Familiarizing with these topics would likely involve learning the basics of how simulation tools work and the key differences between analog and digital circuits. The winners of the event were Ashutosh Kumar and Anushka Sinha from BMSCE who won a cash prize of Rs. 1500, and the runners-up were Shivakumar and Gaurav G from BMS College of Engineering who won a cash prize of Rs. 1500. The resource person was Sindhuja V, Associate Software Engineer, Bosch Global Software Technologies.

The "AI and ML using Edge Devices" workshop, conducted on the 14th of December 2023, as part of the PhaseShift Tech Event organized by Electronics & Instrumentation Department was a remarkable event focused on imparting practical skills in the integration of ST microcontrollers with AI and ML applications. The workshop comprised two highly informative sessions, with the first session using the Arduino IDE to teach participants the basics of interfacing microcontrollers with sensors, data collection, and LED connectivity. The second session, utilizing Nano Edge AI Studio, delved into the implementation of AI and ML algorithms, emphasizing real-world applications. Following the training, a hackathon challenged teams to detect gestures using an ST controller and motion sensor, fostering creativity and collaborative problem-solving.

The winners were celebrated with substantial cash prizes: the first prize-winning team received Rs. 1,500, the runner-up secured Rs. 1,000, and the second runner-up was awarded Rs. 500. This competitive element added excitement and showcased the innovative solutions participants developed within the stipulated time frame. The resource persons, led by Mr. Rohit Prajapati, Technical Director at DigiToad Technologies, alongside his team Laingam Meetei (field application engineer) and Laingam Meetei (field application engineer), played a pivotal role in guiding participants through the hands-on sessions and the hackathon, providing valuable insights into practical applications of AI and ML on edge devices. The event successfully combined theoretical knowledge with real-world scenarios, creating a dynamic learning environment that left a lasting impact on the participants' skill set and problem-solving capabilities.



MAZE RUNNER 2.0

The “Maze runner 2.0” event was a flagship event of our department electronics and instrumentation where participants were trained to build an autonomous bot to solve a maze. The event was conducted on 14th and 15th of December, where the workshop and hands on session on how to build a bot was done on 14th of December and we held a competition on 15th of December. The workshop was guided by our resource person, Prajwal Upppoor, a distinguished alumni of our college. He taught the participants the basics of microcontroller and Arduino programming for interfacing the sensors to the Arduino board and simple maze solving algorithms. On 15th of December, the participants were given time till 1pm for any changes to be made on their bots and competition was held at 2pm. A maze was setup by us where it had 8 different checkpoints which means that if the participant wanted to restart their run, they can continue from the checkpoint that they had reached and the team which solves the maze in the least time possible and reach the furthest point in the maze would be declared as a winner. Each participant was given 1 test runs to check their performance of the bot and makes changes accordingly, and the next 2 runs were considered for evaluation. The overall event was well received by both the participants and faculty and we were a part of an amazing show. The event was concluded at 5:30pm where first place was secured by Ramya K J and team from UV college of engineering.