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### PROF. DR. JITENDRA TORAVI

HEAD OF DEPARTMENT, BIOMEDICAL ENGINEERING

Hello Everyone,

A hearty welcome to the department of Biomedical Engineering. I am happy to let you know that the department conducted a 30 Hours Certificate Course on "Medical Device Development and Regulations" in an Online Mode. This event saw huge response from students and faculty across India. The program will conclude on 9<sup>th</sup> October 2021. We are planning to have more certificate course in emerging areas in coming days.

I would like to inform my readers that dept. has been experimental in conducting inhouse internship apart from onsite internship. In coming semester break we propose to continue the inhouse internship either as an extension of earlier work or executing entirely new projects.

As current semester is about to end. All students are expected to start preparing for the examinations.

Wish you all the Best!





The greatest glory in living lies not in never falling,  
but in rising every time we fall

-Nelson Mandela



## BMESI SPONSORED CERTIFICATE COURSE on MEDICAL DEVICE MANUFACTURING AND REGULATIONS



**BMESI SPONSORED CERTIFICATE COURSE ON MEDICAL DEVICE MANUFACTURING AND REGULATIONS'**  
**ORGANIZED BY BMSA AND BMESI**

Presents

**"HANDS-ON WORKSHOP ON AI AND ML IN HEALTHCARE SYSTEM"**

BMESI-VIT Chapter and BMSA Student Chapter organized a joint event-*Certificate Course on Medical Device Manufacturing and Regulations*. This program was sponsored by Biomedical Engineering Society of India.

The objective of this Certificate course was to conduct Webinar Sessions and Hands on Workshop on Latest Technologies for building Biomedical Applications. The course was conducted in online mode with participants from VIT and other colleges across India. Participant included students, faculty and research scholars etc.

### Topics to be discussed

- Application of AI and ML in healthcare
- Practically applied cases
- Resources for database
- Types of Biomedical Signals
- Signal Processing technique
- AI in Medical Imaging
- Project ideas for students

Software- Google Colab  
Platform: MS Teams

#### About the speaker

**MR. KALPESH PATIL**

Mr. Kalpesh Patil is an alumnus of VIT and has completed Masters from IIT-BHU, Varanasi. Currently he is working at Michelin as Manager AI-Data scientist. Prior to Michelin he was in Actofit and Biosense.



04-09-2021  
3PM TO 5 PM

08-09-2021  
6:30PM ONWARDS



The first talk was conducted on 28<sup>th</sup> August-2021 and delivered by Ms. Sneha Kulali (Penumbra Inc-California) on Medical Manufacturing and Regulations. This was followed by Hands-on workshop on AI and ML delivered by Mr. Kalpesh Patil (AI Data Scientist-Michelin) on 04<sup>th</sup> and 08<sup>th</sup> September-2021. A webinar on Medical Device Safety as delivered by Mr. Neelesh Shinde (CTO-Jupiter Hospitals Group) on 24<sup>th</sup> September-2021 followed by Talk on Regulatory Framework for Medical Devices conducted on 25<sup>th</sup> September and delivered by Mr. Darly Kuriakose, RAC (Chief Consultant-The Device School)

*Some session of this series are yet to happen in October-2021*

## Department Staff

**DR. JITENDRA TORAVI**  
PROFESSOR AND HEAD



**EDUCATION QUALIFICATION:**  
PHD-BIOMEDICAL ENGINEERING

**TEACHING EXPERIENCE:**  
05 YEARS

**INDUSTRIAL EXPERIENCE:**  
19 YEARS

**AREA OF SPECIALIZATION:**  
BIOMEDICAL INSTRUMENTATION  
HOSPITAL MANAGEMENT  
ERGONOMICS

**PROF. GEETHA NARAYANAN**  
ASSOCIATE PROFESSOR



**EDUCATION QUALIFICATION:**  
MTECH-POWER ELECTRONICS

**TEACHING EXPERIENCE:**  
27 YEARS

**AREA OF SPECIALIZATION:**  
CONTROL SYSTEM  
ROBOTICS  
DIGITAL AND VLSI DESIGN

## Faculty Achievements

Dr. Jitendra Toravi

Dr. Jitendra Toravi has been appointed as 'Judge' for 15<sup>th</sup> Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21 (Final Round).

The Avishkar Research Convention is designed by Department of Students' Development, University of Mumbai, with the intention to develop a research culture and scientific temper among the students, scholars and teachers from under-graduate to doctoral level in the state of Maharashtra.

For Engineering and Technology Category the convention took place on 1<sup>st</sup> July, 2021.



## Student's Article

### Hospital Management: Perceptions | Perspective | Reality

Yashodhan Gharote

"Hospital" is one word which has different meanings for different people. During my time as an intern with a hospital I realised something which inspired me to write about this topic. Today, for those of us who have never been a part of the hospital administration and management process, don't realise that there are many other departments like the TPA, Operations, Technical Support, Biomedical, ADMIN etc working alongside the doctors, surgeons and nurses. Although most of the private hospitals in India today have their systems automated, portals made for documentation entries and billing, and follow a hassle free and cashless insurance system, on the contrary a major proportion of the hospitals don't have all these equipped.



In such a case if you ever visit a hospital, you will typically find that at one point in time each person is right in their place. Not many people know that a doctor gets only a small proportion of the total expenditure the hospital charges the patient. The nurses and ward boys have their own challenges, they need to keep a record of each and everything and maintain loads of paperwork. Even the patient and his relatives face challenges, right from filling a dozen forms to dealing with the finances and insurance. The TPA and admin have long documented procedures to follow, and when asked they need to keep a proof of everything both in softcopy and hardcopy as well. And when all of this bombards at one point technically no one can be blamed as each one sounds right in his own way.

This calls for the need of a better hospital management system, a system which saves time and energy of not just the staff but the patient as well. A system which is automated in all sense and solves the issues like paperwork, robust processes, etc. Having said all of this the thing that amazed me the most was an incident in the hospital. A man had an argument with the staff the other day, and on the next day the birth of his new-born child was celebrated by the entire hospital with mighty enthusiasm, forgetting all their challenges and problems but rather just enjoying the present moment! The real success for any hospital can be the fact that when a patient is discharged from the hospital, not just the patient but his relatives and the hospital staff get through the process seamlessly. Although a lot of things have changed and have been implemented for the ones left to be changed, that moment in the hospital assured me that change will come with time.

## BMSA STUDENT CHAPTER ORGANIZED A WEBINAR ON 'SOFTWARE MEETS HEALTHCARE'

BMSA Student Chapter organized a 1-day webinar on 'Software Meets Healthcare'. The session was delivered by Mr. Siddarth Pai on 30<sup>th</sup> September 2021. Mr. Pai is Software Engineer at G.E. Healthcare.

Mr. Pai started with the session by focusing on post independence innovation, entrepreneurship in the technology domain and gave a very crisp insights. He spoke on some of the software engineering Microservices using Java, Python, Cloud technologies-Amazon web services, Microsoft Azure, Google cloud, AI-tensor flow, Keras and Pytorch.

Further Application of Digital Healthcare like Mobile Health-Fitness Tracker, Healthcare Information Technology-Patient Medical Records, Predictive Analysis-redict outcomes through AI algorithms, advanced prosthetics-3D printing were discussed in depth.



## Know an Alumna

Sayali Kulkarni (2013 Batch)

I am an Engineering Manager for polymer process engineering department at Applied Medical, CA-US. It is a medical device manufacturing company that specializes in minimal invasive surgery products. I lead a team of eight engineers and work in a very fast-paced vertically integrated environment. I love what I do and get to make a meaningful positive impact on healthcare industry.

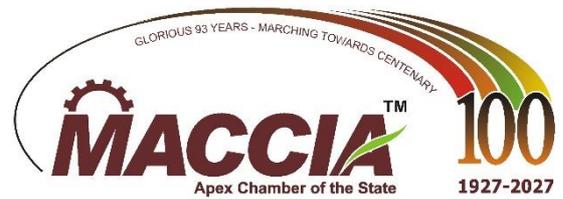
After completing the B.E. in Biomedical Engineering from VIT, I had a pretty good foundation of engineering concepts. The faculty at VIT always encouraged us to learn latest developments in medical industry, see the use of medical devices first-hand by visiting hospitals, and be a problem solver which further inspired me to pursue M.S. in Biomedical Engineering from Michigan Technological University.



I work in injection molding manufacturing area - a technology that I was aware of but learnt almost everything on the job. So don't be afraid to take challenges and learn something new. Create opportunities for yourself. Do not hesitate to reach out, develop soft skills and core technical skills, communicate better – go above and beyond.

## STUDENT INTERNSHIP UPDATES

- Ms. Purva Durugkar from Final Year is doing Internship at Cerebranium as a Machine Learning Intern.
- Maharashtra Chamber of Commerce, Industry and Agriculture (MACCIA) has selected 15 students from the dept. for Virtual Internship.
- Mr. Yahya Qureshi from Third Year completed Internship at Learnovate as a Web Development Intern.
- Mr. Vinit Chute from Third Year completed Internship at Learnovate as a Web Development Intern.
- Ms. Swati Gaikwad from Third Year completed Internship at Learnovate as a Web Development Intern.
- Ms. Rutuja Jangam from Third Year completed Internship at Learnovate as a Head-HR Intern.
- Mr. Ayush Jaiswal from Third Year completed Internship at Learnovate as a Web Development Intern.



Learnovate



CEREBRANIUM

“  
*We are living in a period where combining biomedicine and engineering is needed to answer many unsolved scientific questions.*  
 ”

-University of Texas

THE  
**EDITORIAL TEAM**

PROF. ARUNKUMAR RAM  
 Chief Editor