



Vision of the Department

To be a globally recognized centre of excellence in the field of biomedical engineering where learners are nurtured in a scholarly environment to evolve into competent professionals to benefit society

Mission of the Department

- Evolve a curriculum which emphasizes on strong engineering fundamentals with the flexibility to choose advanced courses of interest and gain exposure to tools and techniques in Biomedical Engineering.
- Encourage a teaching-learning process in which highly competent faculty share a symbiotic association with the institutes of repute.
- Facilitate creation and dissemination of biomedical engineering knowledge through a digitally-enabled learning environment.
- Develop academic and infrastructural facilities with modern equipment and other learning resources and encourage reciprocal sharing with other institutes through networking.
- Establish a centre of excellence to enhance academia – biomedical industry partnership and work on collaborative projects.

Programme Educational Objectives (PEO)

- To enable the pursuit of knowledge in the field of Biomedical Engineering and contribute to the profession and employability of the students.
- To engage in research, generate the employment through entrepreneurship and work effectively in multidisciplinary environment.
- To understand the human, social, ethical and environmental context of their profession and contribute positively to the needs of individuals and society.

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- Prof. Komal Shinde

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PROF. DR. GAJANAN NAGARE

HEAD OF DEPARTMENT, BIOMEDICAL ENGINEERING

Biomedical Engineering, field thrives on bold decisions, risk-taking, and the continuous pursuit of making groundbreaking innovations "right" for society. From developing advanced medical devices to improving diagnostic tools, and enhancing patient care, each decision we make leads to a better world.

I wish to welcome all the students to the new academic year 2026-27. As this new semester begins, I wish to convey that along with regular academics, department will be organizing several co-curricular activities in the form of industrial visits, expert talk, project competitions, seminars etc.

Our department student bodies BMESI-VIT Chapter and BMSA would be experimental in conducting technical and extra curricular activities. All students are encouraged to participate in these activities with full enthusiasm.

All the best for the new semester!





“Science is about knowing; engineering is about doing.” -
Henry Petroski



Guest Lecture series on “Bridging Biomedical Engineering and Healthcare Procurement” and “Exploring Data Engineering for AI/ML”

A guest lecture on “Medical Device Procurement” by Mr. Ashwin Vaidya, Biomedical Engineer at Haffkine Bio Pharmaceutical Corporation Ltd. and VIT alumnus (BIOM, 2013), was conducted on 9th April 2026 for Second year Biomedical Engineering students. The session offered valuable insights into medical device procurement, tendering, compliance, asset management, and industry expectations. An engaging Q&A enriched students' understanding of career opportunities and the evolving healthcare technology landscape.

A guest lecture on “Data Engineering for AI/ML” by Mr. Kailash Patel, Lead Engineer at Ascendion and VIT alumnus (INFT, 2018), introduced students to scalable data pipelines, AI/ML data architecture, and industry best practices. The interactive session enhanced students' understanding of data engineering's vital role in modern AI-driven applications. The guest lecture was conducted on 4th April 2026.

Both the guest lectures were arranged by Prof. Harish Ojha, Assistant Professor in the Department of Biomedical Engineering.



Data Engineer for AIML Alumni Guest Session 2026

Meet the Speaker:



Kailash Patel
Lead Engineer, Ascendion
VIT Alumnus (INFT, 2018)

Topic & Outline:

- Building Scalable Data Pipelines
- Data Architecture for AI/ML
- Optimization for ML Workloads
- Real-world Case Studies

An in-depth session on leveraging data engineering for successful AI/ML deployments.

04.04.2026
Saturday

3:30 Pm
onwards

Online via
Microsoft Teams

Join us for an exclusive session with data engineering visionary **Kailash Patel**. He will explore the critical role of data engineering in **unlocking** the potential of Artificial Intelligence and Machine Learning, offering real-world perspectives and strategic insights for scaling ML systems.

JOIN SESSION: <https://teams.microsoft.com/join/456249212327267p-HlvWFKxTpmQs5bh8c>

Scan QR to Join Session



VIT

Glimpses of the guest lecture conducted by Mr. Ashwin Vaidya and Mr. Kailash Patel

PROF. HARISH OJHA
ASSISTANT PROFESSOR



EDUCATION QUALIFICATION:
M TECH-ELECTRONICS ENGINEERING

TEACHING EXPERIENCE:
15 YEARS

AREA OF SPECIALIZATION:
ELECTRONIC DEVICES & CIRCUITS
MACHINE LEARNING
ARTIFICIAL INTELLIGENCE

Department Staff

PROF. KOMAL SHINDE
ASSISTANT PROFESSOR



EDUCATION QUALIFICATION:
ME-INSTRUMENTATION ENGINEERING

TEACHING EXPERIENCE:
13 YEARS

AREA OF SPECIALIZATION:
DATA SCIENCE
DIGITAL ELECTRONICS
OBJECT ORIENTED PROGRAMMING

Know an Alumna

Ms. Geeta Gajelli (2014 Batch)

Geeta is an alumna of VIT , passed out in the year 2014 from the Biomedical Engineering Department.



The detour that changed everything

If someone had walked into my Biomedical Engineering classroom at VIT in 2014 and said, "Ten years from now, you'll be working in marketing, building brands, creating campaigns, and eventually moving to Canada," I would probably have laughed and asked them if they had entered the wrong classroom.

Yet here we are!

Today, I am exploring new professional opportunities in Canada and building the next chapter of my career. Before moving here, I spent several years working in marketing and communications across startups, agencies, and large organizations, including Bajaj Finserv and Axis Mutual Fund. At one point, I even co-owned and operated a food truck business in Pune for nearly three years. If you're wondering what a Biomedical Engineer was doing running a food business, you're not alone! But that experience taught me invaluable lessons about entrepreneurship, customer behavior, branding, operations, and resilience; lessons that no classroom could fully replicate.

Looking back, every seemingly unrelated experience added a new layer to my professional growth. Whether it was working with startups, building brands in the financial sector, or managing a food truck business, each chapter taught me something different about people, business, and problem-solving.

Whenever I share my career journey, I almost always get the same question: "Wait... you're a Biomedical Engineer. How did you end up in marketing?"

The honest answer is that the signs were always there.

Even during college, I found myself naturally drawn toward creativity, storytelling, communication, and understanding what makes people connect with ideas. I was also actively involved in the Publicity Team, helping promote events and activities. Looking back, I probably enjoyed brainstorming campaigns, creating awareness, and engaging audiences just as much as I enjoyed my technical coursework. At the time, I didn't know it was called marketing, I just knew I loved doing it.

While many of my friends and classmates pursued careers directly related to engineering, I decided to take a different path after graduation and enter the world of marketing and communications. It felt like a bold decision at the time, but it was one that aligned with my interests and strengths. What surprised me most was realizing how much my engineering education continued to help me, even after I had switched industries. One of the biggest misconceptions students often have is that if they don't end up working in the exact field they studied, their degree somehow becomes less valuable. My experience has been the complete opposite.

Engineering teaches you how to think. It teaches you how to break down complex problems, analyze information, ask the right questions, and find practical solutions. Whether I was building a marketing strategy, planning a campaign, understanding customer behavior, or solving a business challenge, I found myself using the same structured thinking that Biomedical Engineering had helped develop.

The tools changed. The mindset didn't. VIT played a much bigger role in shaping that mindset than I realized at the time. VIT taught me adaptability. Engineering has a way of humbling you, challenging you, and teaching you persistence. It teaches you that the first solution may not always work and that learning often happens through trial, error, and perseverance. Those lessons have stayed with me throughout my professional journey.

The faculty members who encouraged us, the friendships built over assignments and deadlines, the team activities, and the countless conversations in and around campus all contributed to shaping who I am today. Looking back, I realize that college wasn't just preparing us for jobs, it was preparing us for life.

Interestingly, the connection between healthcare, technology, and communication is becoming stronger than ever. Health-tech startups, digital healthcare platforms, AI-powered medical solutions, patient engagement tools, and healthcare communication are creating exciting opportunities that combine technical knowledge with creativity and communication skills. **The future belongs to people who can bridge disciplines rather than stay confined within them.**

If I could share a few thoughts with current students, they would be these:

First, don't worry if you don't have your entire career figured out. Most professionals don't. Careers are rarely straight lines. They are often a series of experiments, discoveries, and unexpected opportunities.

Second, stay curious. Some of the opportunities that shape your future may come from interests that seem unrelated to your degree today.

Third, build skills beyond academics. Communication, teamwork, problem-solving, creativity, and adaptability will help you no matter which profession you eventually choose.

And finally, don't be afraid of taking a different path. Sometimes the opportunities that feel like detours end up becoming the most rewarding parts of the journey.

To all the students reading this: your degree is an important chapter of your story, but it is not the entire story. Stay open to possibilities, trust your abilities, and don't be surprised if life introduces a few unexpected plot twists along the way.

STUDENT ARTICLE



Brain–Computer Interfaces: Bridging Minds and Machines

Ms. Maheeka Kedia(Final Year Biomedical Engineering)

Imagine being able to send a message, move a wheelchair, or control a robotic arm without touching a screen or pressing a button. It may sound like a scene from a futuristic movie, but thanks to Brain–Computer Interfaces (BCIs), this idea is steadily becoming a reality.

Brain–Computer Interfaces (BCI) are some of the newest and most exciting technologies in the field of Biomedical Engineering because they allow direct communication between the human brain and an external device. Essentially, BCIs can convert brain signals into movement (or perform an action) in response to a user's intention when an individual can no longer physically move or operate.

The brain produces a huge amount of electrical/chemical activity that serves as the basis for every thought, movement, and emotion that a human being experiences. This activity arises from the activity of the 86+ billion neurons that make up our brains, which are constantly transmitting electrical signals to each other and creating information every second of every day. Scientists can capture this electrical activity through surface electrodes (placed outside of the head) or through subdural electrodes (which are surgically implanted) and then analyze them with mathematical algorithms and artificial intelligence. Once analyzed, these electrical signals can then be used to control computers, drive wheelchairs, operate robotic limbs, and provide assistance to people who are unable to do so on their own.

BCIs are groundbreaking in how they help to change lives. Everyday tasks that people with paralysis, spinal cord injury, stroke, or neurological disorders like ALS perform can be extremely difficult. BCI provides a way for these people to interact with the world and communicate with those around them. Several research teams have demonstrated systems that allow people to type messages, navigate a computer screen, and control robotic prosthetic arms by using only their brain activity. One of the most amazing advancements over the last few years has been the development of brain to speech technology. Scientists are developing systems that can take incoming neural signals and translate them into text or synthetic speech. This can potentially give a voice back to someone who has lost their ability to speak. This is a great example of how engineering and medicine can work together to help restore a sense of independence and dignity in those who are unable to do so on their own.

What makes BCIs even more fascinating is that their applications are no longer limited to healthcare. Researchers are exploring their use in gaming, virtual reality, education, and cognitive training. Imagine a future where digital environments respond naturally to your intentions or where learning systems adapt based on your level of attention and engagement. While many of these applications are still being developed, they highlight the immense potential of human–machine interaction.

At the same time, the growth of neurotechnology raises important questions. Since brain signals are deeply personal, issues related to privacy, data security, and ethical use must be carefully considered. As technology becomes more capable of accessing and interpreting neural information, ensuring that it is used responsibly will be just as important as the technology itself.

Brain–Computer Interfaces represent more than a technological achievement; they symbolize the incredible progress that can be made when science, engineering, and human compassion work together. What once seemed impossible is gradually becoming part of reality. As research continues to advance, BCIs have the potential to transform healthcare, improve accessibility, and redefine the way humans interact with technology. The bridge between minds and machines is no longer a distant dream. It is being built today, one neural signal at a time, opening doors to possibilities that were once beyond imagination.

FACULTY ACHIEVEMENTS

Sr. No.	Faculty	Achievement
1	Prof. Suvarna Udgire	Published two book chapters titled "Deep learning in brain tumors" and "Deep learning in Parkinson's disease" in in Deep Learning Assessment of Neurological Imaging (Elsevier)
2	Prof. Arunkumar Ram	Grant of Software Copyright for the work titled "Portable AI-Enabled Meibomian Gland Analyzer"
3	Prof. Geetha Narayanan	Completed a course L&T's Skill Trainers Academy on "Machine Learning using Python Programming"

THE EDITORIAL TEAM

PROF. ARUNKUMAR RAM
Chief Editor