One Week STTP

On

"Smart Health Care Technologies: Applications and Opportunities"

➢ Introduction:

The Gujarat Technological University – School of Engineering and Technology (GTU-SET), in collaboration with the National Institute of Technical Teachers' Training and Research (NITTTR), Bhopal, organized a One Week Short-Term Training Program (STTP) on "Smart Health Care Technologies: Applications and Opportunities" from 20th April to 24th April 2026.

Date: 20 to 24 April, 202
Hub Institute: GTU-School of Engineering and Technology Gujarat Technological University Chandkheda, Ahmedabad, Gujarat
Spoke Institute: GTU-School of Engineering and Technology Gujarat Technological University Chandkheda, Ahmedabad, Gujarat
In Collaboration with: Gujarat Ext. Center, National Institute of Technical Teachers' Training and Research, Bhopal, MoE, GoI.Deemed University (Distinct Category)
Venue: Academic Block-5,Lab no:330
Program Manager: Dr. K. Manickavasagam, Professor, Dept.of Electronics & Electrical engineering, NITTTR, Bhopal
Hub Institute Coordinator: Dr. Komal Borisagar Associate Professor GTU-SET
Spoke Institute Coordinator: Dr. Ritisha bhatt, Gujarat Technological University (GTU)

Day 1: 20th April 2026

Inaugural Function Highlights
The inauguration function commenced at 10:30 AM onwards in the presence of faculty members, organizers, and participants.

1 Introduction about FDP/STTP

Dr. Komal Borisagr introduced the STTP and highlighted the importance and objectives of smart healthcare technologies in the modern era.

2 Welcome Address

Dr. Madhuri Bhavsar, Director, GTU-SET, welcomed all dignitaries, experts, faculty members, and participants, and emphasized the role of technology in healthcare advancement.

3 Introduction to NITTR

Dr. K. Manickavasagam introduced NITTR and discussed its contribution to technical education, faculty development, and research activities.

4 Brief Discussion of Schedule

Dr. Ritisha Bhatt explained the STTP schedule, technical sessions, expert lectures, and expected learning outcomes of the program.

❖ **Sessions**

Session 1 (12:15 PM – 1:45 PM): Foundations of Smart Healthcare Systems

Speaker: Mr. Bharat Tank, Assistant Professor & Deputy Manager, Parul University

Highlights:
Mr. Bharat Tank explained the basic concepts and architecture of smart healthcare systems. The session covered the integration of IoT, sensors, cloud computing, and data analytics in healthcare applications. He also discussed the importance of digital healthcare technologies in improving patient monitoring, diagnosis, and healthcare management.

2. Session 2 (2:00 PM – 3:30 PM): Wearable Technology in Healthcare

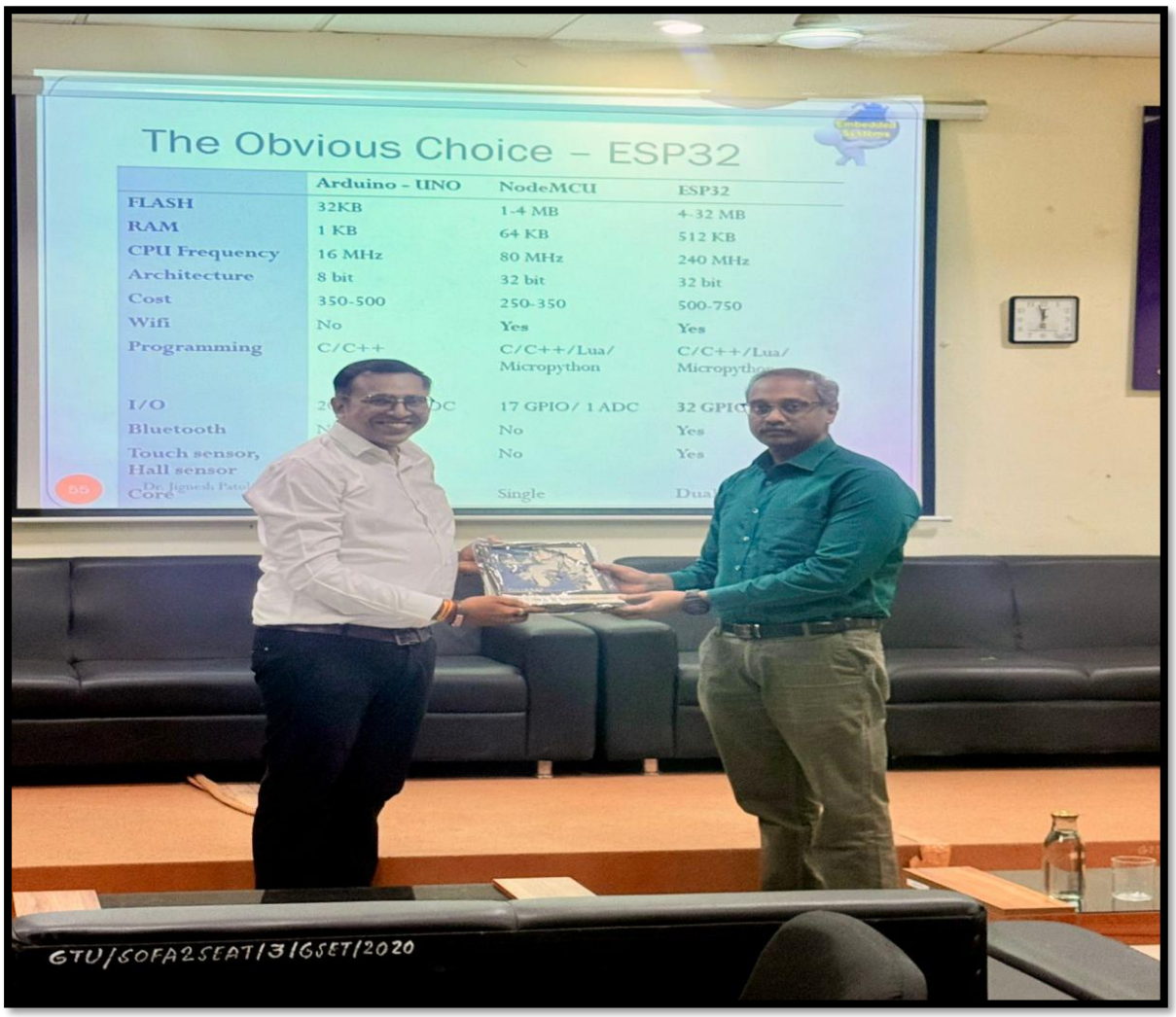
Speaker: Mr. Bharat Tank, Assistant Professor & Deputy Manager, Parul University

Highlights:
The speaker discussed various wearable healthcare devices and their applications in real-time health monitoring. The session highlighted smart watches, fitness trackers, biosensors, and remote patient monitoring systems. Practical applications and future opportunities in wearable healthcare technology were also explained

3. Session 3 (10:30 AM – 12:00 PM): Experimenting with Embedded IoT Devices for Smart Systems

Speaker: Dr. Jignesh Patoliya, Senior Design Verification Engineer, eInfochips (An Arrow Company)

Highlights:
Dr. Jignesh Patoliya demonstrated the use of embedded IoT devices for developing smart healthcare systems. The session focused on sensor interfacing, real-time monitoring, and smart system design using embedded technologies. Participants gained knowledge about practical implementation of IoT-enabled healthcare applications.



4. Session 4 (12:15 PM – 1:45 PM): TinyML in Healthcare

Speaker: Dr. Abhishek Joshi, Assistant Professor, School of Technology

Highlights:
The session introduced TinyML concepts and their applications in healthcare systems. Dr. Joshi explained how machine learning models can run on low-power embedded devices for healthcare monitoring and diagnosis. The session emphasized energy-efficient AI solutions for smart medical applications

5. Session 5 (10:30 AM – 12:00 PM): Large Language Models in Healthcare: From Research to Applications

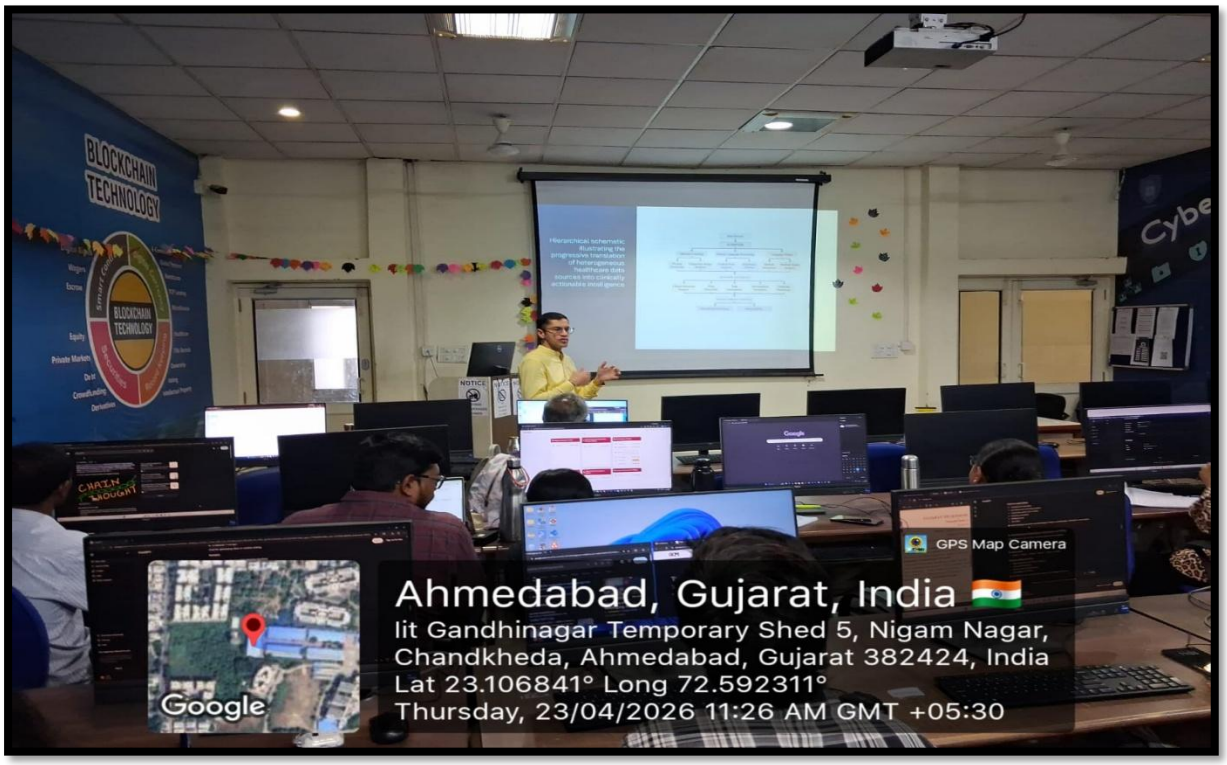
Speaker: Dr. Chintan Bhatt, Assistant Professor, University of Wollongong, GIFT City Campus

Highlights:
Dr. Chintan Bhatt discussed the role of Large Language Models (LLMs) in healthcare research and applications. The session covered AI-based medical assistance, clinical data analysis, healthcare chatbots, and future opportunities of generative AI in medical systems.

6. Session 6 (12:15 PM – 1:45 PM): Large Language Models in Healthcare: From Research to Applications

Speaker: Dr. Chintan Bhatt, Assistant Professor, University of Wollongong, GIFT City Campus

Highlights:
This session provided advanced insights into the implementation of LLMs in healthcare environments. The speaker explained the use of AI models for medical report generation, patient interaction systems, and intelligent healthcare support tools. Challenges and ethical considerations of AI in healthcare were also discussed.



7. Session 7 (2:00 PM – 3:30 PM): Explainable AI in Healthcare Signal Processing

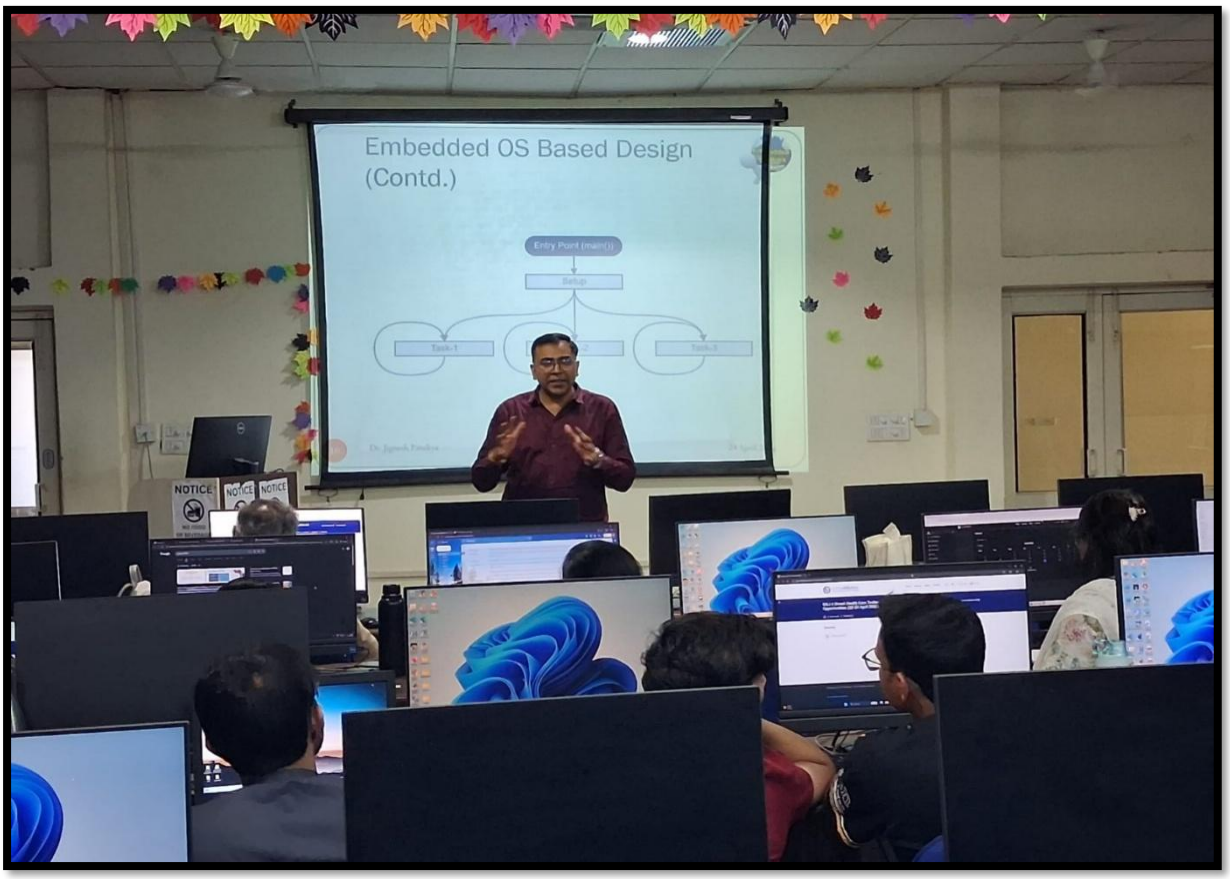
Speaker: Dr. Santosh Kumar Satapathy, Assistant Professor, Department of ICT, School of Technology

Highlights:
The session focused on Explainable AI techniques used in healthcare signal processing. Dr. Satapathy explained the importance of transparent and interpretable AI models in medical diagnosis and decision-making systems. Applications involving ECG, EEG, and biomedical signal analysis were discussed in detail.

8. Session 8 (10:30 AM – 12:00 PM): Enabling Real-Time Healthcare: Synergy of IoT and RTOS

Speaker: Dr. Jignesh Patoliya, Senior Design Verification Engineer, eInfochips (An Arrow Company)

Highlights:
Dr. Patoliya explained the integration of IoT and Real-Time Operating Systems (RTOS) for healthcare applications. The session highlighted real-time patient monitoring, low-latency communication, and embedded healthcare system design. Practical healthcare automation examples were also presented.



9. Session 9 (12:15 PM – 1:45 PM): Compressive Sensing and Sparse Signal Processing in Wearables

Speaker: Dr. Madhukant Patel, Managing Director, Reve Automation LLP

Highlights:
The speaker discussed advanced signal processing techniques used in wearable healthcare devices. The session covered compressive sensing, sparse signal analysis, and efficient biomedical data acquisition methods for wearable systems. Applications in smart healthcare monitoring were also explained.

10. Session 10 (2:00 PM – 3:30 PM): Prototype and Designing

Speaker: Dr. Madhukant Patel, Managing Director, Reve Automation LLP

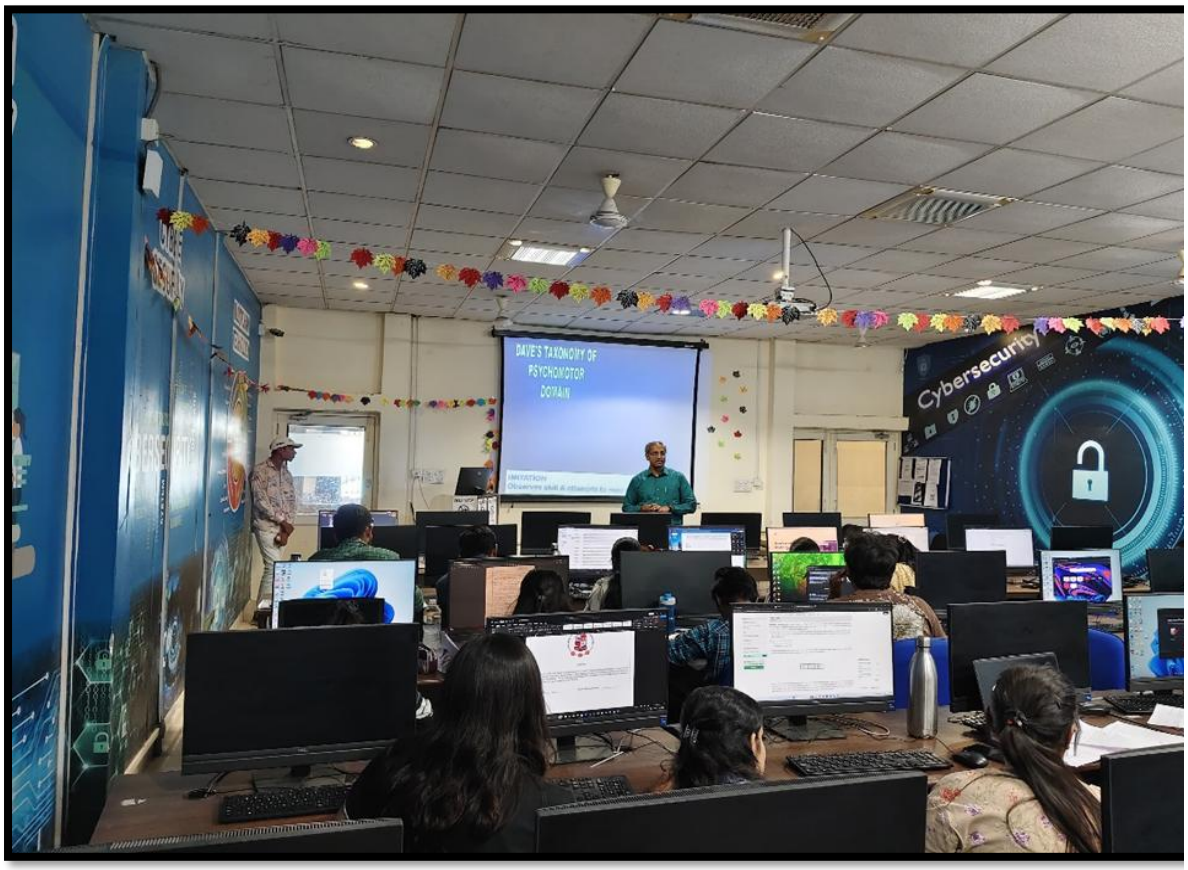
Highlights:
Dr. Patel demonstrated healthcare prototype development and smart device designing methodologies. The session focused on practical aspects of product design, hardware

integration, and healthcare solution development using modern technologies.

11. Session 11/12 (2:00 PM – 3:30 PM): Pedagogy

Speaker: Dr. K. Manickavasagam, Professor, NITTTR Bhopal

Highlights:
The session focused on innovative teaching methodologies and effective pedagogical approaches in technical education. Dr. Manickavasagam discussed outcome-based education, active learning techniques, and modern instructional strategies for engineering and technology programs.



❖ **Industrial Visit to REVE Automation LLP, Paldi, Ahmedabad**

Date: 21st April 2026

As a part of the STTP on "Smart Health Care Technologies: Applications and Opportunities", an industrial visit was organized at REVE Automation LLP, Paldi, Ahmedabad. The visit provided participants with practical exposure to industrial automation systems, embedded technologies, IoT-based solutions, and smart healthcare applications.

Objectives of the Visit
To provide practical understanding of smart healthcare and automation technologies.
To bridge the gap between academic learning and industrial practices.
To expose participants to real-time implementation of IoT and embedded systems in healthcare applications.

Highlights of the Industrial Visit
During the visit, participants explored various automation and embedded system setups developed by REVE Automation LLP. Industry experts demonstrated the working principles of smart devices, sensor integration, embedded controllers, and IoT-enabled monitoring systems.

The participants also gained knowledge about:

- Industrial automation techniques
- Healthcare monitoring solutions
- Sensor interfacing and embedded hardware

- Real-time data acquisition systems
- Prototype development and product designing

Interactive discussions were conducted with industry professionals regarding current industry trends, challenges, and future opportunities in smart healthcare technologies and automation systems. The visit enhanced participants' practical knowledge and provided valuable industrial exposure.

Outcome of the Visit

The industrial visit helped participants understand the practical implementation of smart healthcare technologies and strengthened their technical knowledge regarding industrial applications of IoT, embedded systems, and automation. The visit also encouraged participants to explore innovation and research opportunities in healthcare technology domains.

Valedictory Ceremony Highlights

The STTP concluded with a valedictory ceremony reflecting the successful completion of the program and the valuable learning experience gained by the participants.

Valedictory Address: Dr. Madhuri Bhavsar, Director, GTU-SET
Appreciated the active participation of attendees and emphasized the importance of smart healthcare technologies, AI, IoT, and embedded systems in future healthcare solutions.

Expert Remarks: Dr. K. Manickavasagam, Professor, NITTTR Bhopal
Highlighted the significance of continuous learning, interdisciplinary research, and industry-academia collaboration in emerging healthcare technologies.

Vote of Thanks: Dr Komal Borisagar, Associate professor, GTU-SET
Expressed gratitude to all expert speakers, organizers, participants, and supporting staff for contributing to the successful organization of the STTP. The session concluded with certificate distribution and a group photograph.

Participants' Overview

The Short-Term Training Program (STTP) on "Smart Health Care Technologies: Applications and Opportunities" witnessed enthusiastic participation from faculty members, research scholars, students, and industry professionals.

Participants from various engineering and technology backgrounds actively attended the technical sessions, hands-on activities, and industrial visit. The program created an interactive platform for knowledge sharing, practical learning, and discussion on recent advancements in smart healthcare technologies.

The diverse participation contributed to a collaborative learning environment and encouraged interdisciplinary interaction among academia and industry experts throughout