NEW HORIZON COLLEGE OF ENGINEERING
Autonomous College, Affiliated to VTU | Approved by AICTE New Delhi & UGC
Accredited by NAAC with 'A' Grade & Accredited by NBA

Department of Artificial Intelligence and Machine Learning

Tel: 080 66297777, Extn: 3008 hod_aiml@newhorizonindia.edu

RECORD

RECORD ID: NHCE/AIML/CIR/EXTA/2026-2027/001

RECORD TITLE: Expert Talk on **RTOS and Real Time Systems**

ACTIVITY / EVENT / PROCESS: EVENT

DATE: 11th November 2026

TIME*:* 1:30 pm to 3.30 pm

VENUE / LOCATION C block -524

DEPARTMENT : Artificial Intelligence and Machine Learning

RECORD CATEGORY: Event

PREPARED BY: Prof. SriHarshini DK

VERIFIED BY: Dr. Vandana CP

APPROVED BY *(As applicable)*:

RELATED DOCUMENTS:

- Circular
- Notesheet
- Report

1. OBJECTIVE

To provide an understanding of Real-Time Systems and their significance in computing applications that interact with external physical environments under strict, predefined time constraints. The session aims to explain the concepts of logical correctness and temporal determinism, highlighting the importance of producing correct results within specified deadlines. It also focuses on introducing Worst Case Execution Time (WCET), response-time analysis, task scheduling, and Real-Time Operating Systems (RTOS), enabling students to understand how predictable and time-bound execution is achieved in real-time computing systems.

2. DESCRIPTION / DETAILS OF ACTIVITY

The Department of Artificial Intelligence and Machine Learning conducted a technical session on **"Real-Time Systems and Real-Time Operating Systems (RTOS)"** to provide students with an understanding of real-time computing concepts and their practical significance in embedded and time-critical applications. The session introduced the fundamentals of Real-Time Systems, explaining the importance

of logical correctness and temporal determinism in ensuring that tasks produce accurate results within predefined deadlines.

The presentation covered the concepts of Worst Case Execution Time (WCET), Control Flow Graph (CFG), Loop Bound Analysis and Worst-Case Response-Time Analysis. It explained how task execution time, blocking time and higher-priority task interference influence the timely completion of processes. The session also discussed task-priority assignment techniques, including Rate Monotonic Scheduling (RMS) and Earliest Deadline First (EDF), along with priority inversion and its solutions through Priority Inheritance Protocol (PIP) and Immediate Priority Ceiling Protocol (IPCP).

Further, the evolution of Real-Time Operating Systems was explained through Bare Metal Super Loops, Interrupt Service Routines (ISR), Cyclic Executives and Preemptive RTOS architectures. Historical examples, including the Apollo Guidance Computer, were discussed to demonstrate the importance of priority-based scheduling in critical applications. The presentation also highlighted modern processor features that support predictable execution and efficient task management. The session helped students connect theoretical concepts with practical applications of real-time computing and understand the importance of deterministic system behaviour.

3. PARTICIPANT / STAKEHOLDER DETAILS *(As applicable)*

Category	Details
Participants	3rd Semester Students -42
Departments Involved	Artificial Intelligence and Machine Learning
Resource Persons	Mr. GuruSaran
Coordinators	Prof. SriHarshini DK Prof. Saranya Devi

4. RECORD DETAILS

Parameter	Details
Activity Name	Expert Talk
Date	11th November 2026
Duration	2 Hours
Responsible Coordinator	Prof. SriHarshini DK Prof. Saranaya Devi

5. EVIDENCE ATTACHED

Supporting Evidence:

✓ Photographs
✓ Attendance Sheets

✓ Circulars
✓ Feedback

6. EVIDENCE INDEX *(Recommended)*

Sl. No.	Evidence Type	File Name / Reference	Remarks
1	Photograph	Annexure I	Event photographs
2	Attendance	Annexure II	Student attendance

7. OBSERVATIONS / OUTCOMES

- Improved awareness of Machine Learning applications in the semiconductor and storage industries.
- Better understanding of the role of Machine Learning in semiconductor manufacturing, defect detection, quality control, and process optimization.
- Increased awareness of emerging technologies, industrial innovations, and real-world applications of Machine Learning.
- Enhanced understanding of industry requirements, technological challenges, and future developments.
- Encouraged students to explore research opportunities and career prospects in the semiconductor and storage domains.
- Bridged the gap between academic knowledge and practical industry applications.

8. VERIFICATION DETAILS

Verification Parameter	Details
Verified By	Dr. Vandana CP
Verification Date	
Verification Remarks	

9. COMPLIANCE REQUIREMENTS

Mandatory Requirements:

✓ The event record shall include the title, date, venue, and department details.

✓ Attendance records of participating students shall be maintained.

✓ Photographs of the expert talk shall be properly attached as supporting evidence.

✓ Details of the resource person, including name and designation, shall be documented.

✓ Event proceedings and key discussion points shall be maintained for institutional records.

✓ All supporting documents and evidence shall be properly organized and preserved for future reference.

10. STORAGE & RECORD RETENTION

Storage Location:

- Department Repository
- IQAC Repository
- ERP / Cloud Storage
- Administrative Section

Retention Period:

Access Control:

11. DIGITAL IMPLEMENTATION *(Recommended)*

Possible Digital Modes:

- ERP Entry
- Google Form Submission
- Cloud Repository
- QR-Based Evidence Upload
- Automated Documentation Platform

Suggested Features:

- Evidence Upload
- Auto Record ID Generation
- Timestamping
- Search & Retrieval
- PDF Export
- Audit Trail

12. COMMON OBSERVATIONS / ERRORS *(Recommended)*

Common Issue	Suggested Correction
Missing evidence	Ensure mandatory uploads
Unverified records	Complete verification process
Incomplete descriptions	Use structured reporting
Missing references	Maintain traceability

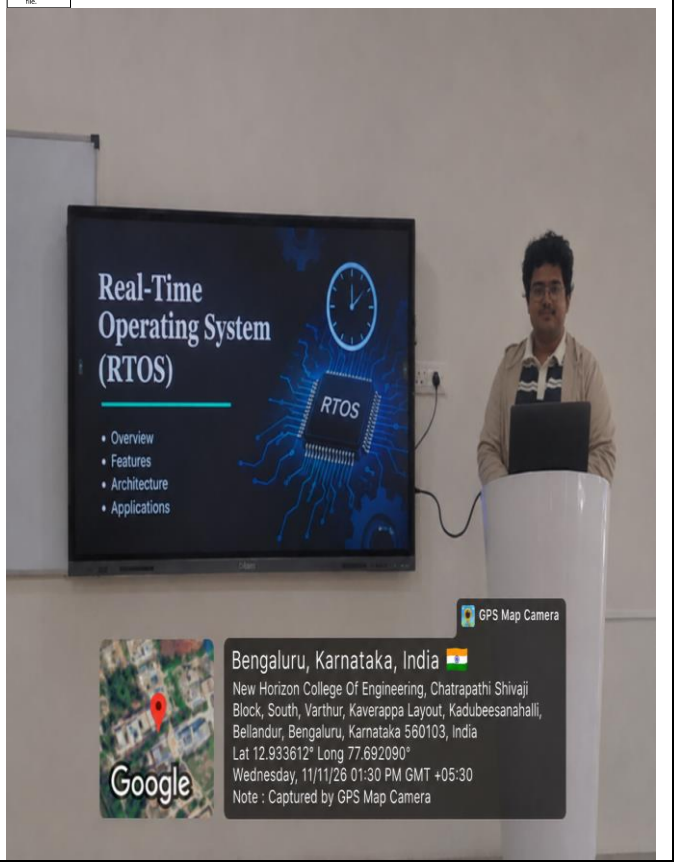
13. ANNEXURES *(As applicable)*

- Annexure I – Photographs
- Annexure II – Attendance
- Annexure III – Supporting Documents

APPROVALS

Role	Name	Signature	Date
Prepared By	SriHarshini D K		
Verified By	Dr. Vandana CP		
Approved By *(As applicable)*			

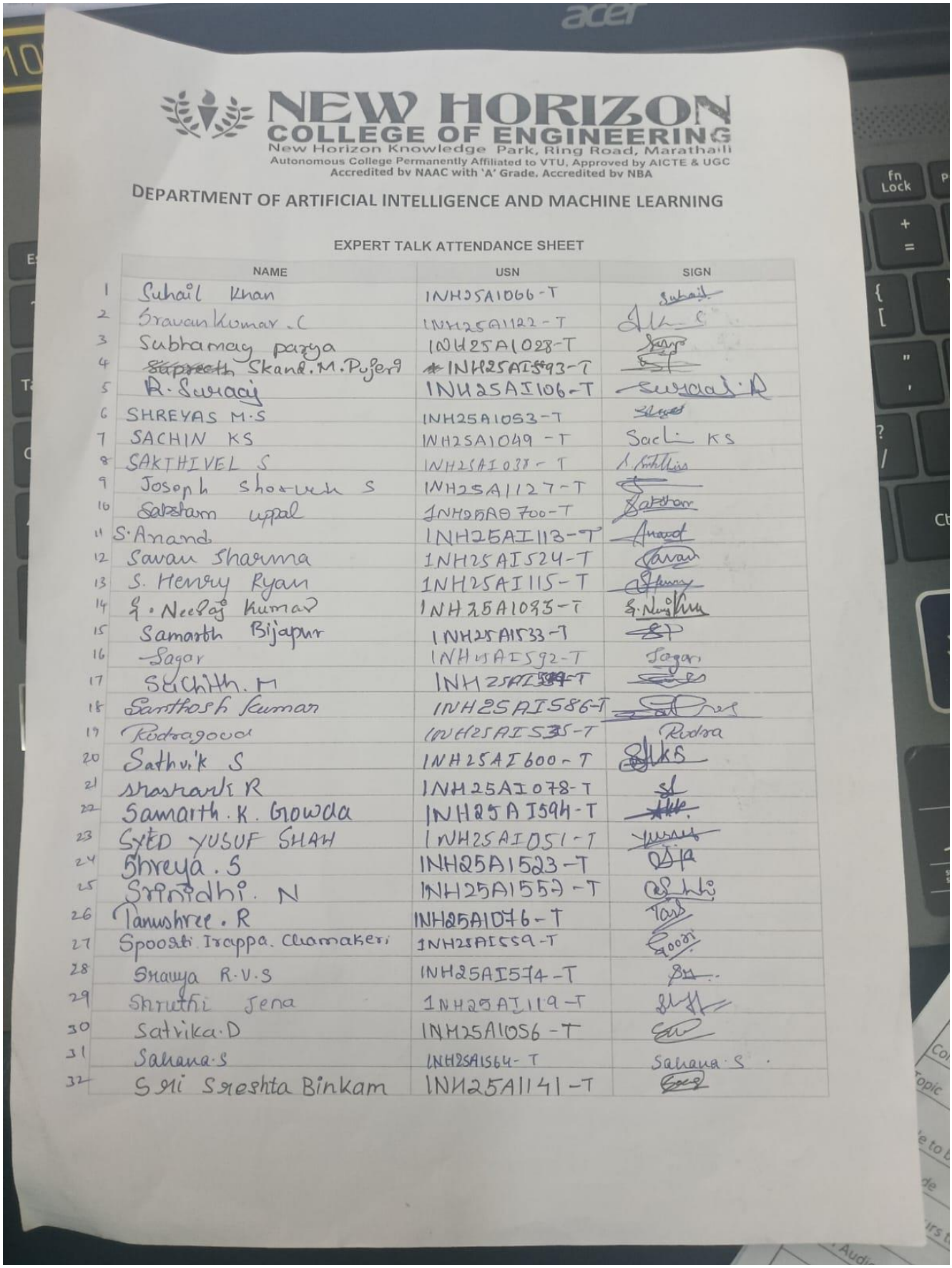
- Annexure I – Photographs

Inauguration of the session	Delivery of the session
	

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Delivery of the session	Group Photograph of the session
	

- Annexure II – Attendance



NEW HORIZON
COLLEGE OF ENGINEERING
New Horizon Knowledge Park, Ring Road, Marathalli
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

EXPERT TALK ATTENDANCE SHEET

	NAME	USN	SIGN
1	Suhail Khan	1NH25A1066-T	Suhail
2	Sravan Kumar .C	1NH25A1122-T	
3	Subramay pazya	1NH25A1028-T	
4	~~Sapreeth~~ Skand.M.Pujeri	1NH25AI593-T	
5	R. Suraaj	1NH25AI106-T	Suraaj.R
6	SHREYAS M.S	1NH25A1053-T	
7	SACHIN KS	1NH25A1049-T	Sachin KS
8	SAKTHIVEL S	1NH25AI038-T	
9	Joseph Shoureh S	1NH25A1127-T	
10	Sabsham uppal	1NH25AE700-T	
11	S.Anand	1NH25AI113-T	Anand
12	Savan Sharma	1NH25AI524-T	Savan
13	S. Henry Ryan	1NH25AI115-T	
14	S. Neeraj kumar	1NH25A1093-T	S. Neeraj
15	Samarth Bijapur	1NH25AI533-T	
16	Sagar	1NH25AI592-T	Sagar
17	SUCHITH.M	1NH25AI~~594~~-T	
18	Santhosh Kumar	1NH25AI586-T	
19	Rudragouda	1NH25AI5~~35~~-T	Rudra
20	Sathvik S	1NH25AI600-T	
21	Shashank R	1NH25AI078-T	
22	Samarth.K.Gowda	1NH25AI594-T	
23	SYED YUSUF SHAH	1NH25AI051-T	
24	Shreya.S	1NH25A1523-T	
25	Sripadhi. N	1NH25A1557-T	
26	Tanushree.R	1NH25A1076-T	Tanu
27	Spoorti Irappa Chamakeri	1NH25AI559-T	Spoorti
28	Sravya R.V.S	1NH25AI574-T	
29	Shruthi Jena	1NH25AI119-T	
30	Satvika.D	1NH25A1056-T	
31	Sahana.S	1NH25AI564-T	Sahana.S
32	Sri Sreshta Binkam	1NH25A1141-T	

32	Spoorti	1NH25AI555-T	Spoorti
33	Thanmayi. M	1NH25AI820-T	Thanmayi. M
34	Sandra P	1NH25AI169-T	Sandra P
35	Sanjana	1NH25AI577-T	Sanjana
36	Samiya Anjum.S	1NH25AI142-T	Samiya Anjum.S
37	SaloniSanjay.F	1NH25AI556-T	SaloniSanjay.F
38	Sri Sreshta Binkam	1NH25AI141-T	Sri Sreshta Binkam
39	Satvika D	1NH25AI564-T	Satvika D
40	Sahana.S	1NH25AI564-T	Sahana.S
41	Shrestha Darak	1NH25AI595-T	Shrestha Darak
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Expert talk Coordinator

16/4/24

HOD

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- Annexure III – Supporting Documents

