Goa University

Electronics Discipline, School Of Physical & Applied Sciences

Report on Two Day Workshop On "Deep Learning and Hardware Integration Using MATLAB"

1. Title of the Event/Activity/program	Deep Learning and Hardware Integration Using MATLAB
2. Date and Time	05th & 06th October 2023 10.00 am to 5.00 pm
3. Mode of conduct (Physical/Online)	Physical
4. School/ Directorate/ Section	Electronics Discipline, School Of Physical & Applied Sciences
5. Collaborating Agency/School/Directorate	-
6. Detail of the Resource Person (Brief biodata)	Mr. Kunal Khandelwal; Application Engineer – MathWorks at Design Tech System Pvt Ltd. He has worked in academia as Assistant Professor and has an overall experience of 10 years. Mr. Kunal has earned his Master's degree in Electronics & Telecommunication (VLSI & Embedded) from Savitribai Phule Pune University, Pune and is currently pursing PhD. His interest is in Model Based Design and Artificial Intelligence.
7. Number of Faculty attended/participated	07
8. Number of Student attended / participated	28
9. No. of external students/faculty/other participants	01

10. The objectives of the Program/activity/event	Matlab is a high-level programming and development platform with an interactive environment mainly used for numeric computation, programming, and visualization. Along with the basic functions, MATLAB also provides support for interfacing with other programming languages in C, C++, Fortran, Java, Python, etc. One can analyze the data, create models and applications, and also develop algorithms. It is capable of dealing with deep learning and ML approaches and also provides hardware interfaces & support. Our students widely use this platform and its toolboxes for regular practical's. The advanced versions of the MATLAB and the tools are used for Part II projects and by the research scholars. This workshop was organized for students and faculties to explore and understand the latest advancements in MATLAB and hardware interface and to have hands-on experience.
11. Description of the Program/activity/event	**Session I:** Introduction to MATLAB Fundamentals and GUI Development • Working with the MATLAB user interface • Working with MATLAB Variables and Expressions, Matrices and Arrays, Writing Script, Function Files • Branching and Looping Functions • Plotting and Visualization • Building GUI In MATLAB **Session II:** Interoperability between Python and MATLAB • Linking MATLAB and Python • Call MATLAB from Python • Call Python from MATLAB • Air Quality Prediction **Session III:** Deep Learning using MATLAB • What is Deep Learning • Understanding Deep Learning Workflow • Interactively create and train deep learning networks using Deep Network Designer App • Create Image Classification Network from scratch • Using Transfer Learning Approach to classify a new collection of images **Session IV:** Deep Learning and Hardware Integration • Hardware Integration with MATLAB and SIMULINK • Low-cost hardware support • Installing hardware support packages • Demos ○ Arduino and Raspberry pi ○ Identify Objects within video using Resnet Model
12. Benefit/Key outcomes	Students got opportunity to interact with the expert from

of the Program/activity/event	Mathworks and understand the basics & advancements of MATLAB. They studied: • MATLAB Fundamentals and GUI Development • Interoperability between Python and MATLAB • Deep Learning using MATLAB • Deep Learning and Hardware Integration
13. Enclosures with report	Brochure Geo-tag photos Attendance of students/faculty/external participants

Dr. Aniketh Gaonkar
Asst. Professor, SPAS
Coordinator

13/10/2023
Prof. Kaustubh R.S. Priolkar
Dean, SPAS

DEAN
School of Physical and Applied Sciences
Goa University
Seal

Date: 13/10/2023

GOA UNIVERSITY

SCHOOL OF PHYSICAL AND APPLIED SCIENCES

ELECTRONICS PROGRAMME

Organizes
Two Day Workshop On

"Deep Learning and Hardware Integration Using MATLAB"

on
05th & 06th October 2023

Resource Person

Mr. Kunal Khandelwal

Mr. Kunal Khandelwal is an Application Engineer – MathWorks at Design Tech System Pvt Ltd. He has worked in academia as Assistant Professor and has an overall experience of 10 years. Mr. Kunal has earned his Master's degree in Electronics & Telecommunication (VLSI & Embedded) from Savitribai Phule Pune University, Pune and is currently pursing PhD. His interest is in Model Based Design and Artificial Intelligence.

Important Information

Time:	10:00 am to 5:00 pm
Target Audience:	Faculty, Research Scholars & Students
Registration Fee:	Free
Number of Participants:	40 (First Come First Serve)
Venue:	Seminar Hall, Electronics Building, SPAS
Mode of Conduct:	Offline
Registration Link	https://forms.gle/5cQK4Vj9mTtooSF48

ORGANISING COMMITTEE

Prof. Kaustubh . R. S. Priolkar
Dean, SPAS

CONVENER

Prof. Rajendra S. Gad
Senior Professor & Vice-Dean, SPAS

Prof. Jivan S. Parab
Professor & PD, Electronics

CO-ORDINATOR

Dr. Aniketh A. Gaonkar
Assistant Professor, SPAS

MEMBERS

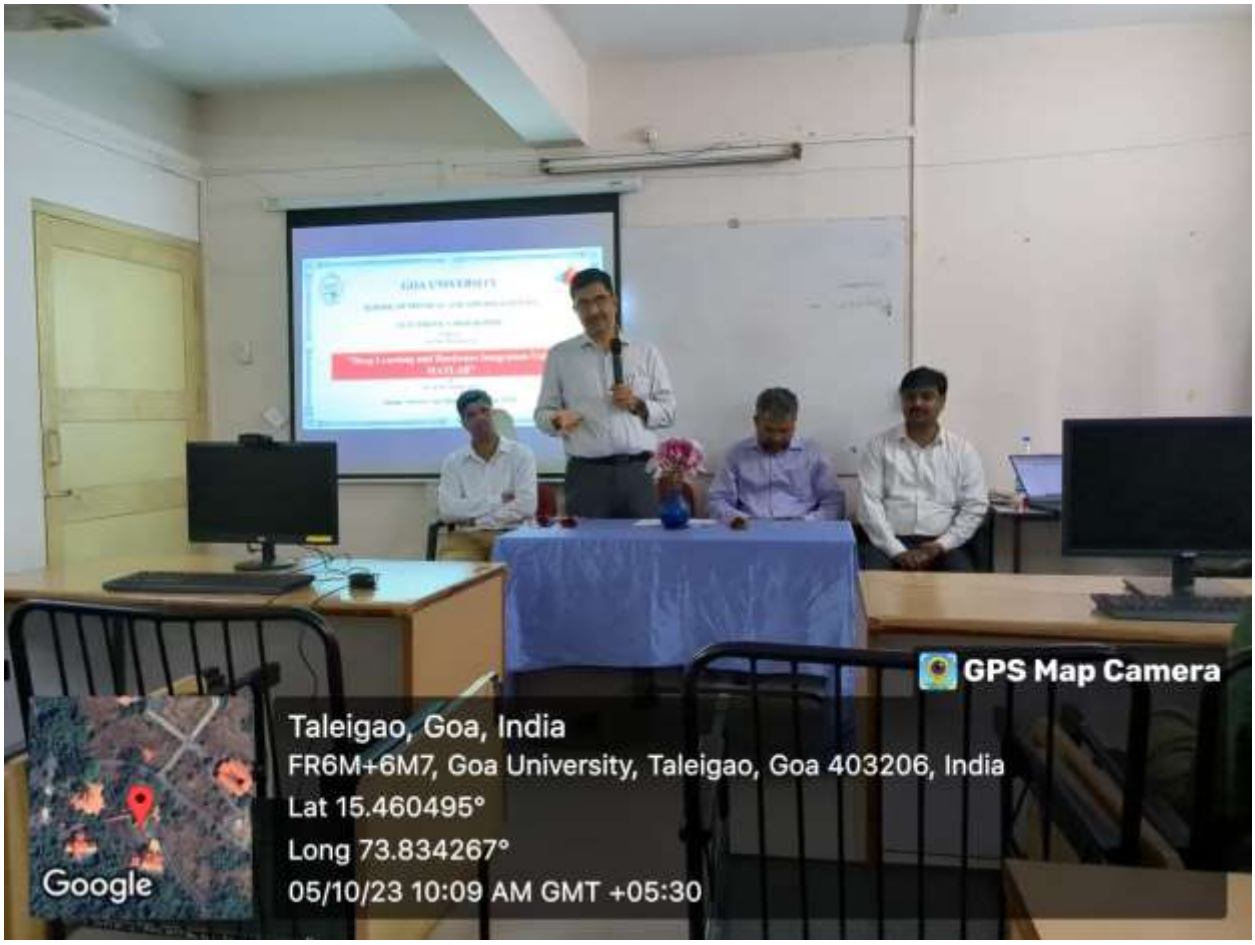
Dr. Narayan T. Vetrekar
Assistant Professor, SPAS

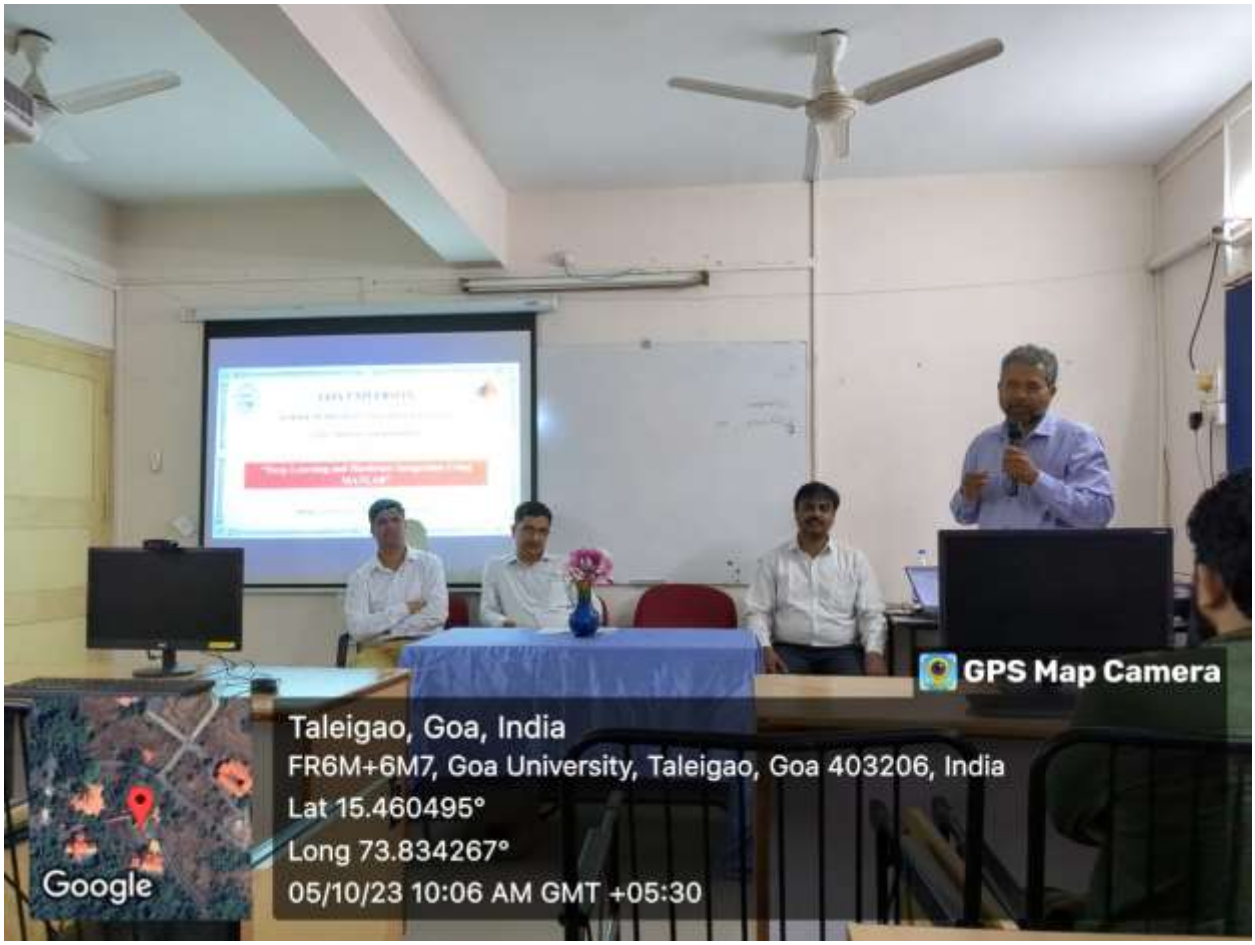
Dr. Marlon D. Sequeira
Assistant Professor, SPAS

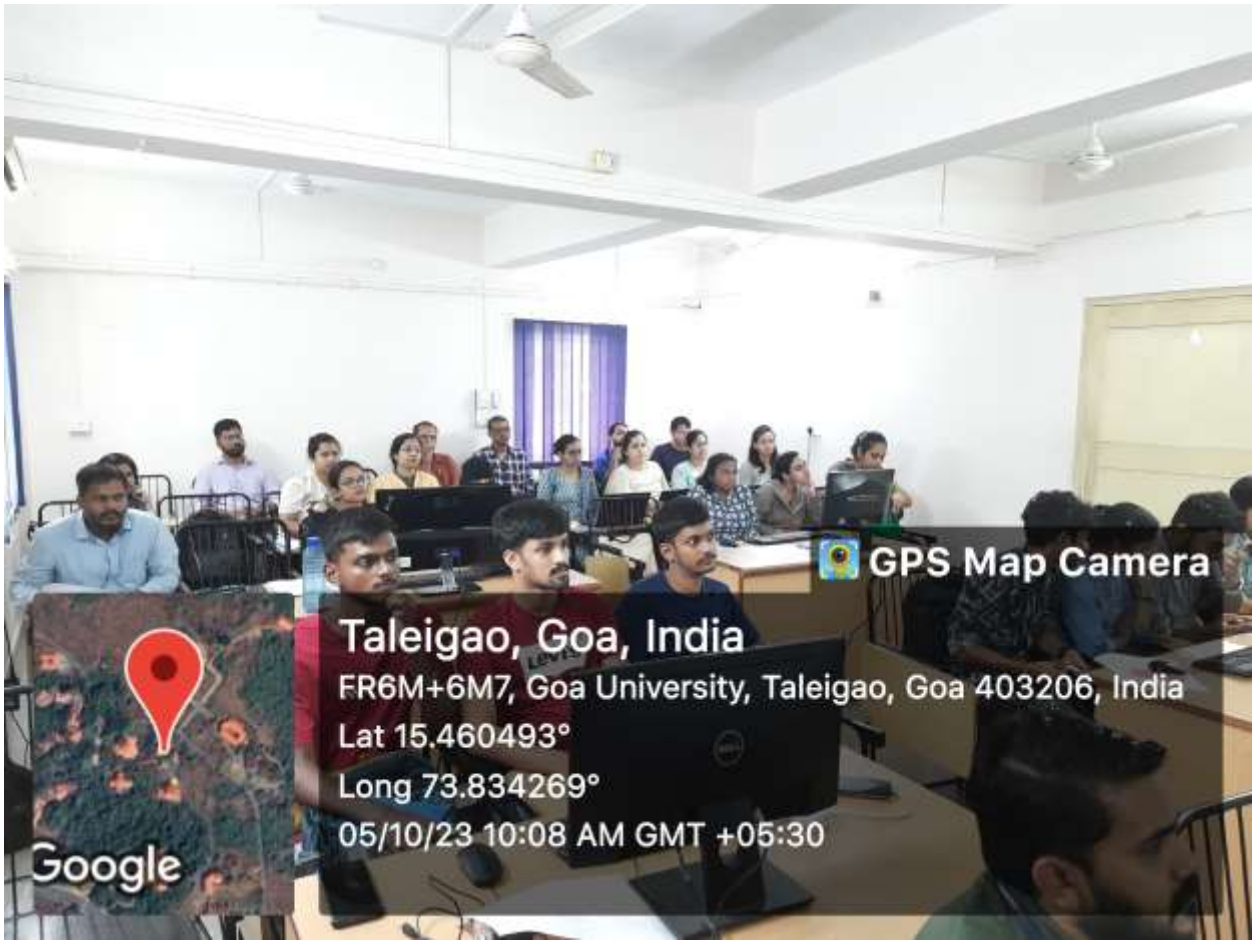
Dr. Sandeep Gawali
Assistant Professor, SPAS

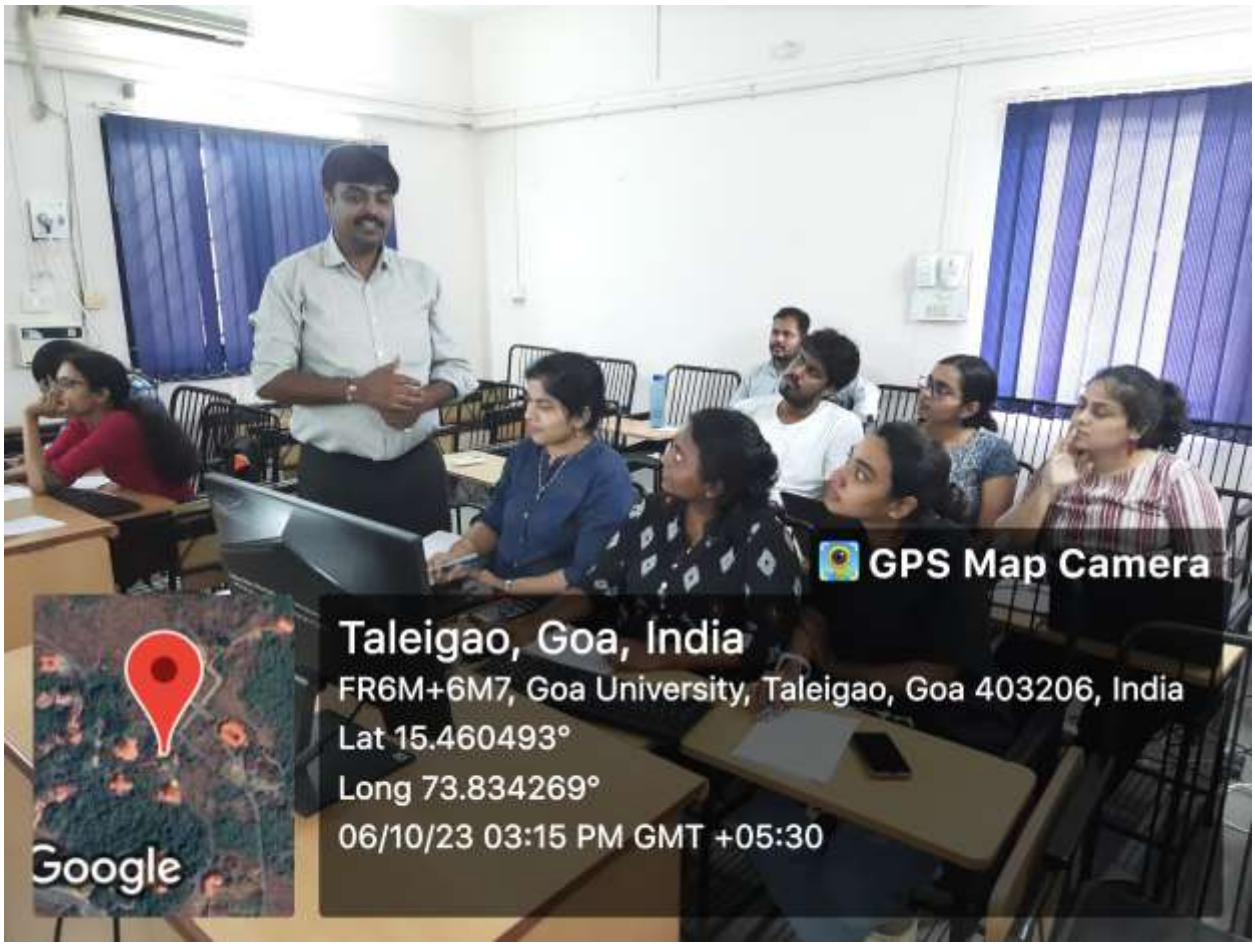
NOTE

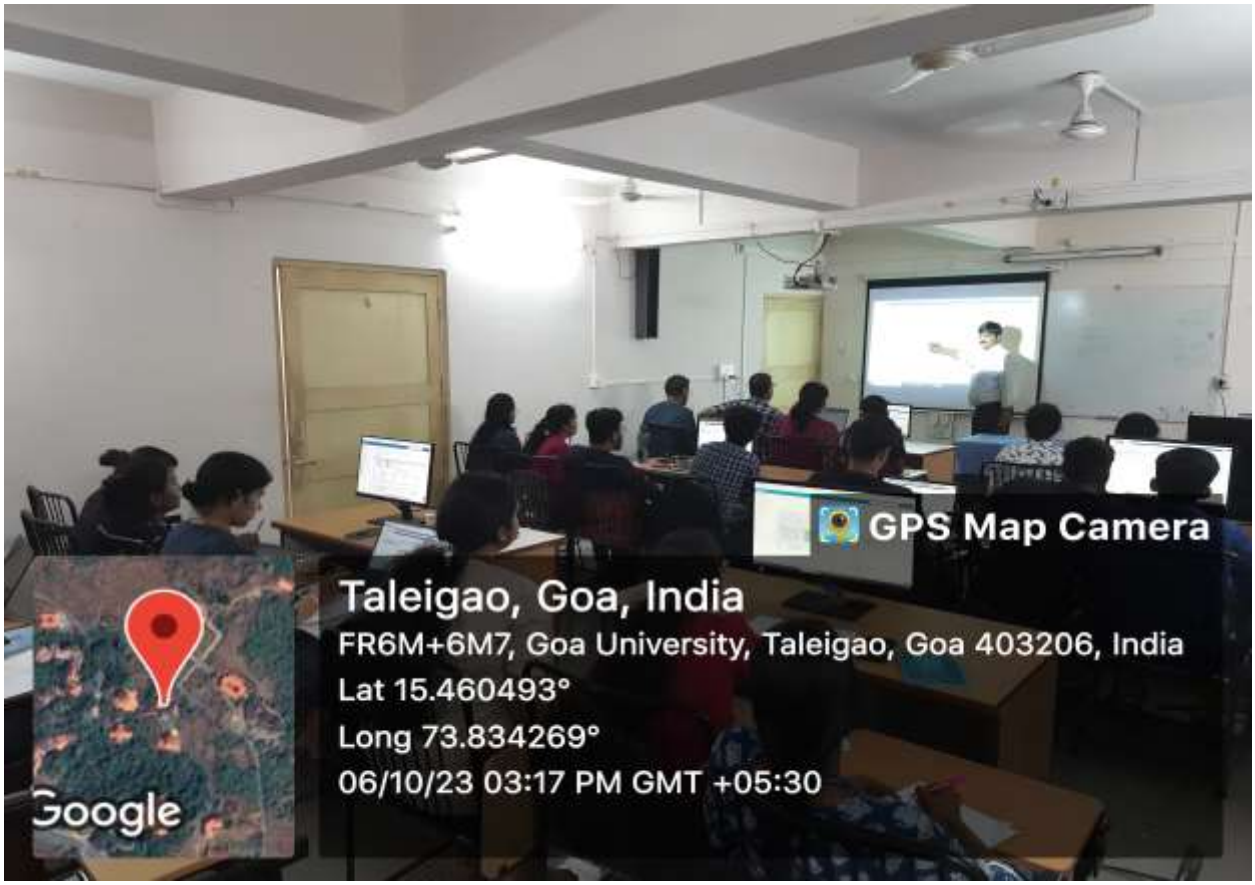
Participants should preferably get their own laptops with MATLAB and Python 3.10 installed.

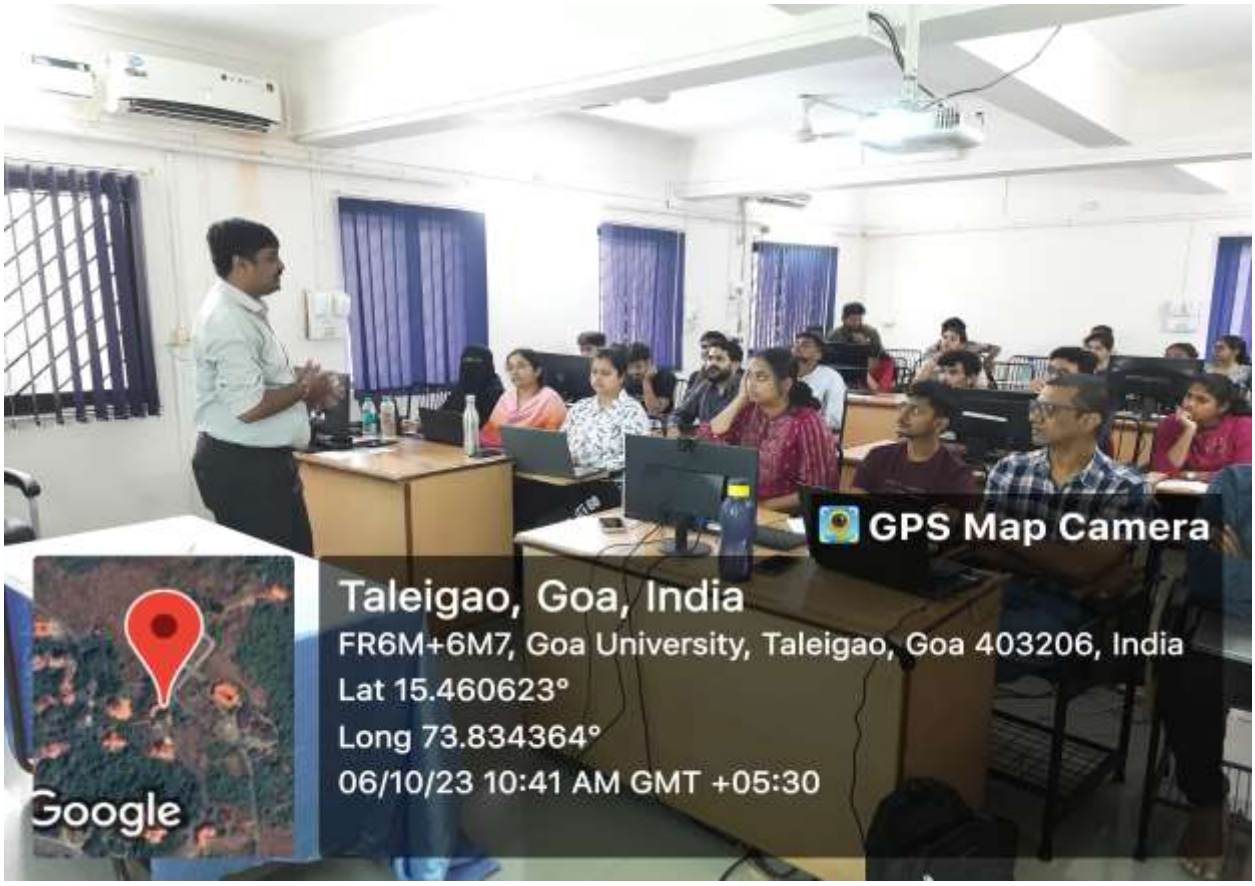

GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460495°
Long 73.834267°
05/10/23 10:09 AM GMT +05:30
Google

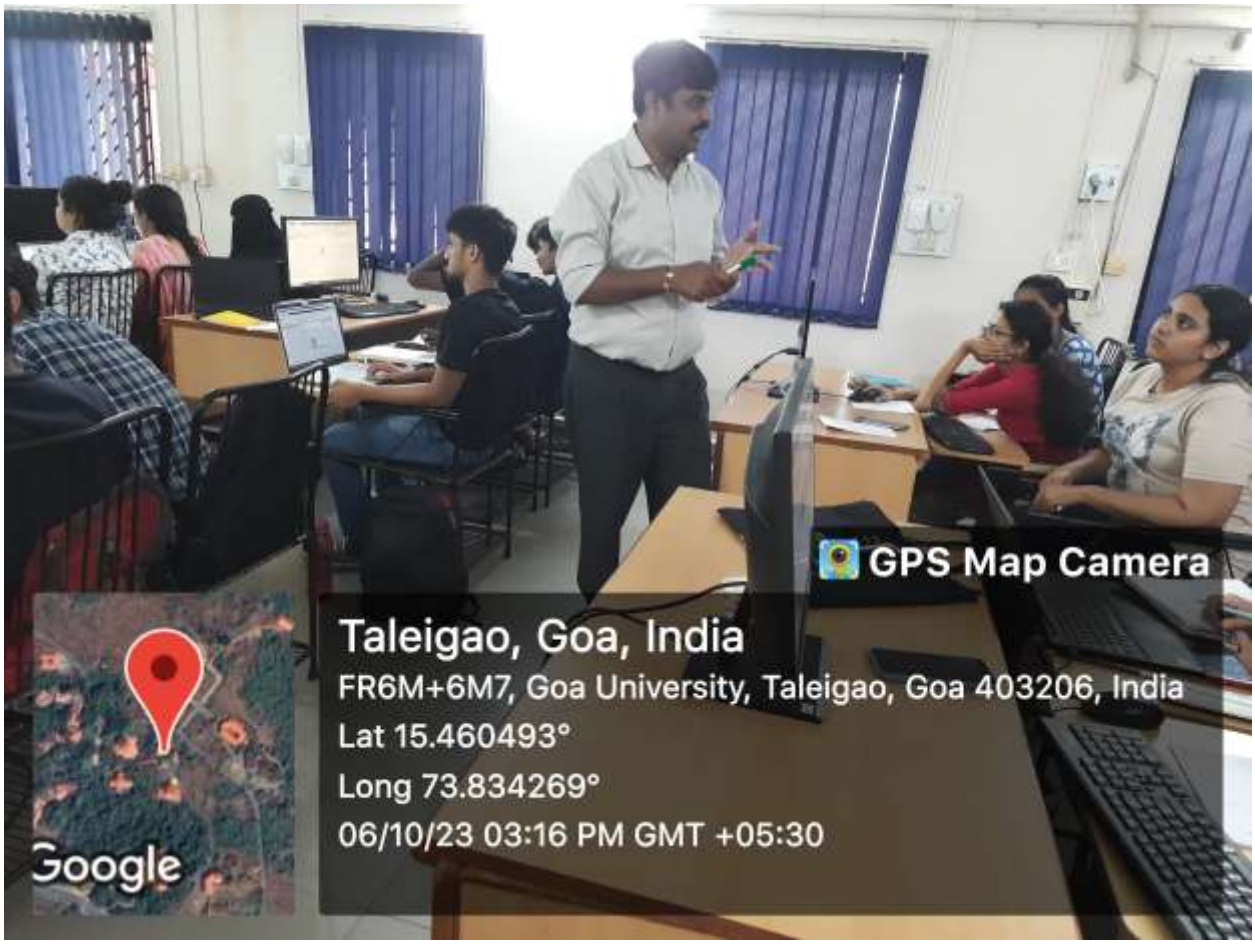

GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460495°
Long 73.834267°
05/10/23 10:06 AM GMT +05:30
Google


GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460493°
Long 73.834269°
05/10/23 10:08 AM GMT +05:30
Google


GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460493°
Long 73.834269°
06/10/23 03:15 PM GMT +05:30
Google


GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460493°
Long 73.834269°
06/10/23 03:17 PM GMT +05:30
Google


GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460623°
Long 73.834364°
06/10/23 10:41 AM GMT +05:30
Google


GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460493°
Long 73.834269°
06/10/23 03:16 PM GMT +05:30
Google


SCHOOL OF PHYSICAL AND APPLIED SCIENCES
ELECTRONICS
GPS Map Camera
Taleigao, Goa, India
FR6M+6M7, Goa University, Taleigao, Goa 403206, India
Lat 15.460546°
Long 73.83429°
06/10/23 05:13 PM GMT +05:30
Google

GOA UNIVERSITY

SCHOOL OF PHYSICAL AND APPLIED SCIENCES
ELECTRONICS PROGRAMME

Two Day Workshop On

"Deep Learning and Hardware Integration Using MATLAB"

05th & 06th October 2023

ATTENDANCE SHEET

Sr. No	Full Name	University School / Affiliated College	5th Oct 2023		6th Oct 2023		Certificate
			Session I	Session II	Session III	Session IV	
1	Ms. Krishna Patel	SPAS					
2	Marissa lourdes de Ataide	SPAS					
3	Bevan Mascarenhas	SPAS					
4	Sameer Patil	SPAS					
5	Devang Devidas Gawade	SPAS					
6	Samrudhi Shyamsundar Sawant	SPAS					

Certificate

7	Sai Gaude	SPAS					
8 .	Avani Anil Kharde	SPAS	A	A	A	A	N. A
9	Ramira Mascarenhas	SPAS					
10	Shara Aga	SPAS					
11	Deepak Gurikar	SPAS					
12	Nikita Godara	SPAS					
13	Omkar Shetgaonkar	SPAS					
14	Madhusudan Lanjewar	SPAS					
15	Atul Gaunkar	SPAS					
16	Gauresh Naik	SPAS					
17 .	Savita Nageshker	SPAS			A	A	N. A
18	Viola Fernandes	SPAS					
19	Honawale Tejal Sambhaji	SPAS					
20	Muskan khan	SPAS					

							Certificate
21	Xavier Coelho	SPAS			A		
22	Dr. Sandeep Babu Gawali	SPAS					
23	Delinka Genoveva Rosa	SPAS					
24	Dioniz Carvalho	SPAS					
25	Dr. Marlon Sequeira	SPAS					
26	Sakshi Sharma	SBSB					
27	Dr. Ingrid Anne P. Nazareth	Goa University					
28	Navin Dyaneshwar Matonkar	SPAS					
29	Amey Naik	Goa Engineering College					
30	Vishal Jagtap	SPAS	A	A	A	A	NA
31	Tejas t. gaonkar	SPAS	A	A	A	A	NA
32	Aayushi Anant Ghadi	SBSB					
33	Saloni Mandrekar	SPAS		A	A	A	NA
34	Dr. Minal Shiredkar	SBSB		A	A	A	NA

Certificate

35	Pragati Zaravkar	SBSB	Zaravkar	Zaravkar	Zaravkar	Zaravkar	Zaravkar
36	Allan Silveira	SPAS					
37	Dr. Narayan Vetrekar	SPAS					
38	Dr. Aniketh Zaravkar	SPAS					