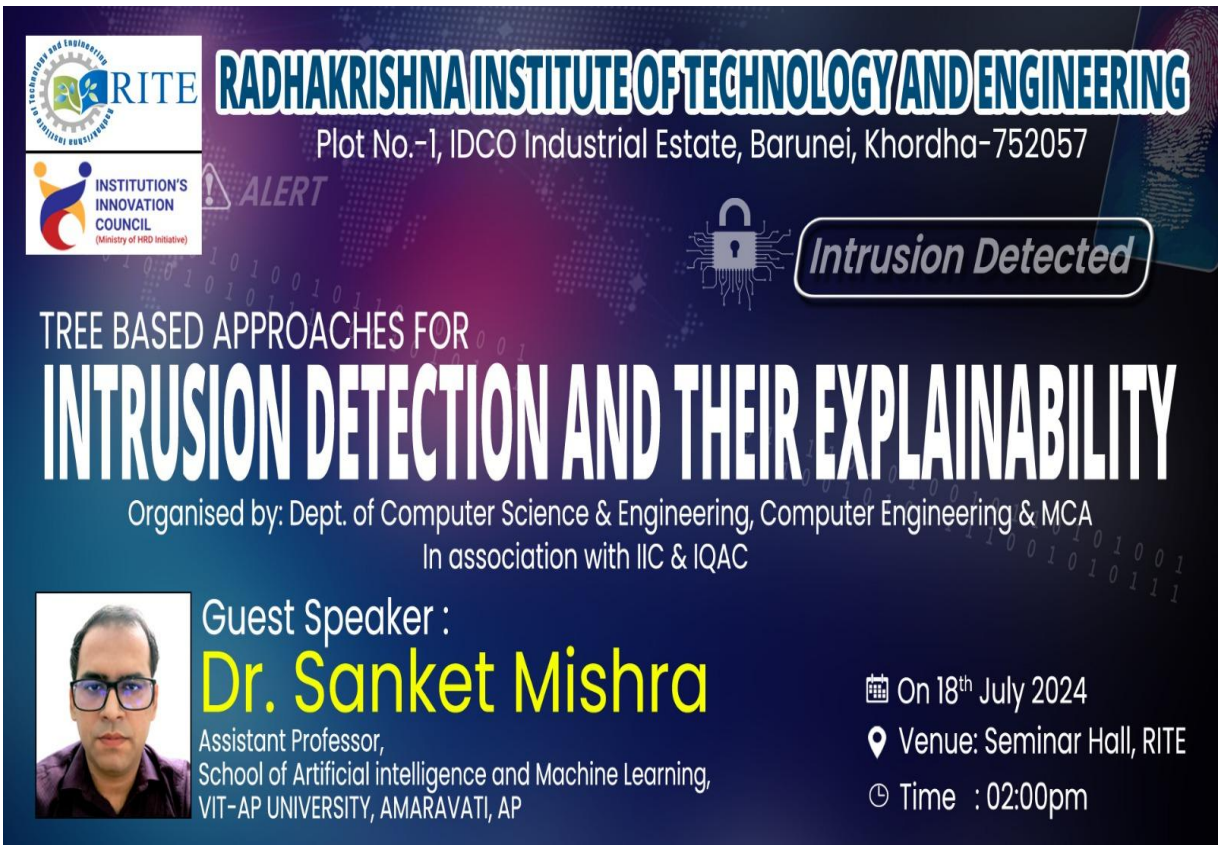
A
REPORT
On
One Day Seminar on

"Tree Based Approaches for Intrusion Detection and their Explainability"

(Organized by the Department of CSE & MCA in association with IIC & IQAC-RITE)



Date: 18-07-2024

Prepared by:
Prof. Alok Nath (Department of Computer Science & Engineering)
Prof. Anamika Nandan (Department of Computer Science & Engineering)

A Brief Description of one day seminar on "Tree Based Approaches for Intrusion Detection and their Explainability"

Date: 18-07-2024

Venue: Seminar Hall, RITE

Organized by: Department of CSE & MCA in association with IIC & IQAC-RITE

Keynote Speaker: Dr. Sanket Mishra, Assistant Professor, School of Artificial Intelligence & Machine Learning, VIT-AP University, Amaravati, AP

Coordinators: Prof. Alok Nath & Prof. Anamika Nandan

Participants: B.Tech, MBA & MCA students

Seminar Agenda:

2:20PM-2:30PM Host welcome and introduction

- Host of the seminar introduced herself and welcomed to all attendees.
- Host invited the Guest Speaker of the seminar, the honorable Principal and the Dean Academics to the dice.

2:30PM-2:45PM Address by the Principal and the Dean Academics

- Honorable Principal Dr. Subash Ranjan Kabat and Dean Academics Dr. Chandrabhanu Malla, addressed the honorable Guest Speaker of the seminar and to all attendees.

2:45PM-4:15PM Guest Speaker interaction

- Honorable guest speaker introduces himself and opens up the room for discussion and presentation.

4:15PM-4:30PM End of the seminar and Vote of Thanks

- At the end of the seminar, Prof. Alok Nath delivered the vote of thanks and honorable Principal and Dean Academics presented the Memento & Uttariya to the Guest Speaker.

Introduction:

A one-day seminar on "Tree-Based Approaches for Intrusion Detection and Their Explainability" was successfully conducted on 18th July 2024 at Radhakrishna Institute of

Technology and Engineering. The seminar was jointly organized by the Department of Computer Science & Engineering and MCA in collaboration with IIC and IQAC.

This knowledge-sharing event aimed to expose students to modern cyber-security strategies using machine learning—particularly focusing on tree-based approaches such as Decision Trees, Random Forest, and Gradient Boosting—and the growing need for explainable AI in security applications.

Inaugural Session:

The seminar commenced with a warm welcome address by Prof. Anamika Nandan, who also served as the event host. She spoke on the growing relevance of cybersecurity in the digital world and emphasized the importance of combining AI with intrusion detection to create robust and intelligent systems.

She then introduced the resource person, Dr. Sanket Mishra, highlighting his academic achievements and extensive research experience in artificial intelligence, machine learning, and security systems.

Technical Session by Dr. Sanket Mishra:

The technical session was engaging and highly informative, where Dr. Mishra systematically discussed the following key topics:

1. Fundamentals of Intrusion Detection Systems (IDS)

Overview of traditional and modern IDS

Network-based vs Host-based IDS

Evolution of threat patterns and the need for intelligent detection mechanisms

2. Tree-Based Machine Learning Approaches

Introduction to Decision Trees, Random Forest, and Gradient Boosting

Advantages of tree-based models in handling structured cybersecurity data

Implementation techniques, training on labeled datasets, and evaluating intrusion types.

3. Model Explainability in AI

Importance of transparency in AI-driven security systems

Role of explainability in enhancing trust, validation, and accountability

Explanation of SHAP (SHapley Additive Explanations) and LIME (Local Interpretable Model-Agnostic Explanations)

4. Real-Life Applications and Research Insights

Case studies on tree-based IDS implementations

Demonstration of performance metrics such as accuracy, precision, recall, and confusion matrices

Challenges in balancing accuracy with interpretability

Insights from Dr. Mishra's research on AI and ML in Cyber-security

Student Interaction and Discussion:

An interactive Q&A session followed the presentation, where students posed questions on various practical aspects such as:

- The role of AI in enterprise-level cyber-security.
- Real-time implementation of explainable models.
- Use of open-source libraries and datasets for building IDS.
- Future career paths in AI and cyber-security.

Dr. Mishra addressed all queries with clarity and motivated the students to explore interdisciplinary projects involving AI and security.

Email Communication

Gmail DR.CHANDRABHANU MALLA <chandrabhanu.malla@riteindia.edu.in>

Invitation as guest speaker for the Seminar on "TREE BASED APPROACHES FOR INTRUSION DETECTION AND THEIR EXPLAINABILITY"

2 messages

HOD CSE <hod.cse@riteindia.edu.in> Mon, Jul 15, 2024 at 11:50 AM
To: "sanket.mishra@vitap.ac.in" <sanket.mishra@vitap.ac.in>
Cc: "DR.CHANDRABHANU MALLA" <chandrabhanu.malla@riteindia.edu.in>, "Prof(Dr) SS Kanungo" <principal@riteindia.edu.in>

Dear Sir,
Greetings of the day!!!

On behalf of the Department of Computer Science and Engineering, Radhakrishna Institute of Technology and Engineering, Bhubaneswar, I would like to cordially invite you as the guest speaker for the scheduled seminar on "**TREE BASED APPROACHES FOR INTRUSION DETECTION AND THEIR EXPLAINABILITY**" on **18.07.2024** at **02:00 PM.**

I would be grateful if you took part in the seminar and shared your expertise on the topic with our participants. Your knowledge would be an excellent addition to our programme.

Waiting with anticipation.
Thank you sir.

HOD CSE <hod.cse@riteindia.edu.in> Wed, Mar 19, 2025 at 2:14 PM
To: "DR.CHANDRABHANU MALLA" <chandrabhanu.malla@riteindia.edu.in>

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Seminar Notice

Radhakrishna Institute of Technology & Engineering, Bhubaneswar
(BPUT affiliated, AICTE approved& NAAC accredited)

REF. NO.RITE/2023-24/013 DATE: 16.07.2024

NOTICE

It is hereby informed to all B.Tech, MBA & MCA students that the Department of Computer Science & Engineering, Computer Engineering and MCA is organizing a Seminar on **"Tree based approaches for Intrusion Detection and their Explainability"** in association with IIC & IQAC as per the following schedule. All students are required to attend the above said Seminar without fail. The faculty members are requested to ensure the full attendance of the students along with their presence throughout the Seminar.

Guest Speaker: Dr.Sanket Mishra, Assistant Professor Senior Grade 2, School of Artificial intelligence and Machine Learning, VITAP UNIVERSITY, AMARAVATI, AP

Details of Seminar:

Date: 18th July 2024

Time: 02:00 PM onwards

Venue: Seminar Hall

(Dr. S.R. Kabat)
PRINCIPAL

Copy to: 1. Management Committee for kind information
2. Dean Academics/All HoDs/ All Notice Boards

RITE Bhubaneswar, IDCO Plot-1,IDCO Industrial Estate, Barunei, Bhubaneswar-752057, India
Tefax: 91-6755-220242, Email: riteodisha@gmail.com Web: www.riteindia.in

List of Participants

RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING

List of Participants

Date: 18/07/2024 Seminar Topic: Tree based approaches for Regression Detection and other Explain

Slno	Students name	Reg. No	Branch	Semester	Signature
1	Jagabandhu Kanwar	2101367020	CSE	7th	Jkanwar
2	Utkalosh Panda	2301424016	CSE	3rd	Utkalosh
3	Tanmay Kumar Singh	2301424044	CSE	3rd	tanmaysingh
4	Junaid Akhtar	2301424029	CSE	3rd	Junaid
5	Abhishek Pradhan	2301424015	CSE	3rd	Abhishek
6	Pradip Kr. Behera	2221367085	ME	7th	P
7	Tapas Kr. Mallick	2221367104	ME	7th	T
8	Abhijit Maity	2101367053	ME	7th	Abhijit Maity
9	Lalmohan Kisku	2221367078	ME	7th	Lalmohan Kisku
10	Upendra Kr. Behera	2221367105	ME	7th	Upendra Kr. Behera
11	Ritam Das	2221367013	C.S.E	7th	RitamDas
12	Kiran Das	2201367037	C.S.E	5th	Kiran Das
13	Srikanta Behera	2101367042	CSE	7th	Sr Behera
14	Debasish Panda	2101367017	CSE	7th	Panda
15	Swayam Behera	2201367086	CSE	5th	Swayam
16	Satyasundar Mohakud.	2201367069	CSE	5th	SM
17	Chowdhuri Chinmay Ojha	2221367065	ME	7th	C
18	Ranjeet Tarei	2101367032	CSE	7th	R
19	Rashmi. R. Sahoo	2101367032	CSE	7th	Rashmi

20	Anil Sethi	2101367007	CSE	7th	Anil
21	Chinmay maharana	2201367092	ME	5th	Chinmay
22	Kshirod Kumar Mahanta	2201367038	CSE	5th	Kshirod
23	Bishnu Prasad Sahu.	2201367017	CSE	5th	Bishnu
24	Kuanr Murmu.	2201367093	ME	5th	
25	Deepak ranjan jena	2201367023	CSE	5th	DRJ
26	Rahul Das	2101367029	CSE	7th	18/07/19
27	Dhiren Akshitya Das	2101367018	CSE	7th	
28	Chandra shekhar malik	2101367014	CSE	7th	Chandra
29	Chinmaya Sahu	2101367015	CSE	7th	Chinmaya..
30	Sanjay Hansdah	2201367054	CSE	5th	
31	Himadri Jena	2101367055	ME	7th	
32	Hiradrei mahapatra	2101367025	CSE	7th	
33	Himanshu kumar Behera	2201367032	CSE	5th	Himanshu Behera.
34	Bibhuti Bhushan Chhotaray	2201367061	ME	7th	Bibhuti Bhushan
35	Radharani Pere	2201367055	CSE	5th	Radharani
36	Geeta Bhemua	2201367028	CSE	5th	G. Bhemua
37	Ankita Das	2201367007	CSE	5th	A.Das
38	Subhashree Malik	2201367077	CSE	5th	SM
39	Ipsita Singh	2201367034	CSE	5th	
40	Vinnamaya Pradhan	2201367090	CSE	5th	
41	Prainaparamita Pradhan	2201367049	CSE	5th	P.P.P
42	Laxmipriya Sahoo	2201367039	CSE	5th	Laxmipriya

43	Suchismita Behera	2101367043	CSE	7th	S.Behera
44	Srushtiranya Patra	2201367075	CSE	5th	Srushti
45	Jayashree Mishra	2101367022	CSE	7th	J. Mishra
46	Sunayana Routa	2301424042	CSE	3rd	S. Routa
47	Lopapurna Sahoo	2301424029	CSE	3rd	L Sahoo
48	Rojaline Mohanty	2301424032	CSE	3rd	R. Mohanty
49	Sharmila P. Pradhan	2301424043	CSE	3rd	S. Pradhan
50	Dharitri Devi	2301424045	CSE	3rd	Devi
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18-07-2024

Dr. Chandrabhanu Malla
Dean - Academics

RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING

Faculty Attendance

Date: 18/07/2024 Seminar Topic: "Tree Based Approaches for Intrusion Detection & their Explanation".

Sl No	Faculty Name	Department	Signature
1	Samyukta Chowdhury	Civil Engg.	
2	Ms. Sanghamitra patel	Civil Engg.	
3	Paiyadarshini Rout	EE	
4	Prof. CHANCHAL MUKHERJEE HOD	MBA	18/7/24.
5	Sucharita Lalitharani	CSE	
6	Sanjay Kumar Nayak	BS&H (physics)	
7	Narendra Kumar Sarangi	BS&H (Chemistry)	18/7/2024
8	Dr. Samarendra Nath Nayak	BS&H (Eng)	18.7.2024.
9	Sushree Swagatika Mahapatra	BSH	18/07/24
10	Swagatika Mohapatra	BSH	18.7.2024
11	Jnyasmita Pal	CSE	18/7/24
12	Alok Nath	CSE	18/7/2024
13	Dr. Asima Dash	BSH	18/7/24.
14	Prof. Jagajyoti Sahu	EE	18/7/24
15	Prof. Priyanka Shit	CSE	18.7.24
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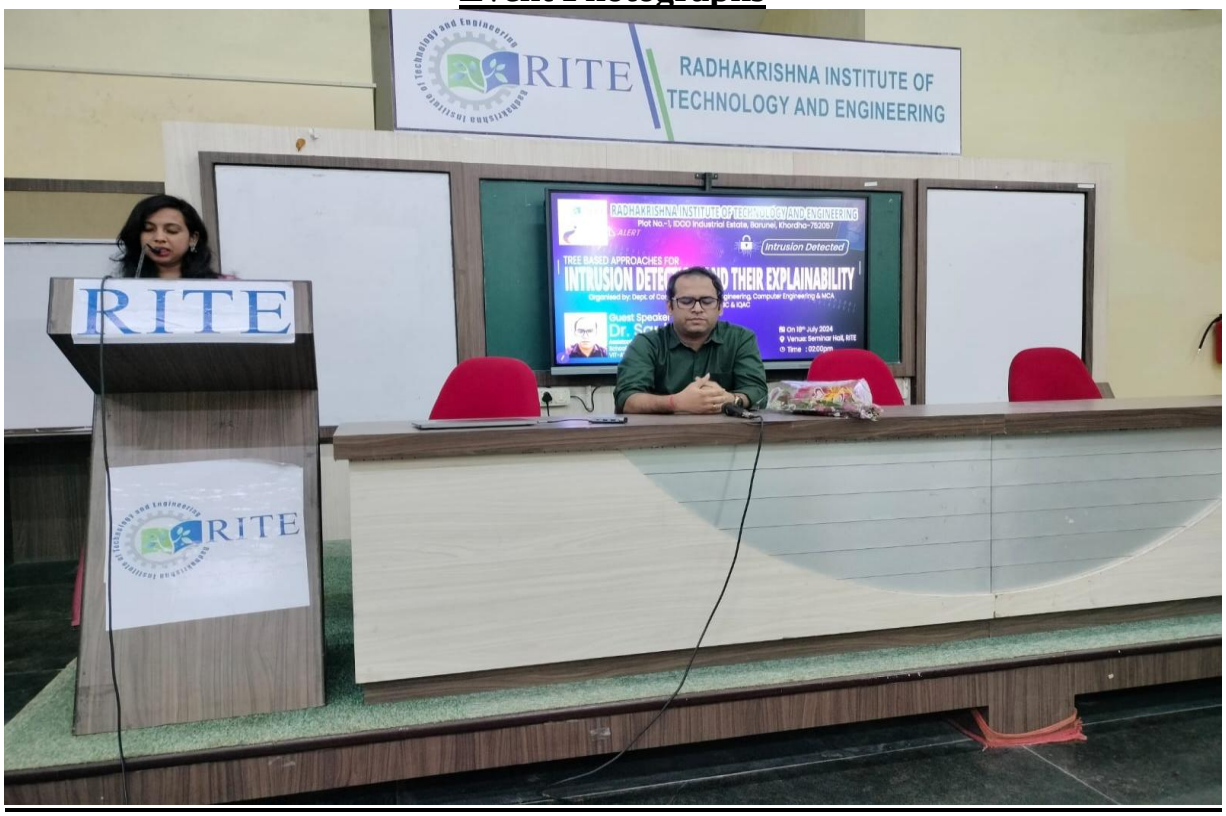
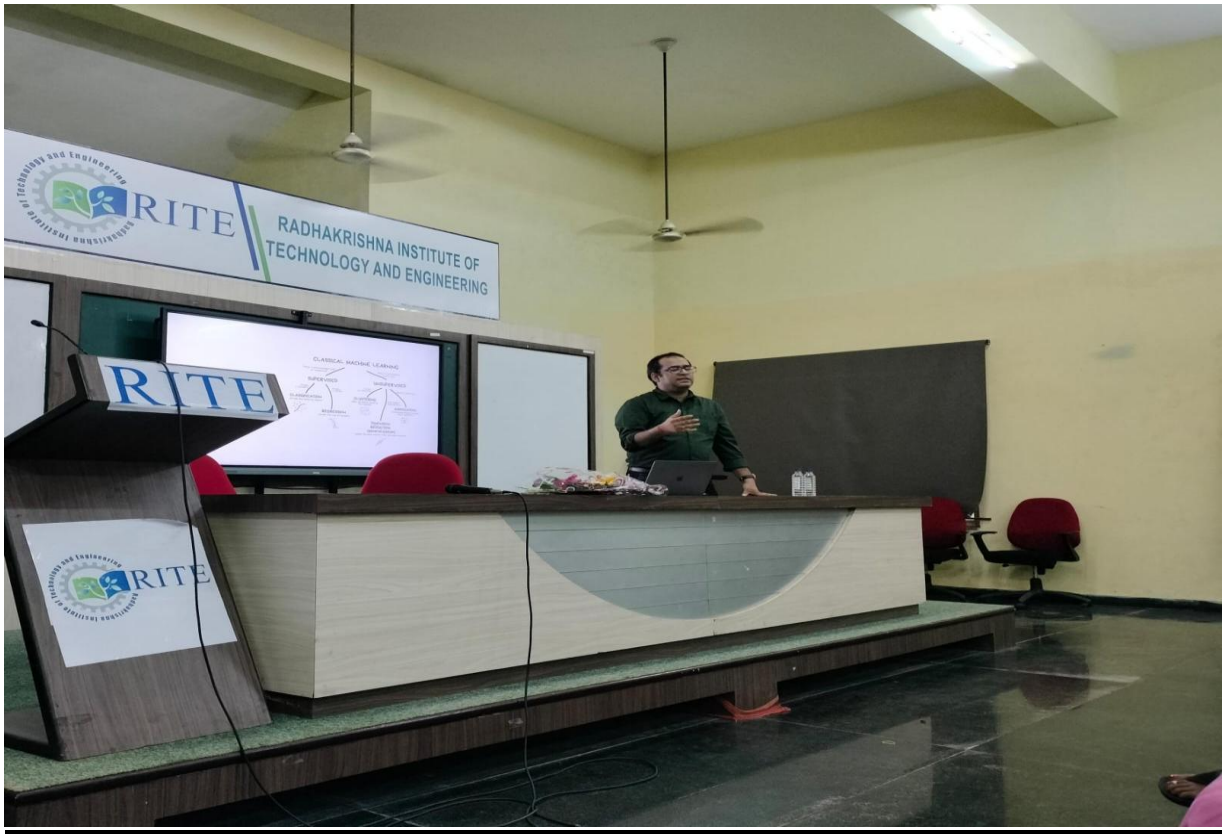
18-07-2024
(Dr. Chandrabhanu Malla
Dean-Academics)

Event Photographs






GPS Map Camera
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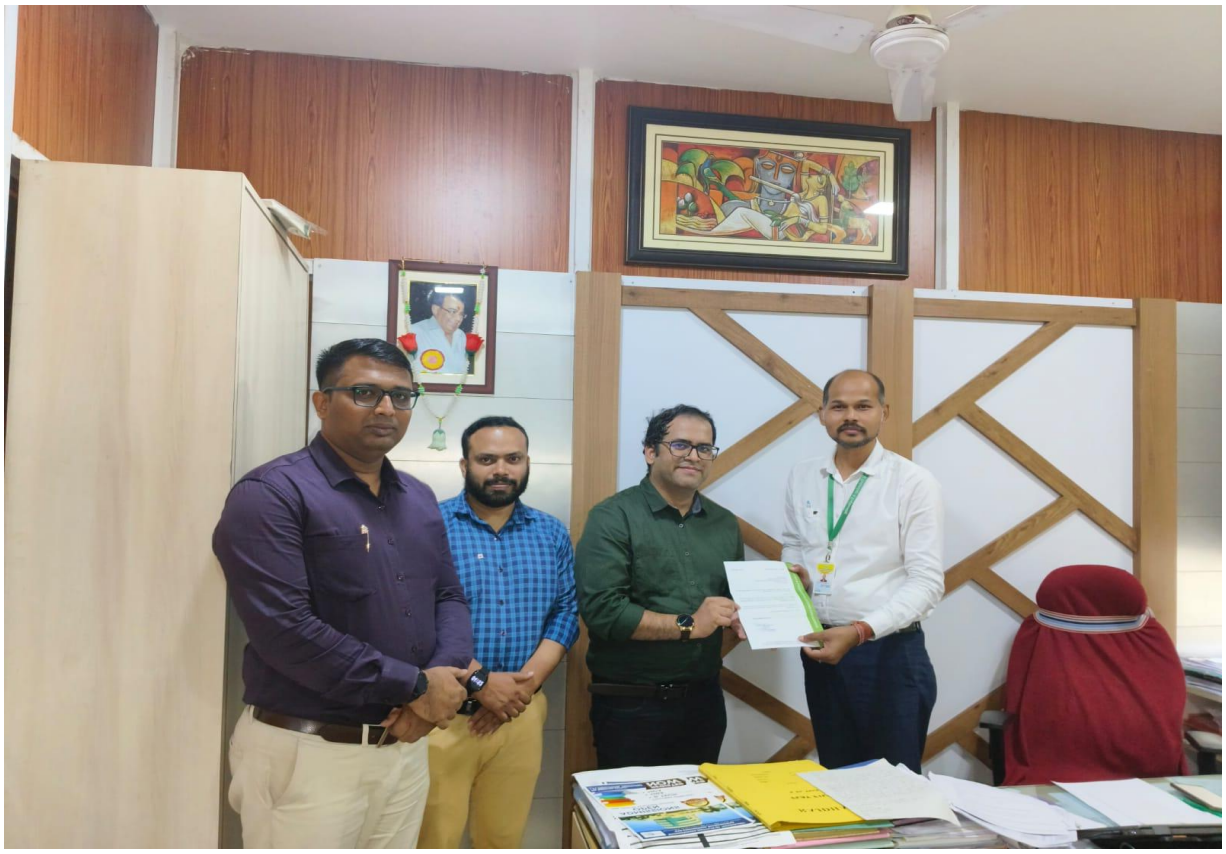

Appreciation Letter to the Resource Person

RADHAKRISHNA INSTITUTE OF TECHNOLOGY & ENGINEERING

Ref. No. : RITE/ 2024-25/014 **Date: 18/07/2024**

To

Dr.Sanket Mishra
Assistant Professor Senior Grade 2,
School of Artificial intelligence and Machine Learning,
VITAP UNIVERSITY,
AMARAVATI, AP

Sub: Letter of thanks for delivering a talk in the topic **"Tree based approaches for Intrusion Detection and their Explainability".**

Dear Dr. Mishra,

Thank you for accepting our invitation to be the invited speaker in the Seminar on **18th July 2024.** It is our pleasure to place on record the deepest sense of appreciation for your excellent informative presentation on ""**Tree based approaches for Intrusion Detection and their Explainability".**

Your cooperation, active endeavor, simplicity in delivering a talk were really commendable and of excellent learning value for all the participants. We look forward to your participation in our future events.

We wish you a very successful professional career.

For and on behalf of RITE,

18/7/2024.

(Dr. Subash Ranjan Kabat)
Principal
Principal
Radhakrishna Institute of Technology and Engineering, Bhubaneswar

Received
18/7/24

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Conclusion & Vote of Thanks

The seminar concluded with a vote of thanks by Prof. Alok Nath, who acknowledged the valuable contribution of the resource person and appreciated the active involvement of the student community. He also thanked the organizing teams from the Department of CSE & MCA, IIC, and IQAC for their efforts in making the seminar a grand success.

Key Takeaways:

- Tree-based models are highly effective in detecting patterns of cyber intrusions.
- Explainable AI tools like SHAP and LIME play a crucial role in making cyber-security systems more transparent.
- The fusion of machine learning with intrusion detection provides a powerful framework for modern threat defense.
- Students were encouraged to develop hands-on skills in AI and cyber-security through research and practical application.

This seminar offered a valuable learning experience for the students and faculty, bridging theoretical knowledge with cutting-edge applications in cyber-security and AI. It fostered a strong foundation for future academic and industry-oriented projects in intelligent security systems.