



Silver Jubilee Celebrations | Silver Summit

Distinguished Lecture

Research Opportunities in Generative AI Security: Attacks, Vulnerabilities, and Countermeasures

 30th June 2026

 10:00 AM – 12:30 PM

 Online



Dr. Praveen R

Executive Committee Member for
IEEE Vehicular Technology Society
IEEE Sensor Council of IEEE Madras Section
Department of Computer Science and Engineering,
National Institute of Technology, Puducherry

Organising Committee

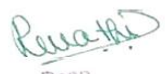
Dr. Vinoth Kumar K
Professor and Associate Head – R&D
Advisor IEEE IES NHCE SBC

Dr. Revathi V
Dean – R&D

Dr. Manjunatha
Principal

Organised by
Department of Research and Development




Dean
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NEW HORIZON COLLEGE OF ENGINEERING
New Horizon Knowledge Park, Bellandur Main Road,
Near Marathalli, Bengaluru – 560 103



Event Report

Title	Distinguished Lecture on Research Opportunities in Generative AI Security: Attacks, Vulnerabilities, and Countermeasures	
Department	Research and Development	
Date	From: 30.06.2026	To: 30.06.2026
Time	From: 10:00 AM	To: 12:30 PM

Event Overview

As part of the **Silver Jubilee Celebrations – Silver Summit**, the Department of Research and Development, New Horizon College of Engineering, organized an online **Distinguished Lecture** on "**Research Opportunities in Generative AI Security: Attacks, Vulnerabilities, and Countermeasures**" on **30 June 2026**.

The lecture was delivered by **Dr. Praveen R**, Executive Committee Member, IEEE Vehicular Technology Society, IEEE Sensor Council – IEEE Madras Section, and Faculty, Department of Computer Science and Engineering, National Institute of Technology Puducherry.

The session was organized to provide participants with insights into emerging research challenges in Generative Artificial Intelligence (GenAI), focusing on security threats, vulnerabilities, adversarial attacks, privacy concerns, and effective countermeasures. The lecture also highlighted potential research directions and opportunities for academicians, researchers, and postgraduate students working in AI and Cybersecurity.

Objectives

- To introduce participants to the latest developments in Generative AI security.
- To understand various attack vectors and vulnerabilities associated with Large Language Models (LLMs) and Generative AI systems.
- To discuss existing and emerging countermeasures for secure AI deployment.
- To identify promising research opportunities in AI security and trustworthy AI.
- To encourage interdisciplinary research collaborations in AI and Cybersecurity.

Highlights of the Lecture

Dr. Praveen R delivered a highly informative and engaging session covering:

- Evolution of Generative AI technologies.
- Security risks associated with foundation models and Large Language Models.
- Prompt injection attacks and adversarial prompting.
- Data poisoning and model manipulation techniques.
- Privacy leakage and model inversion attacks.
- Jailbreaking techniques against Generative AI systems.
- Secure prompt engineering methodologies.
- AI governance, ethical considerations, and responsible AI practices.
- Future research opportunities in AI security, explainable AI, and trustworthy machine learning.
- Publication opportunities and collaborative research initiatives.

The lecture concluded with an interactive question-and-answer session where participants discussed current research problems, publication strategies, funding opportunities, and future collaboration prospects.

Outcome of the Programme

The distinguished lecture enabled participants to:

- Gain comprehensive knowledge of Generative AI security challenges.
- Understand real-world attack scenarios targeting AI models.
- Explore current research trends in trustworthy and secure AI.
- Identify potential interdisciplinary research topics.
- Enhance awareness of ethical AI development and deployment practices.
- Develop interest in collaborative research and IEEE professional activities.

Participants

The online session witnessed enthusiastic participation from:

39 Faculty members participants actively interacted with the speaker during the discussion session, making the programme highly engaging and beneficial.

Conclusion

The Distinguished Lecture successfully achieved its objectives by providing valuable insights into the rapidly evolving domain of Generative AI Security. The expert session by Dr. Praveen R enhanced participants' understanding of emerging threats, vulnerabilities, and research opportunities while emphasizing the importance of developing secure, ethical, and trustworthy AI systems. The programme served as an excellent platform for knowledge sharing and inspired faculty members, researchers, and students to pursue innovative research in Artificial Intelligence and Cybersecurity as part of New Horizon College of Engineering's Silver Jubilee initiatives.

The screenshot displays a Google Meet interface during a presentation. The main window shows a slide titled "4 Pillars of LLM Security" with the following content:

Data Security	Model Security
LLM Failure Data Leakage Data Poisoning Data Privacy	Cybersecurity Encryption Access Control Data Integrity
Infrastructure Security Cybersecurity Firewalls Encryption Hosting Environment	Ethical Considerations LLM Failure Bias Toxicity Discrimination

The slide also includes sub-sections for "Cybersecurity" and "Authentication" under Model Security, and "Authentication" and "Tamper Protection" under Model Security. The bottom right of the slide shows "13 / 45".

The Meet interface includes a top bar with the URL "meet.google.com/wdp-txae-akk?authuser=0", a title "10:34 AM | Distinguished Lecture on Research Opportunities in...", and a presenter "Praveen Ramalingam (Presenting)". The right sidebar shows a grid of participant avatars, including "Praveen Ram...", "sreeja anil", "Sayani Baisya", "siva sankari", "Apeksha NH", "11 others", and "Dr. Vinoth Kumar K". The bottom status bar shows "25°C Partly sunny", "Search", and "ENG IN 10:34 30-06-2026".

4 Pillars of LLM Security

Data Security	Model Security
LLM Failure Data Leakage Data Poisoning Data Privacy	Cybersecurity Injection Access Control Data Integrity
Infrastructure Security Cybersecurity Firewalls Intrusion Detection Encryption Physical Security Testing Environment Hardware Protection	Ethical Considerations LLM Failure Bias Hallucination Discrimination Cybersecurity Integration Access Control Data Integrity

madula sharma

Praveen Ramalingam

14 others

Dr. Vinoth Kumar K

People

Add people

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IN THE MEETING

Contributors 18

- Dr. Vinoth Kumar K (You) Meeting host
- Apeksha NH
- Garima Joshi
- Harish Hanchinal

Meeting controls: Mute, Video, Screen Share, Chat, Hand Raise, More, End Call

10:06 AM | Distinguished Lecture on Research Opportunities in... | Praveen Ramalingam (Presenting) 19

AI_Security.pdf

Agenda

- Intro: AI & LLM
- GenAI Architectural Patterns
- LLM Security?
- OWASP 2025 Top 10 Risk & Mitigations for LLMs and Gen AI Apps
 - LLM01: Prompt Injection
 - LLM02: 2025 Sensitive Information Disclosure
 - LLM03: 2025 Supply Chain
 - LLM04: Data and Model Poisoning
- LLM and Gen AI Security Solution Landscape

Sheshu A, Praveen Ram..., mradula shar..., sreeja anil, Sayani Baisya, siva sankari, 11 others, Dr. Vinoth Kumar K

24°C Partly sunny

10:09 AM | Distinguished Lecture on Research Opportunities in... | Praveen Ramalingam (Presenting) 20

AI_Security.pdf

How AI and LLMs Work - Basic Example

AI models, particularly Large Language Models (LLMs) like GPT-3, function through a process of training on vast datasets of text. They learn patterns in language and can generate human-like responses based on input. Here's a basic example:

Example:

- ▶ **Input:** "What is the capital of France?"
- ▶ **AI Response:** "The capital of France is Paris."

Process:

1. Data Collection: The model is trained on large text datasets.
2. Preprocessing: Text is tokenized into smaller units (e.g., words, characters).
3. Training: The model learns statistical relationships between words and their context.
4. Generation: When given an input, the model generates output based on learned patterns.

Dr. Vinoth Kumar K, Sheshu A, Praveen Ramalingam, 16 others



Ramalingam
 Dean
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Participant Details of Distinguished Lecture on Research Opportunities in Generative AI Security: Attacks, Vulnerabilities, and Countermeasures dated on 30.06.2026

S.No	Timestamp	Name of the Participant	Designation	Department	Name of the Institution	Topic Coverage in the Session	Effectiveness in Delivering the Lecture	The learning materials were presented in clear and organized manner.	The experts/presenters were well prepared	The experts/presenters responded to queries of participants satisfactorily	Adequate time was provided for activities	Overall rating of the event
1	6-30-2026 11:40:13	Sukhmanpreet Kaur	Assistant Professor	CSE	NHCE	5	5	5	5	5	5	5
2	6-30-2026 11:41:01	Mradula	Sr Asst Professor	CSE-2	NHCE	5	5	5	5	5	5	5
3	6-30-2026 11:41:35	Vijayashree H P	Sr. Assistant Professor	CSE 2	NHCE	4	4	4	4	4	4	4
4	6-30-2026 11:41:48	Sayani Baisya	AP	CSE 2	NHCE	5	5	5	5	5	5	5
5	6-30-2026 11:42:06	Ramesh Prasad R	Professor of Practice	AIML	NHCE	5	4	5	5	5	3	5
6	6-30-2026 11:42:42	Dr. Neelima Ravindran K	Assistant Professor	MBA	NHCE	5	5	5	5	5	5	5
7	6-30-2026 11:43:24	Harish R Hanchinal	Sr.Assistant Professor	Electronics & Communication Engg.	NHCE	4	4	4	4	4	4	4
8	6-30-2026 11:43:48	Mrs. Padmavathi C Ainapure	Assistant Professor	Computer Science and Engineering	NHCE	5	5	5	5	5	5	5
9	6-30-2026 11:44:21	Garima Joshi	Asst Professor	CSE2	NHCE	4	5	5	5	5	4	5
10	6-30-2026 11:44:32	Dr. DIVYA SHARMA	Associate Professor	CSE	NHCE	5	5	5	5	5	5	5
11	6-30-2026 11:44:37	Manojkumar	Assistant professor	AIML	NHCE	5	5	5	5	5	5	5
12	6-30-2026 11:45:09	V Lakshmi Durga	Sr Assistant professor	CSE	NHCE	5	5	5	5	4	4	5
13	6-30-2026 11:45:20	Dr. D. Roja Ramani	Associate Professor	Computer Science and Engineering	NHCE	5	5	5	5	5	5	5
14	6-30-2026 11:45:31	Chempavathy B	Senior Assistant Professor	Computer Science and Engineering	NHCE	5	5	5	5	5	5	5
15	6-30-2026 11:45:37	Saranya S	Assistant Professor	Computer science and Engineering	NHCE	5	5	4	4	5	5	5
16	6-30-2026 11:47:29	Dr Soja Rani S	Associate Professor	CSE	NHCE	5	5	5	5	5	5	5
17	6-30-2026 11:48:26	Dr. SOWMYA HK	Associate Professor	Artificial Intelligence and Machine Learning	NHCE	5	5	5	5	5	5	5
18	6-30-2026 11:48:44	Divyanshi Chhabra	Assistant Professor	CSE 1	NHCE	4	4	4	4	4	4	4
19	6-30-2026 11:49:56	Dr.sreoshi Dasgupta	Associate Professor	MBA	NHCE	5	5	5	5	5	5	5
20	6-30-2026 11:50:33	Dr J.Karthiyayini	Associate Professor	Information Science and Engineering	NHCE	5	5	4	5	5	5	5
21	6-30-2026 11:50:46	Sukanya N S	Associate Professor	MCA	NHCE	4	5	4	5	4	4	5
22	6-30-2026 11:51:00	B NITHYA	Associate Professor	MCA	NHCE	4	4	4	4	4	4	4
23	6-30-2026 11:51:07	Salna Joy	Sr Assistant Professor	CSE1	NHCE	5	5	5	5	5	5	5
24	6-30-2026 11:53:16	Archana Das	Assistant Professor	Information Science and Engineering	NHCE	5	5	5	5	5	5	5
25	6-30-2026 11:53:32	Rama Bansidhar Dan	Senior Assistant Professor	ISE	NHCE	5	5	5	5	5	5	5
26	6-30-2026 11:53:52	Vanthana	Assistant Professor	ISE	NHCE	5	5	5	5	5	5	5
27	6-30-2026 11:54:37	Dr. Priya Thomas	Associate Professor	MCA	NHCE	5	5	5	5	5	5	5
28	6-30-2026 12:02:45	Shruthi G R	Sr. Asst. Professor	Information Science and Engineering	NHCE	4	4	4	4	4	4	4
29	6-30-2026 12:08:31	Dr.Rajalakshmi Ghatkamble	Associate Professor	ISE	NHCE	4	4	4	4	4	4	4
30	6-30-2026 12:12:25	DR.PRIYAMEET KAUR KEER	Professor	MBA	NHCE	5	5	5	5	5	5	5
31	6-30-2026 12:16:16	N Mithili Devi	Associate Professor	MCA	NHCE	5	5	5	5	5	5	5
32	6-30-2026 12:19:43	Dr. Srividhya G	Senior Assistant Professor	Computer science and Engineering	NHCE	5	5	5	5	5	5	5
33	6-30-2026 12:58:51	S P Sreeja	Sr. Assistant Professor	MCA	NHCE	4	4	4	5	4	4	4
34	6-30-2026 13:03:10	Dr. Ramachandra Naik	Associate Professor	Applied Sciences	NHCE	5	5	5	5	5	5	5
35	6-30-2026 13:03:51	Dr.Jimsha K Mathew	Associate professor	AIML	NHCE	5	5	5	5	5	5	5
36	6-30-2026 13:16:14	Dr. Madhumohana Raju A B	Associate Professor	Applied Sciences	NHCE	5	5	5	5	5	5	5
37	6-30-2026 13:17:13	A.Kalaivani	Senior Assistant Professor	MCA	NHCE	4	4	4	4	4	4	4
38	6-30-2026 13:19:00	Dr. R SUGANYA	Associate Professor	CSE(DATA SCIENCE)	NHCE	5	5	5	5	5	5	5
39	6-30-2026 13:26:03	BHASKAR S V	Sr AP	CSE	NHCE	4	4	4	4	4	4	4