SVCE | Sri Venkateswara College of Engineering

A Report on
Guest Lecture- AI Transformer:Architecture,Innovations and Real-World Applications

Objective:

- **Enhance Technical Knowledge:** Deepen students' understanding to analyze the architecture, innovations, and real-world applications of AI Transformers, highlighting their impact on machine learning and industry advancements.
- **Connect Theory with Industry:** Bridge academic concepts with real-world industry practices through insights from an experienced professional.
- **Guide Career Development:** Provide practical advice on placement preparation and higher studies to support students' academic and professional growth.

Date	4-03-2025
Number of Days	1
Venue	Video Hall
Number of Participants	68
Category	Online Guest Lecture
Organizers / Coordinators	Dr.D.Menaka, Ms.S.Kalyani

Outcome:

- **Gained Technical Insights:** Students deepened their understanding of advanced technologies like AI architecture,innovation and real-world applications.
- **Bridged Academia and Industry:** The event connected theoretical knowledge with real-world industry practices.
- **Inspired Career Growth:** Students received valuable guidance on placements and further studies, motivating their professional aspirations.

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Report on Guest lecture on:AI-Transformer:Architecture,Innovations, and Real-world Applications

On 4th March 2025, the Department of Electronics and Communication Engineering organized an online guest lecture featuring **Mr. Sandeep Kumar R.**, Senior Machine Learning Engineer at **Qualcomm, California, USA**. He is an alumnus of **SVCE, Batch 2015-2019, ECE Department**. The lecture, titled **"AI-Transformer: Architecture, Innovations, and Real-World Applications,"** aimed to provide students with valuable insights into AI architecture and its innovations.

Mr. Sandeep Kumar began by explaining **machine learning** and its **self-attention mechanism**, which enables efficient processing of sequential data. He also discussed the **Transformer architecture**, introduced in the *"Attention Is All You Need"* paper, which eliminates recurrence, allowing parallel computation and scalability. He highlighted key innovations such as **BERT, GPT, and Vision Transformers**, which have significantly advanced **NLP, image recognition, and AI-driven automation**. He also explored real-world applications, including **chatbots, language translation, medical diagnostics, and financial forecasting**.

Additionally, he emphasized **enhancing accuracy and efficiency** across diverse fields. Drawing from his personal experiences, he provided students with **practical advice** to help them succeed in their academic and professional journeys. The session concluded with an engaging **Q&A segment**, where students explored topics further and clarified their doubts.

The event was an excellent opportunity for students to bridge the gap between **academic concepts and industry practices**, gaining insights from an expert in the field. The **Department of Electronics and Communication Engineering** thanks **Mr. Sandeep Kumar** for his time and expertise and looks forward to more such enriching sessions in the future.

PO Mapping:

The following Program Outcomes (POs) and Program Specific Outcomes (PSOs) are addressed by the Guest lecture on "Pushing Boundaries: Ultrasonics and Terahertz for NDT and Biomedical Applications".

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓

(use ✓ mark)


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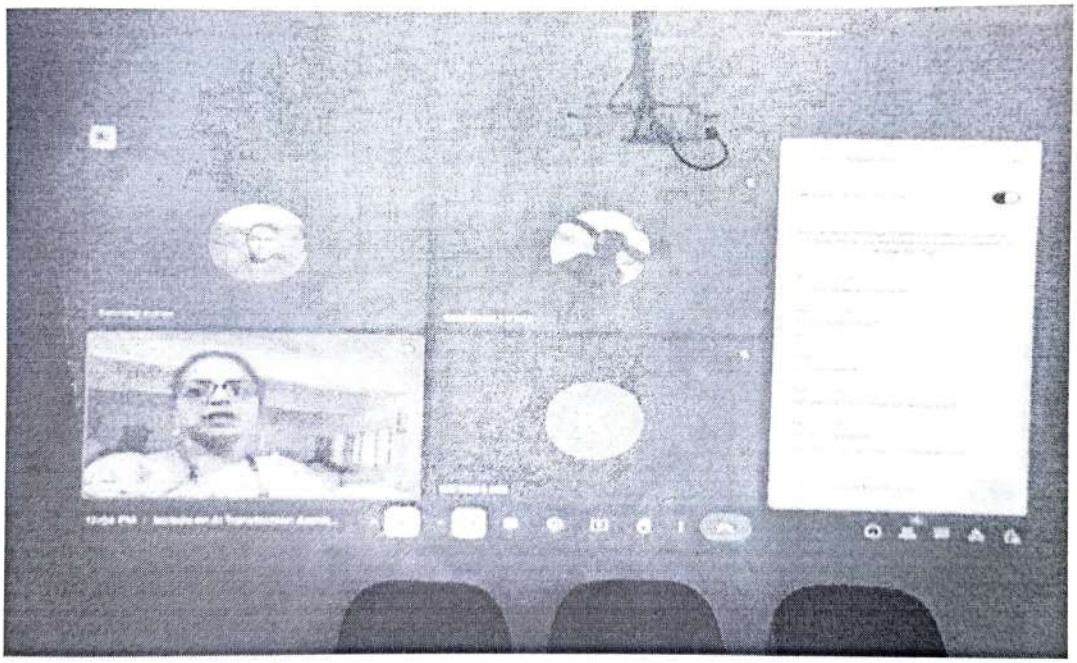

Speaker's Profile

Mr. Sandeep Kumar R. is a Senior Machine Learning Engineer at Qualcomm, California, USA. He completed his undergraduate studies at **Sri Venkateswara College of Engineering,** Batch 2015-2019, in the ECE department. He is passionate about AI software-hardware **co-design and system optimization** to achieve orders-of-magnitude faster deep learning inference on edge computing.

He is skilled in deploying deep learning models on edge, with proven expertise in optimizing for key constraints such as **power efficiency, high performance, and minimal memory footprint.** He is an expert in deep learning, high-performance computing, and acceleration design and development. He is also an **electronics hobbyist.**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PRESENTS

AN ONLINE LECTURE ON

AI TRANSFORMER: ARCHITECTURE, INNOVATIONS, AND REAL-WORLD APPLICATIONS

BY

Mr. SANDEEP KUMAR R.
SENIOR MACHINE LEARNING ENGINEER, QUALCOMM, CALIFORNIA
2015 - 2019 BATCH , ECE

DATE: 4th MARCH, 2025

TIME: 10:30 AM

VENUE: VIDEO HALL

FACULTY COORDINATORS :

Dr.D.Menaka, Associate Professor
Ms.S.Kalyani, Assistant Professor

Event Coordinators	
Name	**Signature**
Dr.D.Menaka	D. Me
Ms.S.Kalyani	S. Kal

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Dr.N. KUMARATHARAN
PROFESSOR & HEAD
Department of Electronics & Communication Engg
Sri Venkateswara College of Engineering
Pennalur, Sriperumbudur, TamilNadu-602117

Department of ECE

Attendance Sheet

Guest Lecture on AI Transformer: Architecture, Innovations and Real-World Applications

Date:04/03//2025

Sl.No	ROLL NO	NAME
1	2127220701115	ROOBUCK GANESHWARA RAO C
2	2127220701116	ROSHAN M
3	2127220701117	SAI SANDEEP R M
4	2127220701118	SAI SRUTHI V
5	2127220701119	SAI VIGNESH P
6	2127220701120	SAKTHIVEL S
7	2127220701121	SANDHIYA R
8	2127220701122	SANGEETH S
9	2127220701123	SANJNA B
10	2127220701124	SANTHIYA V
11	2127220701125	SANTHOSH FRANKLIN J
12	2127220701126	SARAN S T
13	2127220701127	SARAVANAN S
14	2127220701128	SATHYAJITH G
15	2127220701129	SHACHINDRA R J
16	2127220701130	SHAKEEL IRFAN S
17	2127220701131	SHRUTHIKA B
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20	2127220701134	SNEHA A
21	2127220701135	SREE SANJAY K
22	2127220701136	SRI DHANAROOPAN K
23	2127220701137	SRIMATHI R
24	2127220701138	SRINATH S
25	2127220701139	SRINIVASAN D
26	2127220701140	SUBASRI J
27	2127220701141	SUBESHWAR P
28	2127220701142	SUCHARITHA RANGANATHAN
29	2127220701143	SUDHARSHINI K
30	2127220701144	SUTHARSAN S
31	2127220701145	SWATHI LAKSHMI S
32	2127220701146	SWETHA S
33	2127220701147	SWETHA V
34	2127220701148	TAMIL NILAVAN S
35	2127220701149	TANUSHRI K
36	2127220701150	THANUJA V G
37	2127220701151	VAISHNAVI V J
38	2127220701152	VANDHANAA DEVI D R
39	2127220701153	VARSHA K S

40	2127220701154	VARSHA P	
41	2127220701155	VARSHINI K K	
42	2127220701156	VARUNIKA K	
43	2127220701157	VASANTHA VIDHYA P V	
35	2127220701159	VIGNESH S R	
45	2127220701160	VIJAI SARAVANAN R G	
46	2127220701161	VIJAY VISWANATH M	
47	2127220701162	VIJI M	
48	2127220701163	VIKAASH B G	
49	2127220701164	VIKASH S K	
50	2127220701165	VIMALESH T K	
51	2127220701166	VISHNU PRASATH S	
52	2127220701167	VISHWA M D	
53	2127220701168	VITHUN H	
54	2127220701169	YAAMINY S K	
55	2127220701170	YOGESH M	
56	2127220701307	HEMACHANDIRAN H	
57	2127220701308	HEMANTH KRISHNA T	
58	2127220701309	KARTHIK KRISHNA B L	
59	2127220701310	KISHORE S	
60	2127220701311	VASANTH C	

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S. Kalyani

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