

Electronics and Communication Engineering

Guest Lectures conducted under AICTE sponsored Distinguished Visiting Professor (DVP) scheme

S.No.	Title	Date	No. of Participants
1.	Insights into IoT	17-11-2021	107
2.	Wireless Communication in the IoT	19-11-2021	120
3.	Edge Intelligence in IoT	29-11-2021	115
4.	Battery Life Enhancement in IoT devices	30-11-2021	95

Speaker: Distinguished Visiting Professor (DVP):



Sri. N. Venkatesh
Senior Director, Engineering
Silicon Labs

AICTE-Distinguished Visiting Professor scheme

Report

Guest Lecture -1

Topic: Insights into IoT

Date: 17-11-2021

Under the AICTE - Distinguished Visiting Professor (DVP) scheme, the Institution has organized the first lecture of **Sri. N Venkatesh**, titled '**Insights into IoT**' between 2.30 PM to 4.30 PM on 17.11.2021 (Wednesday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction were conducted online through Google Meet platform. The interaction was very productive and a total of 107 students along with other faculty attended the lecture making the session great success.


The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Dr V. Priyanka from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Mr Shabarinath B. Faculty of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance IoT. The talk given by Venkatesh sir can be divided into two phases. In which phase 1 explains the architecture of IoT and phase 2 explains the areas of focus in the context of IoT. The structure of the IoT node can be mapped to a closed-loop control system with negative feedback. Modern IoT device is a System on chip (SoC) incorporating sensors, battery management, interface, I/O devices, Communication interface, and software controlling all these elements. IoT involves communication between various platforms using various protocols. It is important to know the key difference between Fog computing, Cloud computing, and Edge Computing which forms the modern-day computing framework for IoT. Sensors, 5G Communications Technology, Cloud Computing, Industrial IoT, Artificial Intelligence, Automobiles, and Wearables form the major focus areas in the context of IoT. It is important to realize the importance of IoT in modern-day recruitment for students and utilize the college life accordingly for success.

WhatsApp Fwd: INAE letter - nagadeepa... VNR Vignana Jyothi Institute of Meet - Insight into IoT PLAYING

https://meet.google.com/biy-vrav-uuh?authuser=1

REC N Venkatesh is presenting




भारतीय राष्ट्रीय अभियांत्रिकी अकादमी
Indian National Academy of Engineering

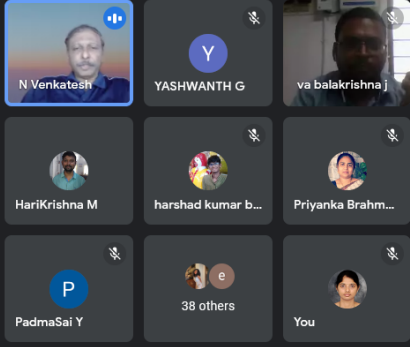
Insight into IoT

N.Venkatesh, FNAE

AICTE-INAE Distinguished Visiting Professor, MJCET
Sr. Director, Engineering, Silicon Labs, Hyderabad

nvenkatesh@ieee.org



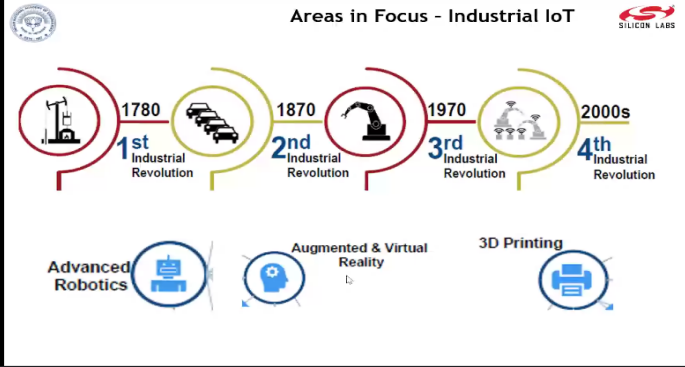


Participants: N Venkatesh, YASHWANTH G, va balakrishna j, HariKrishna M, harshad kumar b..., Priyanka Brahm..., PadmaSai Y, 38 others, You

14:39 | Insight into IoT

Windows Taskbar: Type here to search, 29°C Light rain, 14:39 17-11-2021

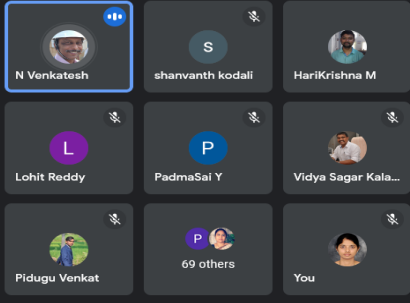
REC N Venkatesh is presenting



Areas in Focus - Industrial IoT

Timeline: 1780 (1st Industrial Revolution), 1870 (2nd Industrial Revolution), 1970 (3rd Industrial Revolution), 2000s (4th Industrial Revolution)

Key Technologies: Advanced Robotics, Augmented & Virtual Reality, 3D Printing



Participants: N Venkatesh, shanvanth kodali, HariKrishna M, Lohit Reddy, PadmaSai Y, Vidya Sagar Kals..., Pidugu Venkat, 69 others, You

15:22 | Insight into IoT

Windows Taskbar: Type here to search, 29°C Light rain, 15:22 17-11-2021

(3) WhatsApp Fwd: INAE letter - nagadeepa... VNRVIJETH | Home Meet - Insight into IoT PLAYING

https://meet.google.com/biy-vrav-uuh?authuser=1

REC N Venkatesh is presenting



Internships

INAE - Indian National Academy of Engineering
- For Students as well as Faculty!

- INSA - Indian National Science Academy
- All IITs



Summer Fellowship Programme - 2020
Indian Institute of Technology Madras

Mentoring Of Engineering Students By INAE Fellows
Guidelines for Mentoring of Engineering Students by INAE Fellows

1. Objective
The objective of the Scheme is the mentoring of bright B.Tech./B.E. students by Fellows of INAE.
2. Eligibility
a) Meritorious 3rd /4th year B.E./B.Tech students from recognized Engineering Institutions are eligible under the scheme. The Mentor and the Engineering Student should not be from the same engineering institution, though they can be from two different institutions located in the same station. Candidates from any institutions/engineering colleges securing minimum 75% marks or minimum 7.5 CGPA only, are eligible for consideration for mentoring by INAE Fellows.
b) Engineering students from unrecognized private engineering colleges/institutions are not eligible for mentoring.



Participants: N Venkatesh, Pidugu Venkat, shanvanth kodali, HariKrishna M, Lohit Reddy, PadmaSai Y, HEAD ECE - VNR..., 57 others, You

15:44 | Insight into IoT

Windows Taskbar: Type here to search, 29°C Light rain, 15:44 17-11-2021

AICTE-Distinguished Visiting Professor scheme

Report

Guest Lecture- 2

Topic: WIRELESS COMMUNICATION IN THE IoT

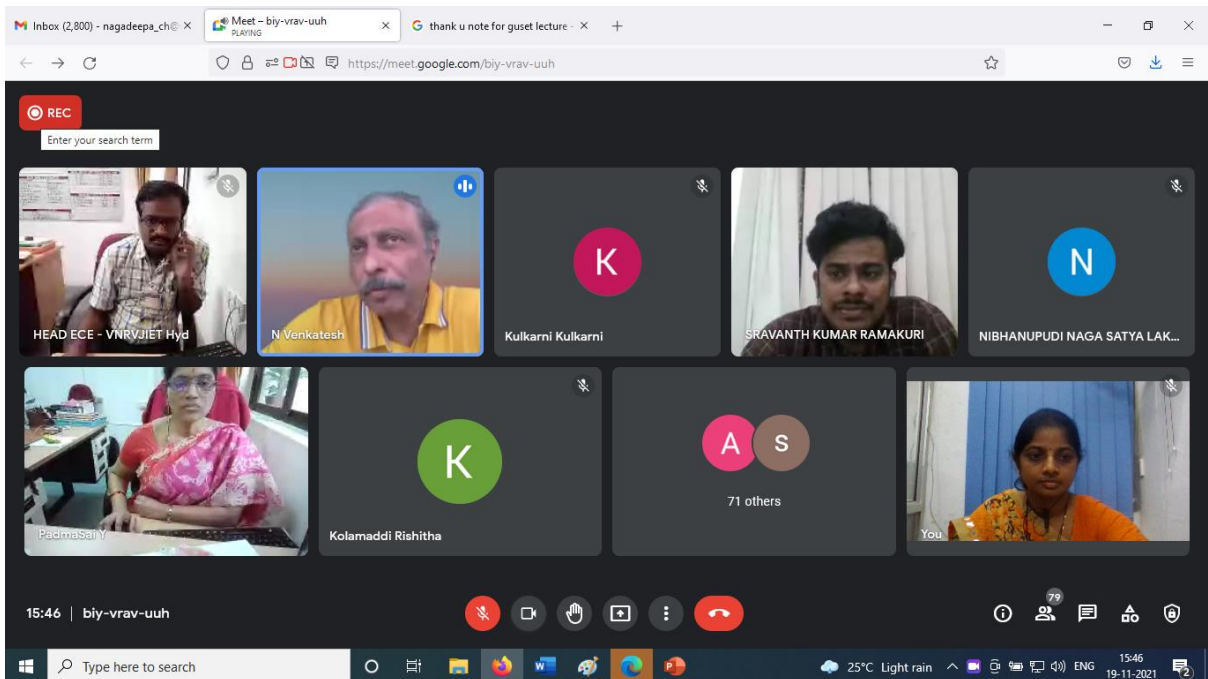
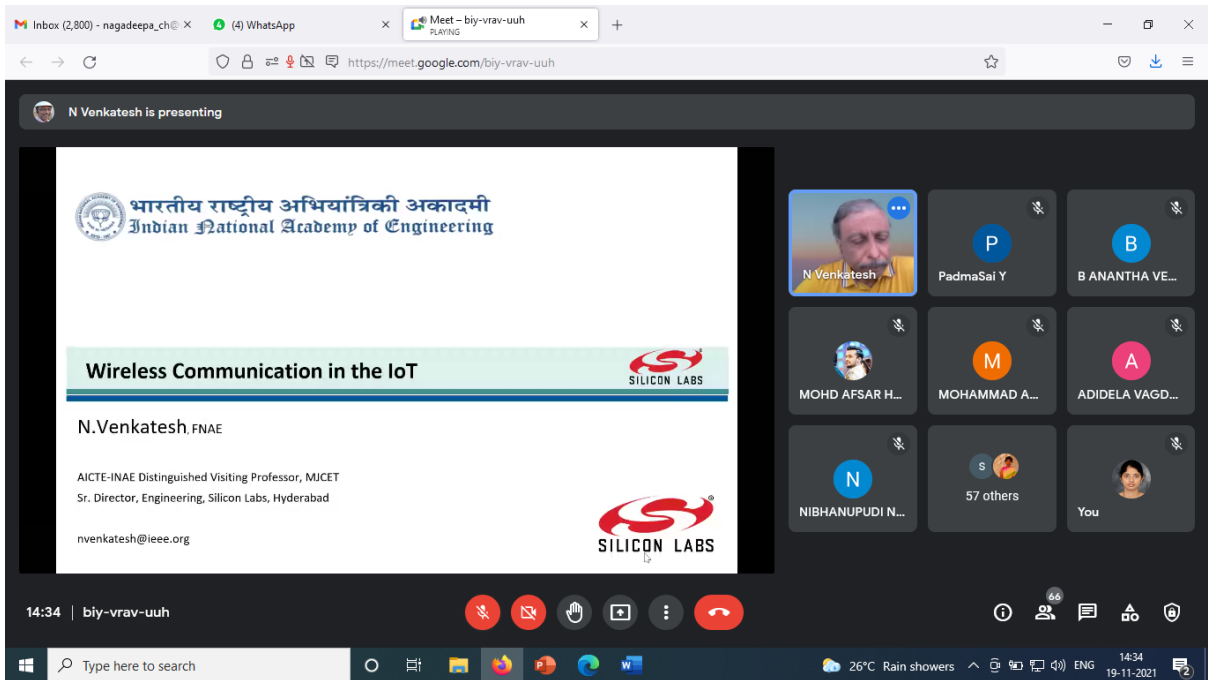
Date: 19-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the Second lecture of **Sri. N Venkatesh**, titled “**WIRELESS COMMUNICATION IN THE IoT**” between 2.30 PM to 4.30 PM on **19.11.2021 (Friday)** for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 120 students along with other faculty attended the lecture making the session great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Dr D. Sravanth Kumar from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Dr. Y. Padma Sai, Professor of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance of Wireless Communications in IoT. The talk given by Venkatesh sir about Wireless standards, protocols used in IoT.

Gallery



AICTE-Distinguished Visiting Professor scheme

Report

Guest Lecture- 3

Topic: Edge Intelligence in IoT

Date: 29-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the third lecture of **Sri. N Venkatesh**, titled “**Edge Intelligence in IoT**” between 2.30 PM to 4.30 PM on 29.11.2021 (Monday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 115 students along with other faculty attended the lecture making the session a great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Mrs. K. Manasa from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by K. Manasa, Assistant Professor of ECE department.


The main aim of this session is to enlighten the students and faculty on the significance of Edge Intelligence in IoT. The lecture started with informing how data is getting overloaded in the IoT as billions of devices sending out data every few seconds/minutes/days. Also analysed how data is being stored and how it is analyzed and as a result there is an exponential growth of data with the growth of IoT devices. And next participants were able to understand what to do for that increased load problem with analytics for better understanding of either health of the system, customer preferences, reliability of the system, trends, and Lacunae. And for the analytics for immediate action one requires corrective measures, warnings and alerts and identification of safety and security issues.

And to do analysis one should always take the help of Artificial intelligence where AI is a technique which enables machines to mimic human behaviour. And participants learned about role of Machine learning here which is a subset of AI techniques which use statistical methods to enable machines TI to improve with experience. Next also discussed about Training and inference and Road map from F and S. Finally discussed about how important it is for brining intelligence to the Edge.

Audit report of CE dept_criteria x Meet - biy-vrav-uuh PLAYING AE evaluation reports and Obser x (1) WhatsApp Edge Intelligence - Google Search x

https://meet.google.com/biy-vrav-uuh

REC N Venkatesh is presenting




भारतीय राष्ट्रीय अभियांत्रिकी अकादमी
Indian National Academy of Engineering

Edge Intelligence in the IoT

N.Venkatesh.FNAE

AICTE-INAE Distinguished Visiting Professor, MJCET
Sr. Director, Engineering, Silicon Labs, Hyderabad

nvenkatesh@ieeee.org



N Venkatesh

PadmaSai Y

SANTOSH KUM...

va balakrishna j

SWETHA REDDY ...

mangathayaru N

MANASA K

6 others

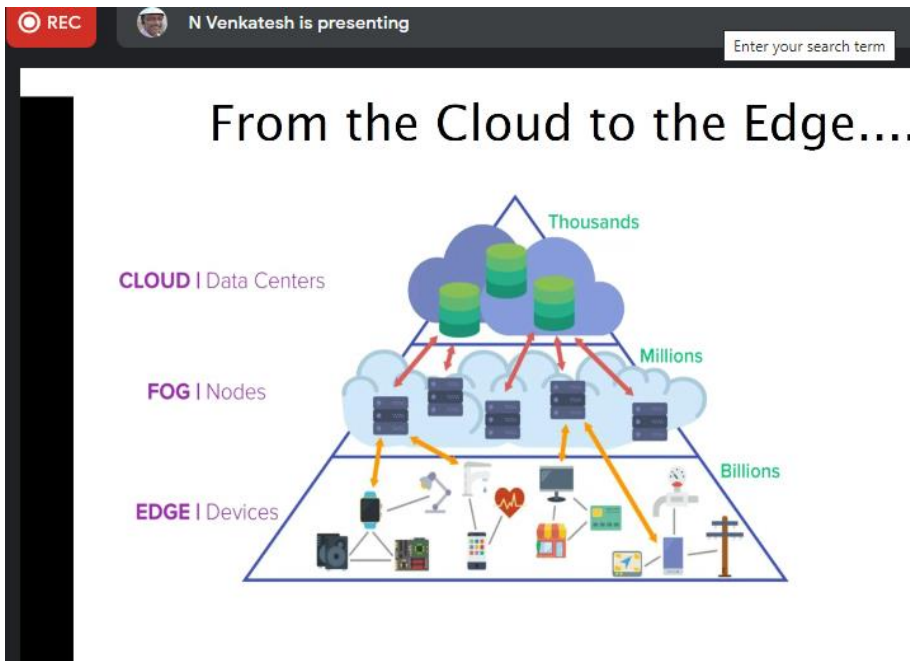
You

15:10 | biy-vrav-uuh

Type here to search

25°C Cloudy

15:10 29-11-2021



AICTE-Distinguished Visiting Professor scheme

Report

Guest Lecture -4

Topic: Battery Life Enhancement in IoT Devices

Date: 30-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the fourth lecture of **Sri. N. Venkatesh**, titled “**Battery Life Enhancement in IoT devices**” between 3.15 PM to 4.15 PM on 30.11.2021 (Tuesday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 95 students along with other faculty attended the lecture making the session great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Mrs. Y. Manasa from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Y. Manasa, Assistant Professor of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance of Battery Life Enhancement in IoT devices. The lecture started with internal devices in IoT and the importance of battery life in IoT.

Gallery

The screenshot shows a Google Meet window with a presentation slide titled "Inside an IoT Device". The slide contains a block diagram of an IoT device. At the center is a "SoC (System-on-Chip)" block containing a "Processor" and "Memory". To the left, "USB" and "Battery Management" are connected to the SoC. To the right, "Bluetooth", "Audio", and "WLAN" are connected. Below the SoC, "AVD" and "Sensors" are connected. A separate box labeled "Software" lists: "Application", "Sensor management", "Connectivity", "Battery Management", and "Configuration". Another box labeled "Accelerometer Pressure Light" is connected to the "Sensors".

15:19 | biy-vrvav-uuh

The screenshot shows a Google Meet window with a presentation slide titled "Battery Life in WLAN – Saving Time". The slide lists the following points:

- Packet duration of a 1.5 kB packet
 - @54 Mbps: 244 us
 - @36 Mbps: 356 us
 - @24 Mbps: 520 us
 - @1 Mbps: > 12 ms!
- Duration of overhead
 - Relatively independent of data rate
- Use of larger packets (802.11n packet aggregation)
 - 4 kB packet @65 Mbps: 532 us

Below the text is a diagram of a "Transfer Cycle" showing the sequence of events: TCP Packet (Rx), SIFS, WLAN ACK (Tx), DIFS, TCP ACK (Rx), SIFS, WLAN ACK (Tx), DIFS, TCP Packet (Rx). The diagram illustrates the interleaving of TCP and WLAN communication.

15:54 | biy-vrvav-uuh