



NEW HORIZON COLLEGE OF ENGINEERING

AUTONOMOUS COLLEGE Permanently Affiliated to VTU. Approved by AICTE & UGC
Accredited by NAAC with 'A' Grade

Department of Electronics and Communication Engineering

15.04.2019

EXPERT LECTURE

The students of IV semester ECE department are hereby informed that
the Expert Lecture is scheduled on

“DSP Processor and Digital Filters”

On 16.04.2019

By

**Mr. Sarang Suresh Akotkar, Deep learning R& D Engineer,
Mr. Kumaran Sethuraman, Deep learning R& D Engineer,
Intel Technology Pvt Ltd, Bengaluru, India.**

S. No	Timings	Semester
1	10.30 AM – 12.30 PM	4 th (A, B & C)

Venue: MBA seminar hall

Note: All the Faculty members are invited to attend the same.

Faculty In charge:

1. Dr. Jayanthi 

2. Ms. Ishani Mishra 

3. Ms. Thanuja 


HoD/ECE

Kumaran Sethuraman

Profile Summary : Delivered excellent contributions towards multiple product delivery include Android based Intel Mobile Phones, Tablets. Recent years focused on Speech, Audio Visual Neural Networks, Fusion methods, Deep Learning, Deep learning hardware accelerators..

Education : M.Tech

Area of Excellence Include:

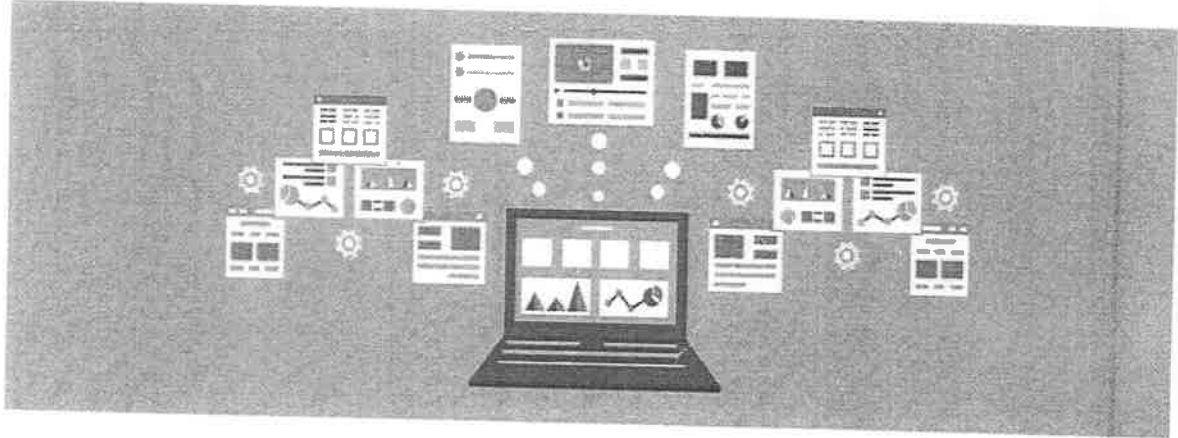
- Multimodal Deep learning system using Audio Visual modality
- Machine Learning

Professional Experience:

17 years of experience in the field of DSP algorithms and complete audio stack development and Machine learning. Expertise in system analysis and performance optimization for real time audio software across platforms.

Additional Skills:

- Excellent in Neural networking tool.
- Have done Research on and created the end to end Audio Visual Speech Recognition system



REPORT ON GUEST LECTURE

~DIGITAL SIGNAL PROCESSING AND REAL TIME APPLICATION IN INDUSTRY

Content delivered by:

Mr. Sarang Suresh Akotkar & Mr. Kumaran Sethuraman

Date: 16/04/2019

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The expert lecture for DSP was held on 16 April 2019 at the MBA seminar hall from 10.30 to 12.30 pm. We had two industry experts from Intel technologies Mr. Sarang Suresh Akotkar and Mr. Kumaran Sethuraman.

They highlighted how DSP manipulates different types of signals with the intention of filtering, measuring, or compressing and producing analog signals. Some of the key points noted from the session were:

1. **A Digital Signal Processor contains four key components:**

- Computing Engine: Mathematical manipulations, calculations, and processes by accessing the program, or task, from the Program Memory and the information stored in the Data Memory.
- Data Memory: This stores the information to be processed and works hand in hand with program memory.
- Program Memory: This stores the programs, or tasks, that the DSP will use to process, compress, or manipulate data.
- I/O: This can be used for various things, depending on the field DSP is being used for, i.e. external ports, serial ports, timers, and connecting to the outside world.

2. **Some of the DSP Filters:**

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- **IIR Filters** (infinite impulse response filter)-IIR filters are typically designed basing on continuous-time transfer functions. IIR filters differ from FIR filters because they always contain feedback elements in the circuit, which can make the transfer functions more complicated to work with.
 - **FIR Filters**- FIR filters are specific to sampled systems. There is no equivalent in continuous-time systems. Therefore, only very specific analog filters are capable of implementing an FIR filter.

3. **Fixed Point vs Floating Point**

Digital signal processing can be separated into two categories - fixed point and floating point. These designations refer to the format used to store and manipulate numeric representations of data. Fixed-point DSPs are designed to represent and manipulate integers – positive and negative whole numbers – via a minimum of 16 bits, yielding up to 65,536 possible bit patterns (2^{16}). Floating-point DSPs represent and manipulate rational numbers via a minimum of 32 bits in a manner similar to scientific notation, where a number is represented with a mantissa and an exponent (e.g., $A \times 2^B$, where 'A' is the mantissa and 'B' is the exponent), yielding up to 4,294,967,296 possible bit patterns (2^{32}).

4. **Applications of DSP:**

- Audio signal processing, audio compression
- digital image processing

- video compression, speech processing, speech recognition
- digital communications, digital synthesizers, radar, sonar, financial signal processing, seismology and biomedicine.

Feedback:

It was very interactive session, well related to the academics and well delivered. Understood the application of Digital Signal Processing in Real time applications and what industry people expect from young engineers like us.

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
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1	1NH16EC038	KARROTU PRUDHVI	A1	
2	1NH17EC001	AARTHY P JAITH	A1	
3	1NH17EC002	ADESH V	A1	
4	1NH17EC003	ADITYA OMPRAKASH CHOUDHARY	A1	<i>Aditya V</i>
5	1NH17EC004	AKSHITHA R	A1	
6	1NH17EC005	ANAND T	A1	<i>Akshitha</i>
7	1NH17EC006	ANAND T	A1	
8	1NH17EC007	ANKIT KUMAR	A1	
9	1NH17EC008	ARUN Y S	A1	<i>Ankit</i>
10	1NH17EC009	B S ABHISHEK	A1	
11	1NH17EC010	B YAMINI	A1	
12	1NH17EC011	BHARATH M	A1	<i>B</i>
13	1NH17EC012	BHARATH Y R	A1	
14	1NH17EC013	BHASKAR K	A1	<i>Bhaskar</i>
15	1NH17EC014	BOGGARAPU MOURYA YASWANTH	A2	
16	1NH17EC015	BOREDDY NAGA MAHESWAR	A2	
17	1NH17EC016	C O PRUTHVI	A2	
18	1NH17EC017	CHANDANA N	A2	<i>Pruthvi</i>
19	1NH17EC018	CHETHAN B R	A2	
20	1NH17EC019	DEEKSHITH N REDDY	A2	
21	1NH17EC020	DEEPAK S	A2	
22	1NH17EC021	DEVASHRUTHA S	A2	
23	1NH17EC022	DHANYASHREE V REDDY	A2	<i>Dhanyashree</i>
24	1NH17EC023	DIVYA SAGAR REDDY	A2	<i>Divya</i>
25	1NH17EC024	DUDDUKURI VAISHNAVI	A2	<i>Vaishnavi</i>
26	1NH17EC025	G ASAD	A2	
27	1NH17EC026	G R VARSHA	A2	<i>Varsha</i>
28	1NH17EC027	GAGAN B K	A2	<i>Gagan</i>
29	1NH17EC028	GAUTAM SINHA	A2	
30	1NH17EC029	GIRIDHARAN P K	A2	
31	1NH17EC030	H K BHASKAR	A2	
32	1NH17EC031	HARSHITHA G	A2	
33	1NH17EC032	IVATURI S S HARSHAVARDHAN	A2	<i>Harsh</i>
34	1NH17EC033	J RUTH SHARON	A2	<i>Sharon</i>
35	1NH17EC034	JERIN JOHNSON	A2	<i>Jerin</i>
36	1NH17EC035	JITENDER	A2	<i>Jitender</i>
37	1NH17EC036	K S SIRISH	A2	
38	1NH17EC037	K S SNEHA LATHA	A2	<i>Sneha</i>
39	1NH17EC038	KARAN SRINIVAS	A3	<i>Karan</i>
40	1NH17EC039	KAVYASHREE S	A3	<i>Kavya</i>
41	1NH17EC040	KEVINE PRASANNA KUMAR	A3	<i>Kavin</i>
42	1NH17EC041	KUSHALA C	A3	

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43	1NH17EC042	M BHARAT		
44	1NH17EC043	M HEMANTH YADAV	A3	<i>Shankar</i>
45	1NH17EC044	MADALA HIMAJA	A3	<i>M. Himaja</i>
46	1NH17EC045	MADHUMITHA R	A3	
47	1NH17EC046	MADHUPARNA BANERJEE	A3	<i>Madhumitha</i>
48	1NH17EC047	MAMATHA B S	A3	<i>(MB)</i>
49	1NH17EC048	MANIKANTA	A3	
50	1NH17EC049	MANISH B	A3	<i>Manish B</i>
51	1NH17EC050	MANISHA R	A3	
52	1NH17EC051	MILAN SHANKAR RAO M	A3	
53	1NH17EC052	MOHAMMED GHASSAN	A3	<i>Muhammed</i>
54	1NH17EC053	MONIKA K REDDY	A2	<i>Monika</i>
55	1NH17EC054	NANDURI SRILASYA	A3	<i>Monika</i>
56	1NH17EC055	NAVAJITH R REDDY	A3	
57	1NH17EC056	NAVEEN K M	A3	
58	1NH17EC057	NETTEM PARNITHA	A3	<i>Naveen</i>
59	1NH17EC058	NIKITH BABU	A3	
60	1NH17EC059	NISHANTH C	A3	<i>Nikitha</i>
61	1NH17EC127	SUMAN PAL	A3	<i>Suman Pal</i>
62	1NH17EC128	SUHAIL PASHA	A1	<i>Suman Pal</i>
63	1NH17EC129	BATHULA SRI SAI KRISHNA	A1	<i>f</i>
64	1NH17EC130	ANISHA DEVI	A1	
65	1NH17EC131	ASHWIN S P	A1	<i>Anisha</i>
66	1NH17EC132	MURAKONDA AVINASH	A3	<i>Avinash</i>
67	1NH17EC133	THURPUNATI SURYA PRAKASH	A1	
68	1NH17EC135	SAI KARTHIK P R	A1	
69	1NH17EC137	GANGADHARA VARSHITHA	A1	
70	1NH18EC405	Charan S	A3	
71	1NH18EC407	Nagesh N Reddy	A1	<i>Charan S</i>
72	1NH18EC408	Pragati Shrinivas Naik	A1	<i>Pragati</i>
73	1NH18EC409	Prashant Joshi	A3	
74	1NH18EC410	Ravi S	A3	<i>Ravi</i>
75	1NH18EC414	Santosh B Gonal	A2	<i>Santosh</i>
76	1NH18EC417	Spoorthi S T	A1	<i>Spoorthi</i>
77	1NH18EC418	Swaroop M R	A1	
78	1NH18EC421	Vinod K	A1	<i>Vinod</i>
79	1NH18EC422	Yashwanth N K	A2	<i>Yashwanth</i>
80	1NH18EC424	Naveen N	A3	<i>Naveen</i>
81	1NH18EC425	Nikhil Gopal Krishna Sirsikar	A3	<i>Nikhil Gopal</i>
82	1NH18EC428	Sandeep Reddy V	A2	<i>Sandeep</i>
83	1NH18EC432	Vishal Nayak	A1	

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1	1NH17EC060	NISHMITHA C SHETTY	B1	Nishmitha
2	1NH17EC062	NITHIN R KALLIGUDI	B1	
3	1NH17EC063	PALAGIRI JYOTHI KRISHNA	B1	
4	1NH17EC064	PANUGANTI VIKAS	B1	Vikas
5	1NH17EC065	PARTHASARATHI N	B1	Parthasarathi
6	1NH17EC066	PASSAVULA PHANINDRA	B1	Phanindra
7	1NH17EC068	PRANAY CHATURVEDY	B1	Pranay
8	1NH17EC069	PRAVEEN KUMAR S	B1	
9	1NH17EC070	PREETHU C	B1	Preethu
10	1NH17EC071	PRINCE CHAURASIYA	B1	Prince
11	1NH17EC072	PUNEETH REDDY V	B1	Puneeth
12	1NH17EC073	R BARATH	B1	Barath
13	1NH17EC074	R KISHAN KUMAR SAI	B1	Kishan
14	1NH17EC075	R RAGHAVA	B1	
15	1NH17EC076	RAHUL MONDAL	B1	
16	1NH17EC077	RAHUL V	B1	
17	1NH17EC078	RAVI KIRAN M B	B1	
18	1NH17EC079	RENUKA D N	B1	Renuka
19	1NH17EC080	RIYA RAKESH	B1	Riya
20	1NH17EC081	ROHITH P GOWDA	B1	Rohith
21	1NH17EC082	RUPSA DATTA	B1	
22	1NH17EC083	S RISHITA	B1	Rishita
23	1NH17EC084	SAIKAT SAMANTA	B2	Saikata
24	1NH17EC085	SAIMANTI SAHA	B2	
25	1NH17EC086	SAMYUKTHA V	B2	
26	1NH17EC087	SATEESH R HEGDE	B2	Sateesh
27	1NH17EC088	SHAKTHI A	B2	Shakthi
28	1NH17EC089	SHALINI P N	B2	Shalini
29	1NH17EC090	SHARAN KUMAR K S	B2	Sharan
30	1NH17EC091	SHIVA S	B2	Shiva
31	1NH17EC092	SHOAIB AHMED	B2	Shoib
32	1NH17EC093	SHRESTHA PATNAIK	B2	
33	1NH17EC094	SHREYANKA S	B2	Shreyanka
34	1NH17EC095	SHWETA S	B2	Shweta
35	1NH17EC096	SOUVIK DAS	B2	Souvik Das
36	1NH17EC097	SOWMIYA A	B2	Sowmiya
37	1NH17EC098	SRINIDHI DAMODHAR	B2	Srinidhi
38	1NH17EC099	STANISLAUS LASRADO	B2	Stanislaus
39	1NH17EC100	SUHAIB AFNAN	B2	
40	1NH17EC101	SUHAS H G	B2	
41	1NH17EC102	SUHAS S P	B2	Suhas S P
42	1NH17EC103	SUMITHRA V ARADHYA	B2	

43	1NH17EC104	SUNIL PATIL	B2	<i>[Signature]</i>
44	1NH17EC105	SUSHMA S	B2	<i>Sushma S</i>
45	1NH17EC106	SYALE RAJ KUMAR	B2	<i>Raj Kumar</i>
46	1NH17EC107	TALLURI VENKATA VARUN SAI	B2	<i>Varun Sai</i>
47	1NH17EC108	TEJAS K	B3	
48	1NH17EC109	THEJAS U	B3	
49	1NH17EC110	THIKKAVARAPU SAI AVINASH R	B3	<i>Avinash</i>
50	1NH17EC111	THOMMANDRU VENKATA SAI M	B3	<i>Sai M</i>
51	1NH17EC112	UPPU GIRIDHAR	B3	
52	1NH17EC113	V DHARANIDHAR	B3	<i>[Signature]</i>
53	1NH17EC114	V R SAI LAALITHYA	B3	<i>[Signature]</i>
54	1NH17EC115	V S MOUNIKA	B3	<i>Visnu</i>
55	1NH17EC116	VAKKALA MAHEEDHAR	B3	
56	1NH17EC117	VIDHYA B	B3	<i>Vidhya</i>
57	1NH17EC118	VIDHYASHREE B M	B3	<i>[Signature]</i>
58	1NH17EC119	VINDHYA NARAYAN	B3	
59	1NH17EC120	VISHWAJYOTHI B RESHMI	B3	<i>Vishwajyothi</i>
60	1NH17EC122	Y C ABHAY KUMAR	B3	
61	1NH17EC123	YADHEESH	B3	
62	1NH17EC124	YASH MALVIYA	B3	<i>Yash</i>
63	1NH17EC125	YASSER FAIZ AHMED N	B3	<i>Yasser</i>
64	1NH17EC126	VAISHALI M S	B3	
65	1NH17EC134	SALLA GUNA PRADEEP	B3	<i>Guna</i>
66	1NH17EC136	GADE NAVEEN REDDY	B3	<i>Naveen</i>
67	1NH17EC138	SYKAM KARTHIK REDDY	B3	
68	1NH17EC139	NEELA LOKESH	B3	
69	1NH18EC400	Aakash Singh N	B3	
70	1NH18EC401	Abishek N S	B1	<i>Abishek</i>
71	1NH18EC403	Akhilesh Venkappa Kshatri	B2	<i>[Signature]</i>
72	1NH18EC404	Bhanu Priya N	B3	
73	1NH18EC412	Sagar V	B3	
74	1NH18EC413	Sanjay P	B1	<i>P. Sanjay</i>
75	1NH18EC416	Shreekanta K S	B1	<i>Shreekanta</i>
76	1NH18EC420	Vignesh R	B3	
77	1NH18EC423	Bindushri K	B2	<i>Bindu</i>
78	1NH18EC426	Niveditha Y N	B2	
79	1NH18EC427	Pavan Y	B1	<i>Pavan</i>
80	1NH18EC429	Sheshadhara Hegde	B3	<i>[Signature]</i>
81	1NH18EC430	Shrenik A Ugar	B1	<i>Shrenik</i>
82	1NH18EC431	Srilakshmi N	B1	<i>Lakshmi</i>

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2	1NH16EC065	NILOTHPAL	C3	
3	1NH16EC140	Karthik K	C3	
4	1NH16EC701	A NAVYA SHREE	C3	<i>Kate</i>
5	1NH17EC700	AATHIRA VIJAYAN	C1	<i>newshree</i>
6	1NH17EC701	AJAY S	C1	<i>Ajay</i>
7	1NH17EC702	AKSHAJA SHIMALNA O K	C1	<i>Akshaya</i>
8	1NH17EC703	ARAVIND P M	C1	
9	1NH17EC704	ASHIKA P	C1	
10	1NH17EC705	BHARGAVI	C1	
11	1NH17EC706	CHANDU V J	C1	
12	1NH17EC707	DHANUSH S	C1	
13	1NH17EC708	DHINAKARAN S	C1	
14	1NH17EC709	DISHANTH M P	C1	
15	1NH17EC710	G DEEPIKA	C1	<i>Deepika</i>
16	1NH17EC711	GAGANASHREE P S	C1	<i>Gagan</i>
17	1NH17EC712	GRACE GLADYS A	C1	<i>Grace</i>
18	1NH17EC713	HARSHITH NAIDU J	C1	<i>Harshith</i>
19	1NH17EC714	J BHAVANA	C1	<i>Bhavana</i>
20	1NH17EC715	JAYADEEP G P	C1	<i>Jayadeep</i>
21	1NH17EC716	JILLELLA RUPASAGAR REDDY	C1	<i>Jillella</i>
22	1NH17EC717	K AISWARYA	C1	<i>Kaiswarya</i>
23	1NH17EC718	KONDURU SIVARAMA RAJU	C1	<i>Konduru</i>
24	1NH17EC719	KOTEPALLI RAMCHARAN	C1	<i>Kotepalli</i>
25	1NH17EC720	LAVANYA S N	C2	<i>Lavanya</i>
26	1NH17EC721	MANISHA M N	C2	<i>Manisha</i>
27	1NH17EC722	MANOHAR G	C2	<i>Manohar</i>
28	1NH17EC723	MANOJ M R	C2	<i>Manoj</i>
29	1NH17EC724	MUNAGALA BHARATH KUMAR	C2	
30	1NH17EC725	NAINI NARAMA	C2	
31	1NH17EC726	NAVEEN KUMAR M S	C2	
32	1NH17EC727	NEHA KRISHNA	C2	<i>Neha</i>
33	1NH17EC728	NIDUJUUVI CHAKRADHAR	C2	<i>Nidujuvvi</i>
34	1NH17EC729	NIKHIL DWIVEDI	C2	<i>Nikhil</i>
35	1NH17EC730	P K KANAKA SHARANYA	C2	<i>Sharanya</i>
36	1NH17EC731	PALVADHI VENKATA SAI PAVAN	C2	<i>Palvathi</i>
37	1NH17EC732	PAVAN U	C2	<i>Pavan</i>
38	1NH17EC733	PRACHI VERMA	C2	<i>Prachi</i>
39	1NH17EC734	PRAJWAL P	C2	

40	1NH17EC736	RAHUL BALAJI P S	C2	
41	1NH17EC737	RISHIKA POTEPELLI	C2	
42	1NH17EC738	RITWIK SHOME	C2	
43	1NH17EC739	S DENILA GRACELIN	C2	
44	1NH17EC740	S RAHUL YADAV	C2	
45	1NH17EC741	S SAI HARSHA	C3	
46	1NH17EC742	SAHIB ARORA	C3	
47	1NH17EC743	SANDHYA K	C3	
48	1NH17EC744	SHARATH T P	C3	
49	1NH17EC745	SHARON MOSES	C3	
50	1NH17EC746	SHASHANK REDDY J	C3	
51	1NH17EC747	SHASHANK S SALOTAGI	C3	
52	1NH17EC748	SHIVANG DUBEY	C3	
53	1NH17EC749	SIRISHA B S	C3	
54	1NH17EC750	SOMA YASWANTH REDDY	C3	
55	1NH17EC751	SREEKAR REDDY KALLAM	C3	
56	1NH17EC752	SUHAS S	C3	
57	1NH17EC753	SYED TOUQEER	C3	
58	1NH17EC754	THUMMALA SURYA DEVI	C3	
59	1NH17EC755	USTHEPALLI ABHIRAM	C3	
60	1NH17EC756	VARUN P	C3	
61	1NH17EC757	VELURI SRI HARSHAVARDHAN	C3	
62	1NH17EC758	Y SUCHARITHA	C3	
63	1NH17EC759	YERRABALLI GURU SAI KUMAR	C3	
64	1NH18EC402	Aiyappa K K	C3	
65	1NH18EC406	Harshitha M	C3	
66	1NH18EC411	Roja Parameshwar Ullikashi	C3	
67	1NH18EC415	Sathyaprasada G P	C3	
68	1NH18EC419	Tejaswini T R	C3	

69 1NH18EC415 Debbur Mahapetra C2



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