S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY CAMPUS

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Ahmedabad – Mehsana Highway,
Linch, Mehsana – 384435
Email: info@saffrony.ac.in
Web: www.saffrony.ac.in
Phone : (02762) 285721

CYCLE 1
NAAC Accreditation 2023

ACADEMIC YEAR
2020-21

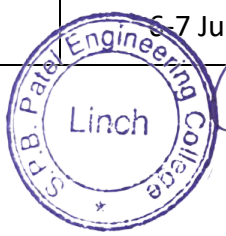
Submitted to

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

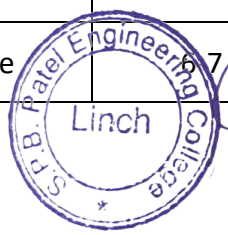
6.3.3 Percentage of teaching and non-teaching staff participating in Faculty development Programmes (FDP), Management Development Programmes (MDPs) professional development /administrative training programs during the last five years

Academic Year 2020-21

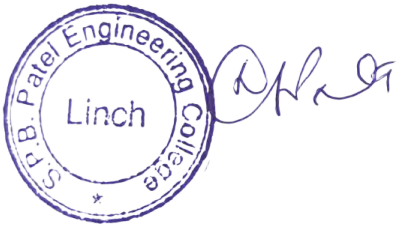
Sr. No.	Name of the participant	Title of the FDP /MDP/ professional development / administrative training program	Dates (from-to) (DD-MM-YYYY)
1	Bhupendra Lalitbhai Bhatt	NPTEL - Introduction To Fluid Mechanics	Jan - April 2020
2	Bhupendra Lalitbhai Bhatt	NPTEL - Gear And Gear Unit Design : Theory And Practice	Feb - April 2020
3	Bhupendra Lalitbhai Bhatt	NPTEL - Laws of Thermodynamics	Jan - Feb 2020
4	Karishma Panchal	MDP - Leading with purpose	6-7 July 2020
5	Krunalkumar Prajapati	MDP - Leading with purpose	6-7 July 2020
6	Ekta Pran Shanker Joshi	MDP - Leading with purpose	6-7 July 2020
7	Ravi Prakashbhai Dal	MDP - Leading with purpose	6-7 July 2020
8	Tushar Himanshubhai Panchal	MDP - Leading with purpose	6-7 July 2020
9	Jigneshkumar Vishnubhai Kadia	MDP - Leading with purpose	6-7 July 2020
10	Nirav Ratilal Joshi	MDP - Leading with purpose	6-7 July 2020
11	Chetankumar Rameshbhai Mordiya	MDP - Leading with purpose	6-7 July 2020
12	Kapil Kantibhai Dayma	MDP - Leading with purpose	6-7 July 2020
13	Kumkum Bhattacharya	MDP - Leading with purpose	6-7 July 2020
14	Akhil Venkat Patnaik	MDP - Leading with purpose	6-7 July 2020
15	Ankitkumar Ravat	MDP - Leading with purpose	6-7 July 2020
16	Kishan Ajaykumar Vaghela	MDP - Leading with purpose	6-7 July 2020
17	Rajkumar Tarachand Rajai	MDP - Leading with purpose	6-7 July 2020



Sr. No.	Name of the participant	Title of the FDP /MDP/ professional development / administrative training program	Dates (from-to) (DD-MM-YYYY)
18	Jaimin Harshadray Jani	MDP - Leading with purpose	6-7 July 2020
19	Prashant Bhagwan Parashar	MDP - Leading with purpose	6-7 July 2020
20	Anurag Rajender Chandnani	MDP - Leading with purpose	6-7 July 2020
21	Yuvrajsinh Dharmendrasinh Parmar	MDP - Leading with purpose	6-7 July 2020
22	Dr. Narshi Khodabhai Sherasia	MDP - Leading with purpose	6-7 July 2020
23	Kunalsinh Ranjitsinh Kathia	MDP - Leading with purpose	6-7 July 2020
24	Dr. Pooja Jayeshbhai Mehta	MDP - Leading with purpose	6-7 July 2020
25	Jay Paragbhai Parikh	MDP - Leading with purpose	6-7 July 2020
26	Avinash Vikrambhai Patel	MDP - Leading with purpose	6-7 July 2020
27	Piyush Dineshbhai Mistry	MDP - Leading with purpose	6-7 July 2020
28	Palak Rajeshbhai Godhani	MDP - Leading with purpose	6-7 July 2020
29	Yashkumar Pareshbhai Patel	MDP - Leading with purpose	6-7 July 2020
30	Dr. Arun Shreeprakash Pandey	MDP - Leading with purpose	6-7 July 2020
31	Jagdish Mohanbhai Mevada	MDP - Leading with purpose	6-7 July 2020
32	Chintan Tuljashankar Mehta	MDP - Leading with purpose	6-7 July 2020
33	Utsav Minesh Shah	MDP - Leading with purpose	6-7 July 2020
34	Pranoti Chandrashekhar Kale	MDP - Leading with purpose	6-7 July 2020
35	Nisarg Vijaykumar Prajapati	MDP - Leading with purpose	6-7 July 2020
36	Navin Ramnivas Bansal	MDP - Leading with purpose	6-7 July 2020
37	Dr. Laxmanbhai Narsinhbhai Patel	MDP - Leading with purpose	6-7 July 2020
38	Nashifa Mohmadshafi Shaikh	MDP - Leading with purpose	6-7 July 2020
39	Krinaben Sanjaykumar Shah	MDP - Leading with purpose	6-7 July 2020



Sr. No.	Name of the participant	Title of the FDP /MDP/ professional development / administrative training program	Dates (from-to) (DD-MM-YYYY)
40	Dhruv Vimalkumar Bhatt	MDP - Leading with purpose	6-7 July 2020
41	Maulik Pravinbhai Patel	MDP - Leading with purpose	6-7 July 2020
42	Avani Dedhia	Applied Data Science using Python Programming & Excel	17-06-2020 to 29-06-2020
43	Akshay Kansara	Online Short Term Course on Recent Trends in Machine Learning: An Industry Perspective	08-11-2020 to 12-11-2020
44	Avani Dedhia	Emerging Software in Civil Engineering	07-12-2020 to 11-12-2020
45	Hima Soni	Five Days Workshop on AI in Healthcare Economics Outcome Research	02-04-2021 to 06-04-2021



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Roll No: NPTEL20ME22S1280829

To
BHUPENDRA BHATT
GNAN B 122, SIMANDHAR CITY, TRIMANDIR ,
ADALAJ, GANDHINAGAR.GUJARAT
ADALAJ, GANDHINAGAR.
GANDHINAGAR
GUJARAT - 382421
PH. NO :9574009998

No. of credits recommended by NPTEL:3
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

Covid-19 impacted January 2020 semester

This certificate is awarded to

BHUPENDRA BHATT

for passing the course

Introduction to Fluid Mechanics

*with Score** **92** %

A. Goswami

Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Jan-Apr 2020
(12 week course)

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

*Continuous online assessment score

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Roll No: NPTEL20ME18S1020425

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ADALAJ, GANDHINAGAR.
GANDHINAGAR
GUJARAT - 382421
PH. NO :9574009998

No. of credits recommended by NPTEL:2
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

Covid-19 impacted January 2020 semester

This certificate is awarded to

BHUPENDRA BHATT

for passing the course

Gear and Gear Unit Design : Theory and Practice

*with Score** **91** %

A. Goswami

Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Feb-Apr 2020
(8 week course)

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

*Continuous online assessment score

To validate and check scores: https://nptel.ac.in/noc

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Roll No: NPTEL20ME20S1840902

To

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ADALAJ, GANDHINAGAR.
GANDHINAGAR
GUJARAT - 382421
PH. NO :9574009998

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

Covid-19 impacted January 2020 semester

This certificate is awarded to

BHUPENDRA BHATT

for passing the course

Laws of Thermodynamics

*with Score** **100** %

A. Goswami

Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Jan-Feb 2020
(4 week course)

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

*Continuous online assessment score

To validate and check scores: https://nptel.ac.in/noc

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

CERTIFICATE

OF PARTICIPATION

This certificate is proudly presented to

Jagdish Mohanbhai Mevada

for participating in the **MDP - Leading with purpose** program during **6-7 July 2020**, at Saffrony Institute of Technology.

Dr. Narsi Sherasia
Principal (Degree)

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This certificate is proudly presented to

Chintan Tuljashankar Mehta

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This certificate is proudly presented to

Utsav Minesh Shah

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This certificate is proudly presented to

Pranoti Chandrashekhar Kale

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This certificate is proudly presented to

Nisarg Vijaykumar Prajapati

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This certificate is proudly presented to

Navin Ramnivas Bansal

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This certificate is proudly presented to

Dr. Laxmanbhai Narsinhbhai Patel

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This certificate is proudly presented to

Nashifa Mohmadshafi Shaikh

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This certificate is proudly presented to

Krinaben Sanjaykumar Shah

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This certificate is proudly presented to

Dhruv Vimalkumar Bhatt

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This certificate is proudly presented to

Maulik Pravinbhai Patel

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This certificate is proudly presented to

Karishma Panchal

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This certificate is proudly presented to

Krunalkumar Prajapati

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Ekta Pran Shanker Joshi

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This certificate is proudly presented to

Ravi Prakashbhai Dal

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This certificate is proudly presented to

Tushar Himanshubhai Panchal

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This certificate is proudly presented to

Jigneshkumar Vishnubhai Kadia

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This certificate is proudly presented to

Nirav Ratilal Joshi

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This certificate is proudly presented to

Chetankumar Rameshbhai Mordiya

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This certificate is proudly presented to

Kapil Kantibhai Dayma

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This certificate is proudly presented to

Kumkum Bhattacharya

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Akhil Venkat Patnaik

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This certificate is proudly presented to

Ankitkumar Ravat

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Kishan Ajaykumar Vaghela

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Jaimin Harshadray Jani

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Prashant Bhagwan Parashar

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Anurag Rajender Chandnani

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Yuvrajsinh Dharmendrasinh Parmar

for participating in the **MDP - Leading with purpose** program during **6-7 July 2020**, at Saffrony Institute of Technology.

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This certificate is proudly presented to

Dr. Narshi Khodabhai Sherasia

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Kunalsinh Ranjitsinh Kathia

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This certificate is proudly presented to

Dr. Pooja Jayeshbhai Mehta

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Jay Paragbhai Parikh

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Avinash Vikrambhai Patel

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This certificate is proudly presented to

Piyush Dineshbhai Mistry

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This certificate is proudly presented to

Palak Rajeshbhai Godhani

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Yashkumar Pareshbhai Patel

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This certificate is proudly presented to

Dr. Arun Shreeprakash Pandey

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SAFFRONY INSTITUTE OF TECHNOLOGY CAMPUS

Report on Five Days STTP Recent Trends in Machine Learning : Industry Perspective

Name of Resource Person, Designation and session details :-

Day	Date and Time	Title	Speaker
1	08/11/2020 1 pm -3 pm	ML industry case studies and practical tips	Mr. Falak Shah, Lead Research Scientist/ ML Research lead at InFoCusp
	08/11/2020 4 pm -6 pm	Beyond just Algorithms: Identifying and Approaching an ML problem in Industry	Mr. Peddakota Vikash, Data Scientist, ShareChat
2	09/11/2020 1 pm -3 pm	An industry perspective on Speech Processing	Mr. Meet Soni, Researcher, TCS Research and Innovation
	09/11/2020 4 pm -6 pm	Automatic Speech Recognition: from theory to applications	Dr. Hardik Sailor, Lead Senior Engineer, Samsung Research Institute Bangalore
3	10/11/2020 1 pm -3 pm	Mining Biomedical and Clinical Texts for Efficient Retrieval of Clinical Trials	Dr. Manjira Sinha, Assistant Professor, CET, IIT Khargpur, Dr. Tirthankar Dasgupta, Scientist, Innovation Lab, Tata Consultancy Services
	10/11/2020 4 pm -6 pm	Extracting Concepts and Relations from Textual Documents	Dr. Sourish Dasgupta Founder and CEO Rygbee and Professor at DAIICT

4	11/11/2020 1 pm -3 pm	Machine Learning for Biomedical Signals	Dr. Udit Satija, Assistant Professor, IIT Patna
	11/11/2020 4 pm -6 pm	Trends in Hardware Design for Audio/Speech Neural Network Applications	Dr. Nilesh Vaishnav, Lead Design Engineer, Cadence Design Systems, Audio R&D Group
5	12/11/2020 1 pm -3 pm	Neural Text Summarization: Bridging the gap between best practices in academia and industry	Dr. Parth Mehta, NLP Research Scientist, Parmonic
	12/11/2020 4 pm -6 pm	Knowledge Extraction from Text Narratives and its Applications	Mr. Nitin Ramrakhiyani, Researcher, (TRDDC), Dr. Sachin Pawar, Researcher, (TRDDC)

Date: 8th November to 12th November, 2020
Duration: 01:00 pm to 03:00 pm & 04:00 pm to 06:00 pm
Venue: Online Webinar - Google Meet
No. of Participants: 20

Introduction and Objective:

With respect to time, technology has transformed our daily lives one or other ways. Due to technology evaluations in the current industry era,we have got so many tools and resources, all the useful information at our fingertips where it has become more effective but at the same time challenging by learning and adopting different technologies.
Modern technology has covered the way for multi-functional devices. Computers are becoming faster, more portable, and higher-powered than ever before. With all of these revolutionary changes, it has become a need of time to get updated and adopt all such technological changes at all the aspects.
The main objective of attending this STTP was to get more insights about the technology evolvement in the industry with the latest technologies such as Machine Learning, Natural Language Processing, Neural Network etc., how it has changed the work environment, how it is increasing the efficiency and effectiveness at the same time and how industry is using such technologies.

Workshop details:
STTP started with the orientation of all the sessions where Dr. Kamal Captain and Dr. Kirti Inamdar from the Electronics Engineering department welcomed all the participants. They gave a brief introduction about the STTP, motivations behind the STTP and introduced experts. They also explained the flow of all the sessions.

Session - 1 (8th December 2020) : ML industry case studies and practical tips (Mr. Falak Shah, Lead Research Scientist/ ML Research lead at InFoCusp)

The first session was about the different Machine Learning case studies and practical tips by Mr. Falak Shah where he covered following topics

- Overview of Machine Learning Project at InFoCusp
- Machine learning/Deep Learning Projects in pipeline
- Useful libraries in Python
- Industry case studies
- Kaggle environment
- Practical tips for using Machine Learning for problem solving

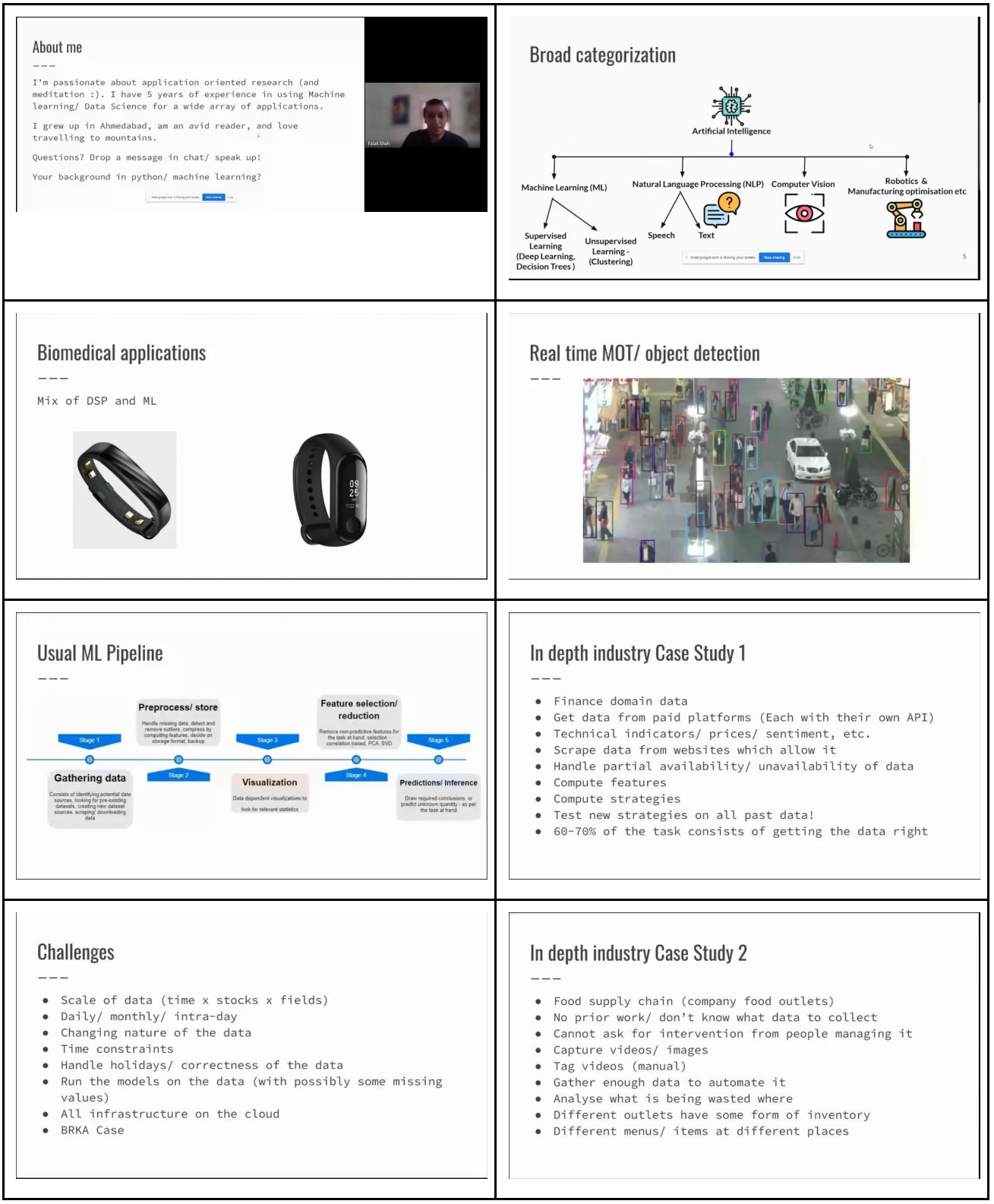
Mr. Falak Shah started the session with basics of AI and different categories , some legality about the documents in industry and different libraries. After that he showed different applications like Biomedical applications, Real time multiple object detection techniques, VQA (Visual Question Answering) project where he used Machine Learning and Deep Learning, based on image and question mentioned below that image machine first understands the image and question after that if gives answers. He explained the whole process, how questions breakdowns, filtering process, identification of parts from image(material, size and shape).

He shared about Identifying/separating recyclable polymer case study as one of the projects where he used deep learning techniques for reflectance patterns of polymer gathered. He discussed the data sets and code for that.

He discussed the Machine Learning pipeline with different stages.Then he suggested different libraries such as Scikit-learn, Pandas, Keras/ Tensorflow/Pytourch, Matplotlib/Seaborn/PyQT, NumPY, OpenCV,NLTK,PYCVx etc.

At last he shared different case studies with work flow and challenges with data models, data sets and work environments.Overall session was very informative.

My key learning from the session for me were different applications using Machine Learning/Deep Learning, projects, Python libraries, Kaggle environment and how to use and case studies with challenges. He also discussed the questions raised by all of us.



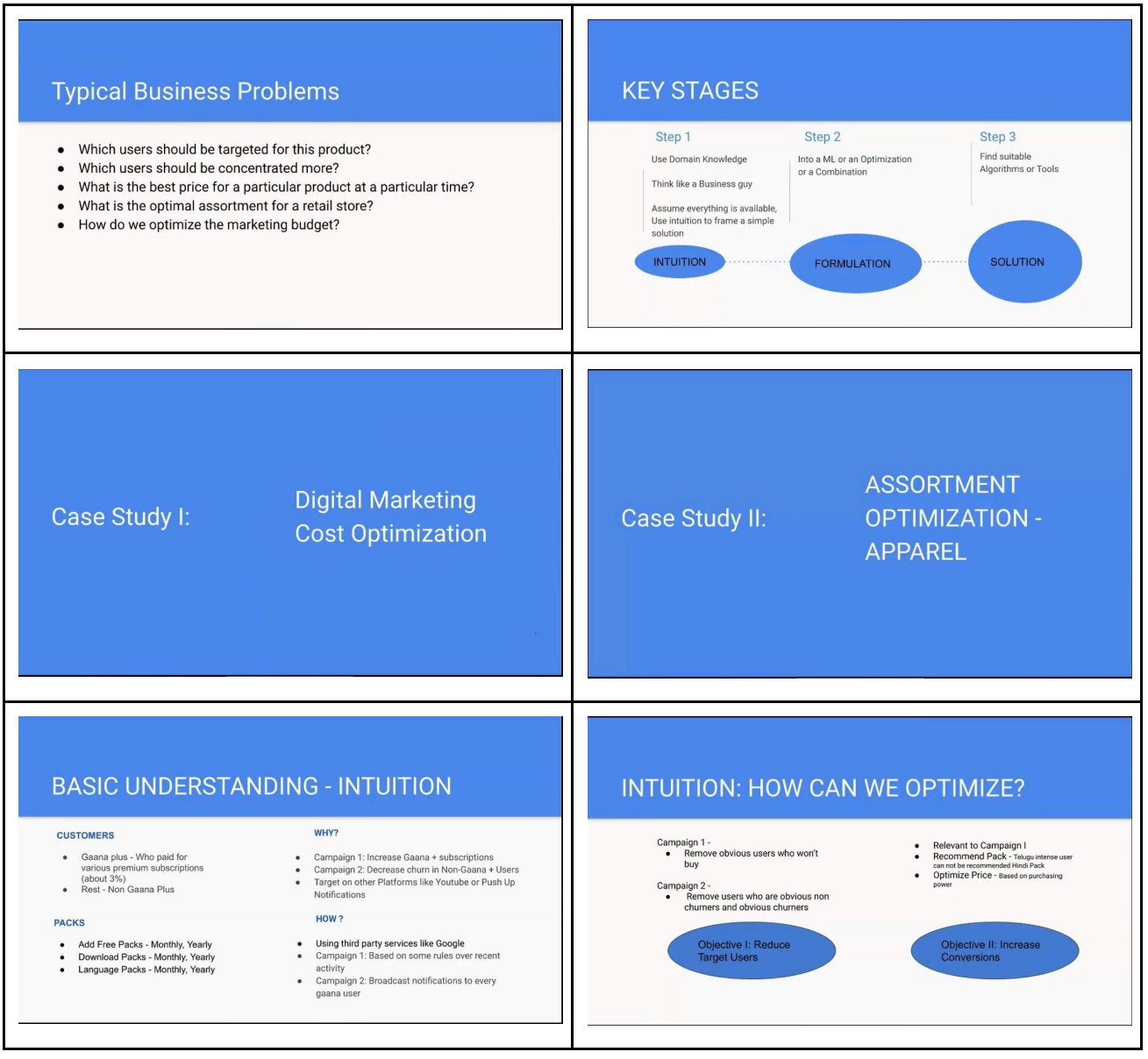
Session - 2 (8th December 2020) : Beyond just Algorithms: Identifying and Approaching an ML problem in Industry (Mr. Peddakota Vikash, Data Scientist, ShareChat)

The second session was about the various approaches of Machine Learning in industry with algorithms where he started with typical business problems such as which users should be targeted, best price for a particular product at a particular time, optimal assortment in retails stores and how to optimize the budget.

He explained key stages of machine learning solutions in the discussed problems like domain knowledge(intuition),optimization using Machine Learning(Formulation) and finding suitable algorithms (solutions) with examples where he discussed conversion model, recommendation model and Churn model using binary classifiers, muslit class classifiers .

He discussed future engineering with examples and features related to them using models. He also mentioned how to use models.Then he discussed Assortment Optimization apparel with formulation and key components. He shared different other models, candidate generators for video users,wide and deep models.
Overall session was informative and with real life examples where we can relate the applications in terms of algorithms and models implementations towards it.

My key learnings from sessions were different key stages to solve problems, both the case studies with models like Churn model, how to use Deep learning in recommendation systems, use of wide and deep models and Neural collaborative filtering with Youtube examples.



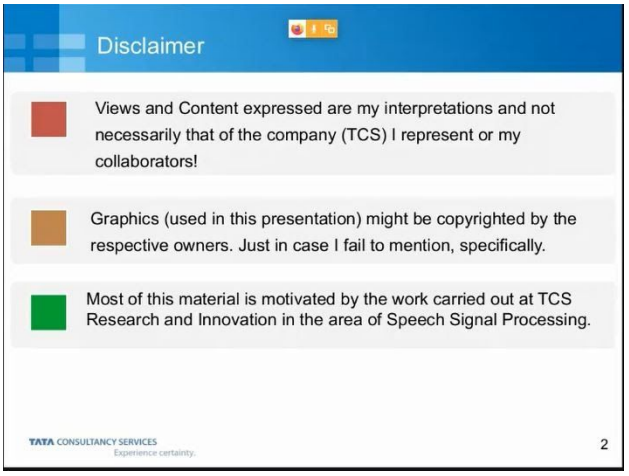
Session - 3 (9th December 2020) : An industry perspective on Speech Processing (Mr. Meet Soni, Researcher, TCS Research and Innovation)

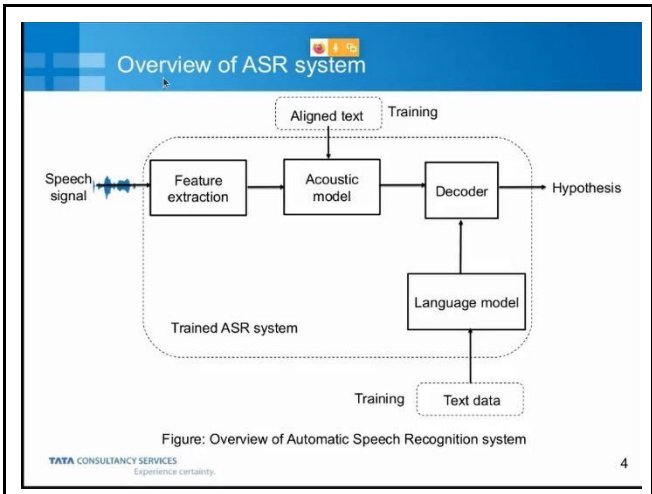
The session started with the speech processing work and research so far he has gone through and different challenges. He discussed different speech recognition services like Google Assistant, Alexa, Siri etc helping in searching services.

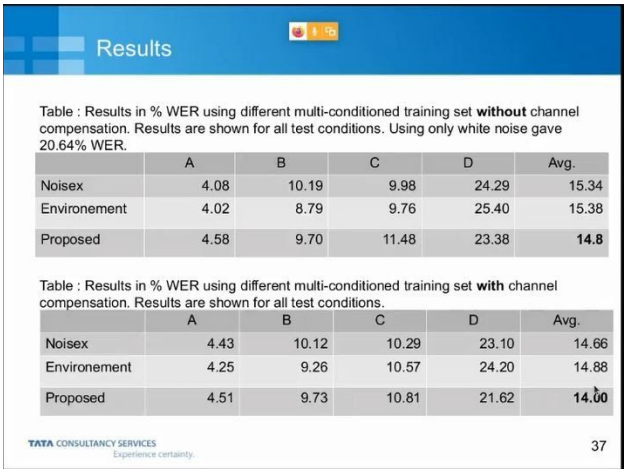
He shared how TCS and his team is working on a Speech Recognition system for different projects. He discussed the basics of Automatic Speech recognition system, identification of problems, popular approaches, potential solutions based on various research papers, limitations of current approaches. After that he explained the feature selection and extractions process using Short time Fourier Transform, Mel filtering. He discussed results based on the experiments which they have done. He discussed pipeline deployment using ASR such as Web based and Android based projects. He shared useful tools for development of ASR tools like Kaldi, ESPNet, Wav2letter. He shared useful tools for deployment like VOSK, Gstream server. He also shared technologies like Websockets and Docker containers.

Overall session was informative and we got to know how TCS is working on the ASR system. We also came to know what kind of different researches are helpful.

My key learnings from the session were ASR system, Feature selection and extraction, how to select features, Short time fourier concepts, different tools and technologies in the ASR development and at last how they have got the results about their work and their success.







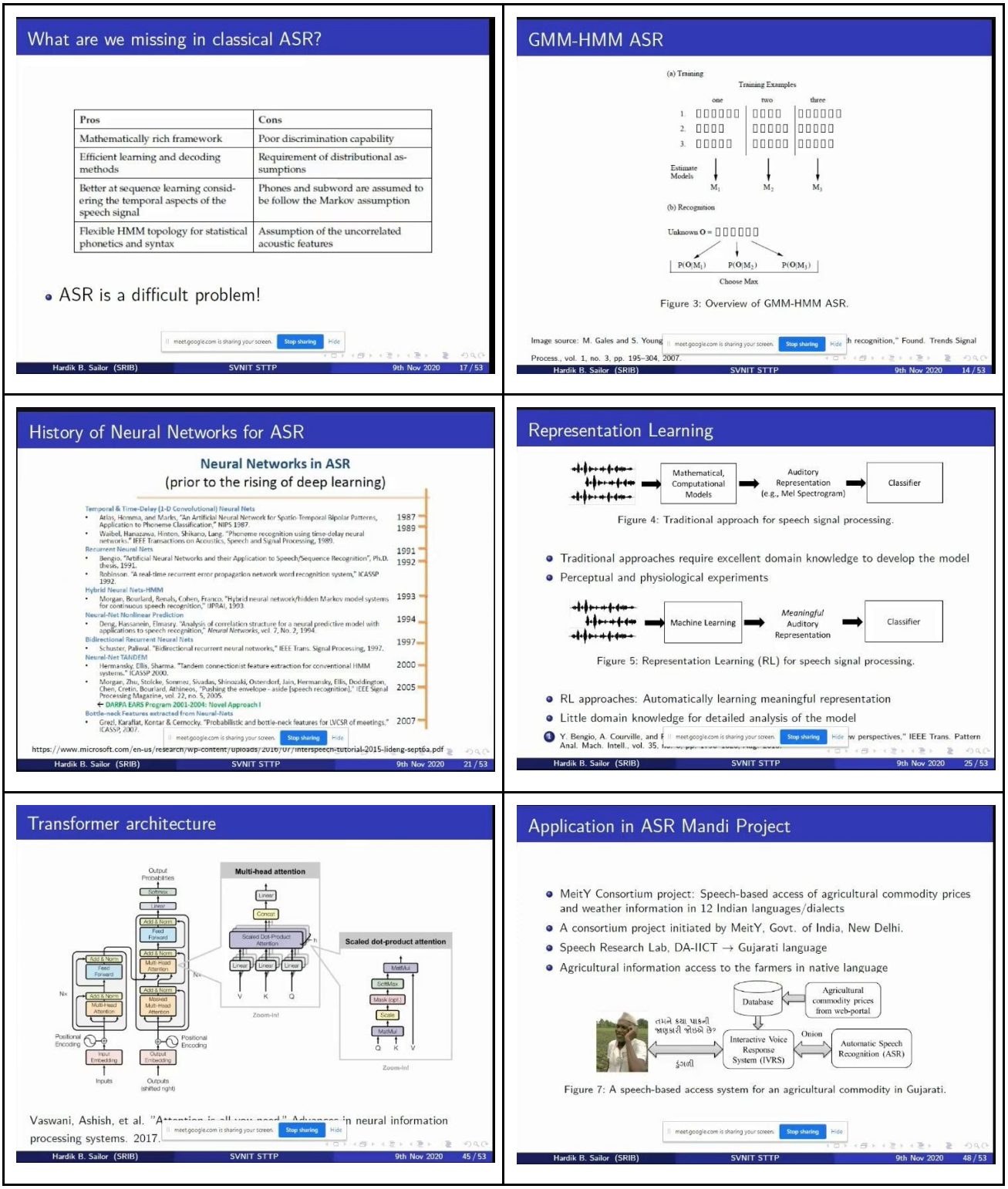
Session - 4 (9th December 2020) : Automatic Speech Recognition: from theory to applications
(Dr. Hardik Sailor, Lead Senior Engineer, Samsung Research Institute Bangalore)

The session started with the basics of ASR which was discussed in the previous session and what are the missing components in that. He discussed GMM (Gaussian Mixture Model), HMM (Hidden Markov Model) in the ASR system and Language modeling used in Google search. After that he introduced the impact of Deep Learning on ASR systems, history of Neural Network in ASR, how Deep Learning is useful with DNN (Deep Neural Network) from GMM-HMM to DNN-HMM.

He discussed RL (Representation Learning) and shared Lewicki's Observations for the motivation of Learning models. He discussed unsupervised deep auditory models (UDAM) in detail with applications and self supervising learning with real life examples.

After that he shared about types of ASR systems like Connectionist Temporal Classification(CTC), Encoder-Decoder and Transducer. He explained transformer architecture, challenges in ASR E2E. He shared one project details with us regarding ASR in the Mandi Project for farmers.

Overall this session had so many new concepts which I had come across for the first time. Expert was explaining in a very detailed manner. Mr key learnings from this session were Limitations in ASR, different types of model working (GMM, HMM, DNN), supervised and unsupervised learning in speech recognition system, recurrent neural network and about the Mandi project work related to different languages and approaches.



Session - 5 (10th December 2020) : Mining Biomedical and Clinical Texts for Efficient Retrieval of Clinical Trials (Dr. Manjira Sinha, Assistant Professor, CET, IIT Khargpur, Dr. Tirthankar Dasgupta, Scientist, Innovation Lab, Tata Consultancy Services)

This session had two experts where both had discussed the Machine learning aspects in biomedical and clinical trials. Session started with Dr. Tirthankar Dasgupta where he discussed how machine learning is useful in clinical trials using case study, IR search engine, research problems, how matching criterias are working, different manifestations on the same criterias, how to choose clinical

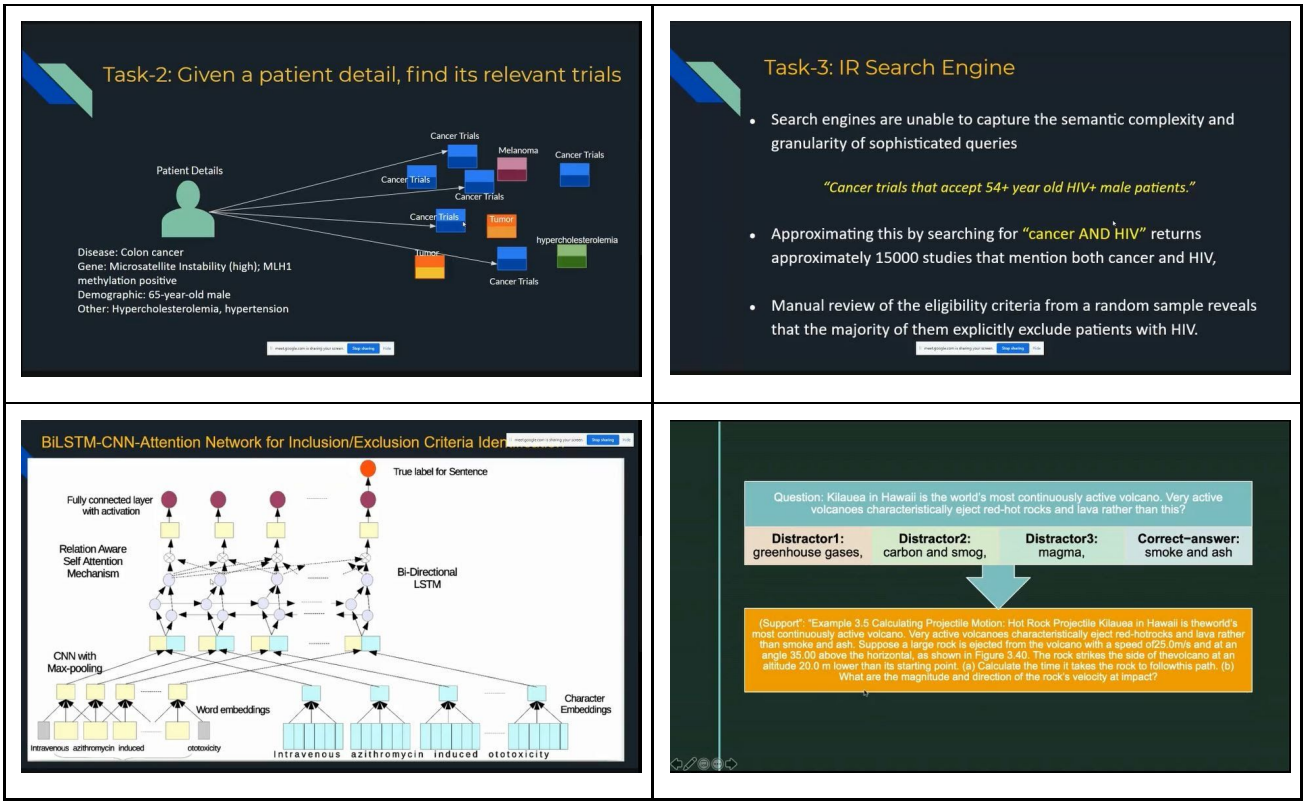
trials, factors affecting drug reactions in trials, observations form Covid 19 trials, He explained in detail BiLSTM CNN Attention Network for Inclusion/Exclusion criteria of identifications, results, Stanford Annotation tools.

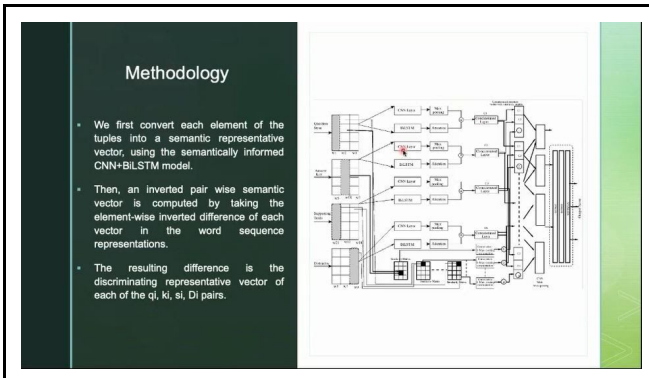
In his whole session he shared clinical trial case studies with Machine Learning and Deep Learning concepts. Key learnings from this session are how data is going to be learned by machine and identifies the results based on the given criterias, Automatic mapping for the same, problems of NLP. and text mining.

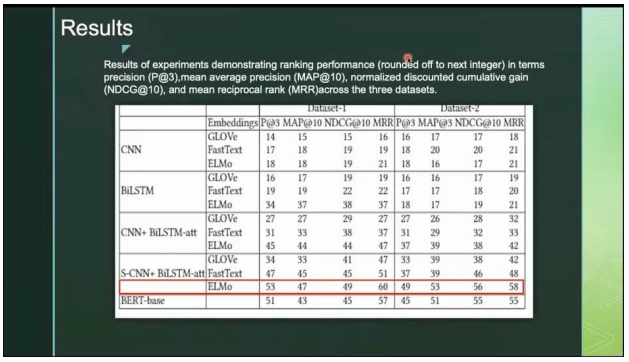
The second expert was Dr. Manjira Sinha, she discussed relevant problems in Natural Language Processing. She started with example, problem definition, methodology for clinical trials. She discussed relation aware attention models for uncertainty detention in text where she explained uncertainty based on lack of information regarding the data set. She also explained model architecture: ReMC - CNN - TLSTM. She also took her session based on case studies.

Overall both the speakers shared very relevant information based on the current scenario and how Machine Learning helps to make more effective to identify the patients details.

My key learning were two models which they had used and there were some points which I had come across first time like ReMC - CNN - TLSTM technique, text mining in the trials.

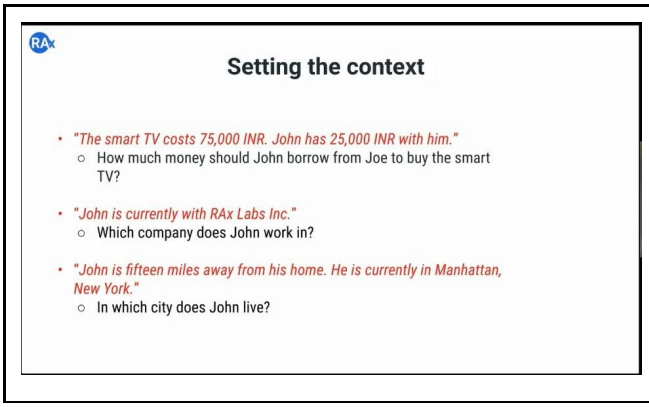


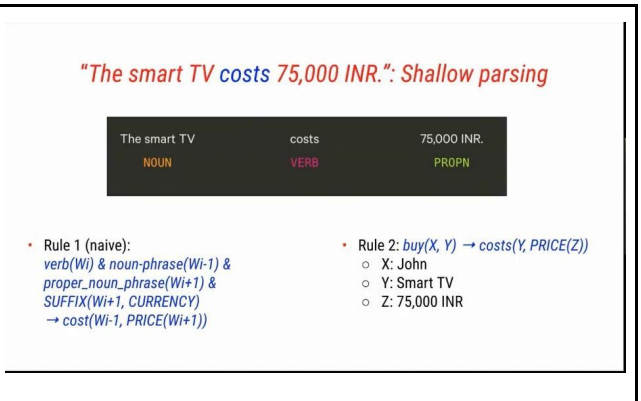


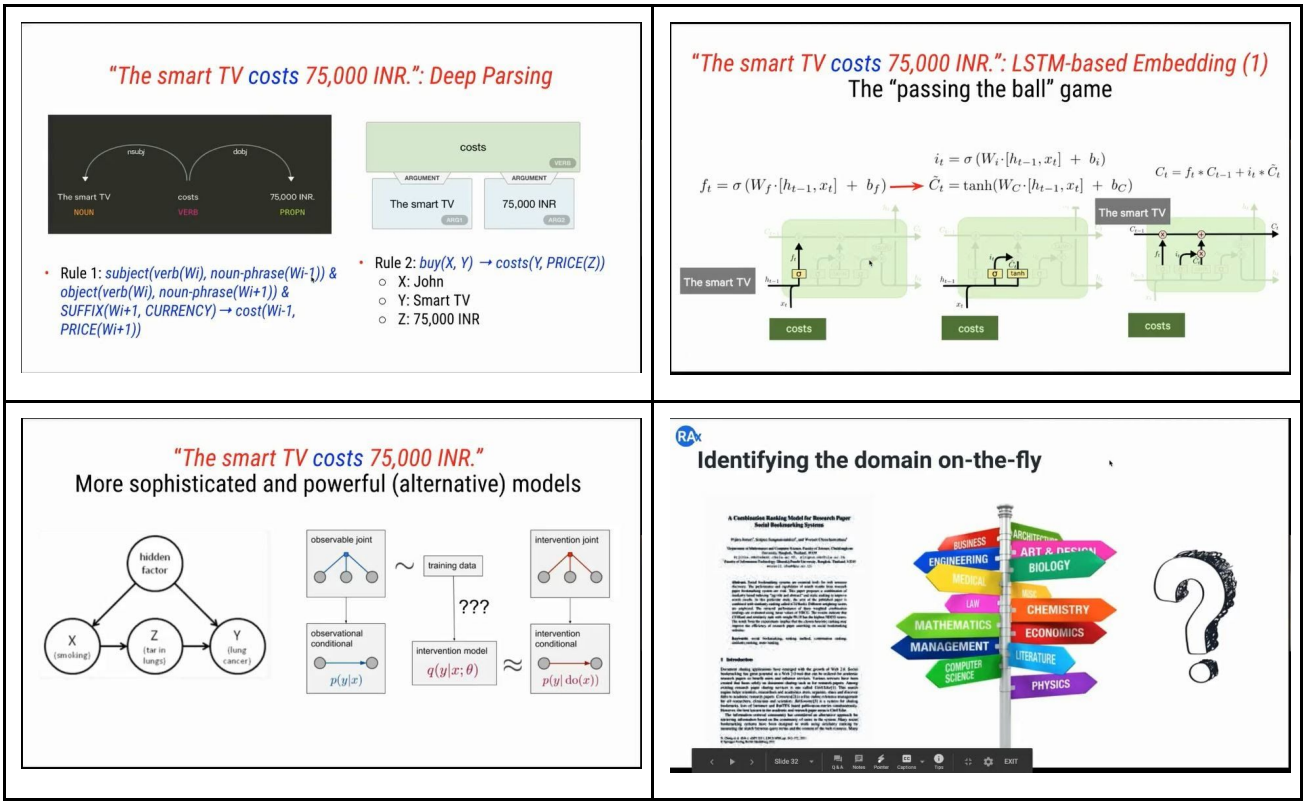


Session - 6 (10th December 2020) : Extracting Concepts and Relations from Textual Documents (Dr. Sourish Dasgupta Founder and CEO Rygbee and Professor at DAIICT)

The session started with the foundation of Information Extraction, what is Information Extractions, kecy challenges and solving the problems. He explained what kind of problems need to be solved, how we break down complex problems and setting the context. Then he discussed simplified event calculus, semantic role representation: knowledge graph, LSTM based Embedding with example.
He also shared how predictive models work in this scenario with the example of Smart TV. He discussed different alternative models with the same example.
After that he discussed how to select domains, techniques and differences between core and peripheral concepts.
The main point of this session was information extraction techniques and how Machine Learning can be used for that.Expert had good commands on topics and experience. His explanation was very much informative especially he used the same example for all the different techniques.
My key learnings were what exactly information extraction, how to work on complex problems, LSTM(Long Short term memory) based embedding.







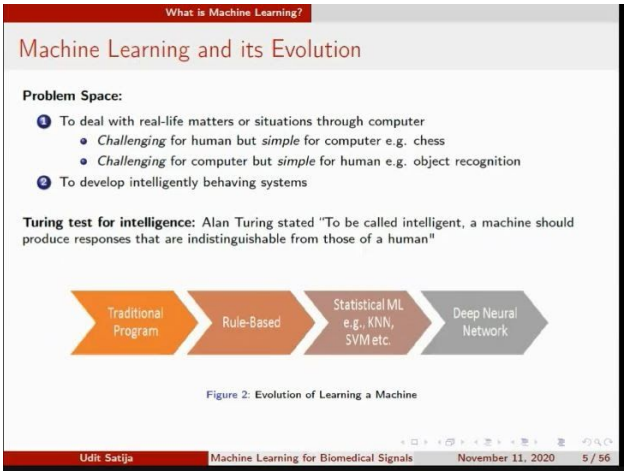
Session - 7 (11th December 2020) : Machine Learning for Biomedical Signals (Dr. Udit Satija, Assistant Professor, IIT Patna)

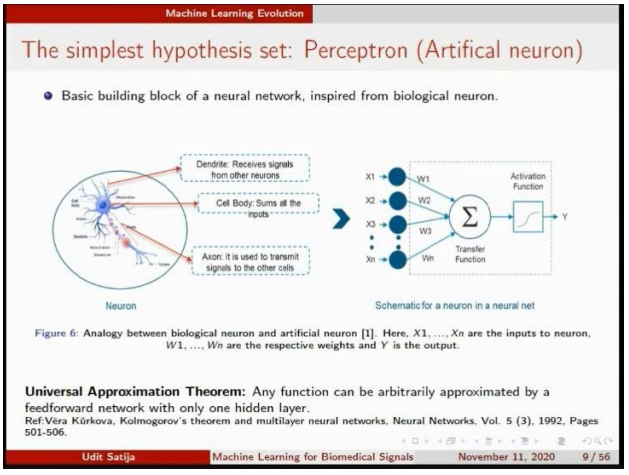
The session started with the basics of Machine Learning concept and features related to data Machine Learning evaluation, types of machine learning. He discussed Artificial neuron, forward and backward propagation methods with examples. After that he explained the Complete Neural Network chart in detail.Then he started Machine Learning for Biomedical signals with the context of unsupervised manner, typical machine learning structure, training for ML model.

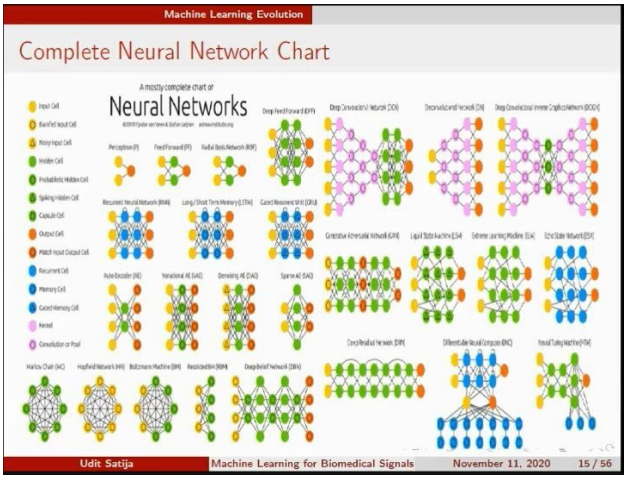
He discussed Convolution layer, Relu layer, Stacking. He shared one example of 1-Dimension CNN based metal tasks classification from EEG signal and features in that, main parameters for the same like Stride and padding, activation function.

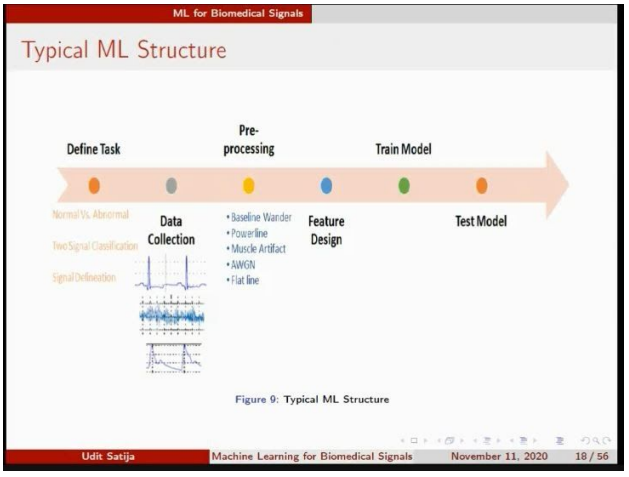
Overall session had two main parts like the basics of Machine Learning and the second part was how to use machine learning models for biomedical signals. Exerts had explained very well with relevant examples.

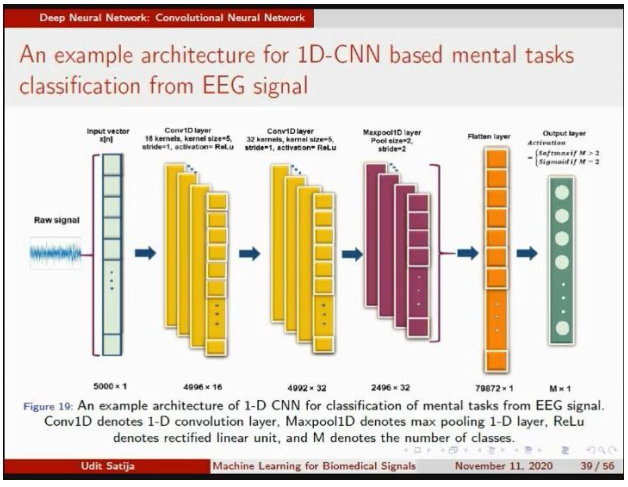
My key learnings were Complete architecture of Neural network, artificial neural concepts, working of different layers like Relu and convolution layer and how to define activation function for the given problem.

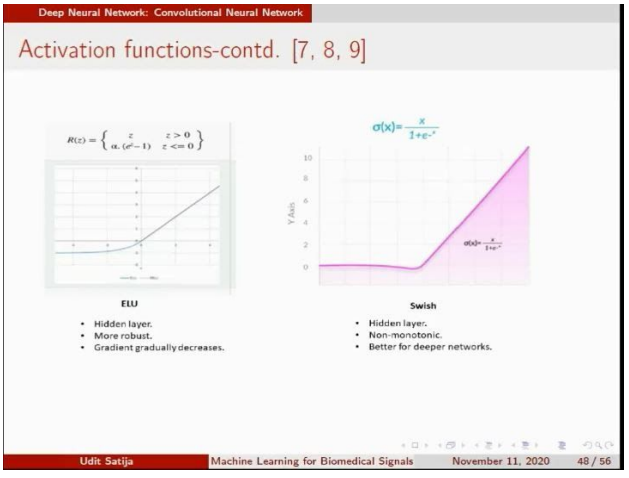












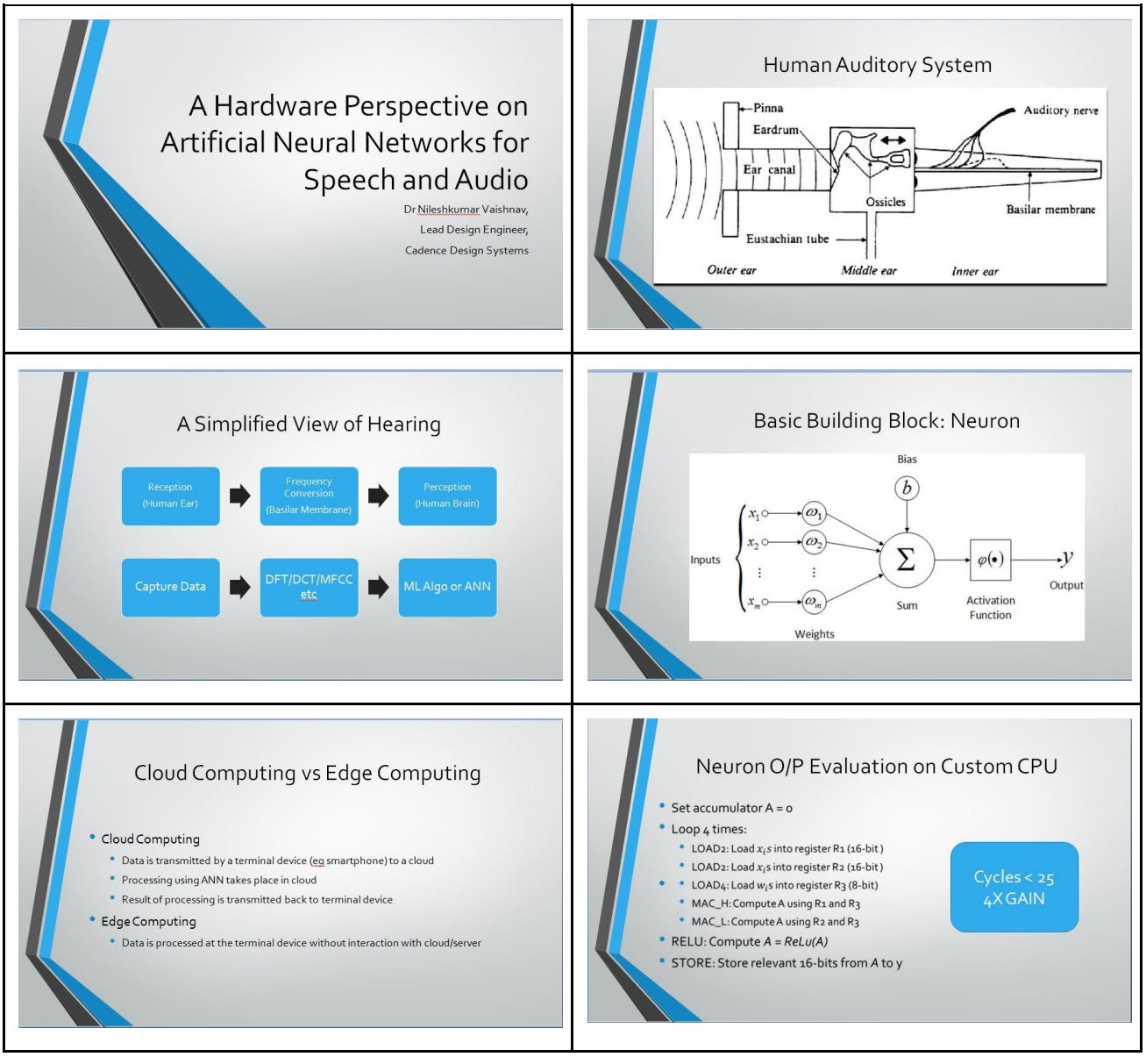
Session - 8 (11th December 2020) : Trends in Hardware Design for Audio/Speech Neural Network Applications (Dr. Nilesh Vaishnav, Lead Design Engineer, Cadence Design Systems, Audio R&D Group)

The session started with introduction of sound and human hearing patterns where he discussed sound production, propagation and reception. He explained the Human Auditory system in detail with different parts how it is working and getting the data. Then he explained the human auditory system with a basilar membrane and its frequency characteristics.

After that he discussed processing of speech and audio where he talked about process for the simplified view of hearing in that he explained the process from reception to perception and capturing data to Machine learning algorithm (ANN).

He discussed the difference between audio/speech and Image in the context of frequency transform and asynchronous processing. He also discussed emerging trends in speech processing. Then he explained Artificial Neural Network, basic building block of Neuron, ANN - training and evaluation, ANN architecture, ANN edge computing, difference between cloud computing and edge computing. At last he discussed the design and role of CPU in the ANN. This session touched many areas very effectively. Experts had explained everything in detail with examples. The session was very informative.

My key learnings from this session were basic speech recognition system (hearing and sound) , basics of neuron and artificial neural networks with architecture, edge computing which was new to me and the role of CPU while working with ANN.



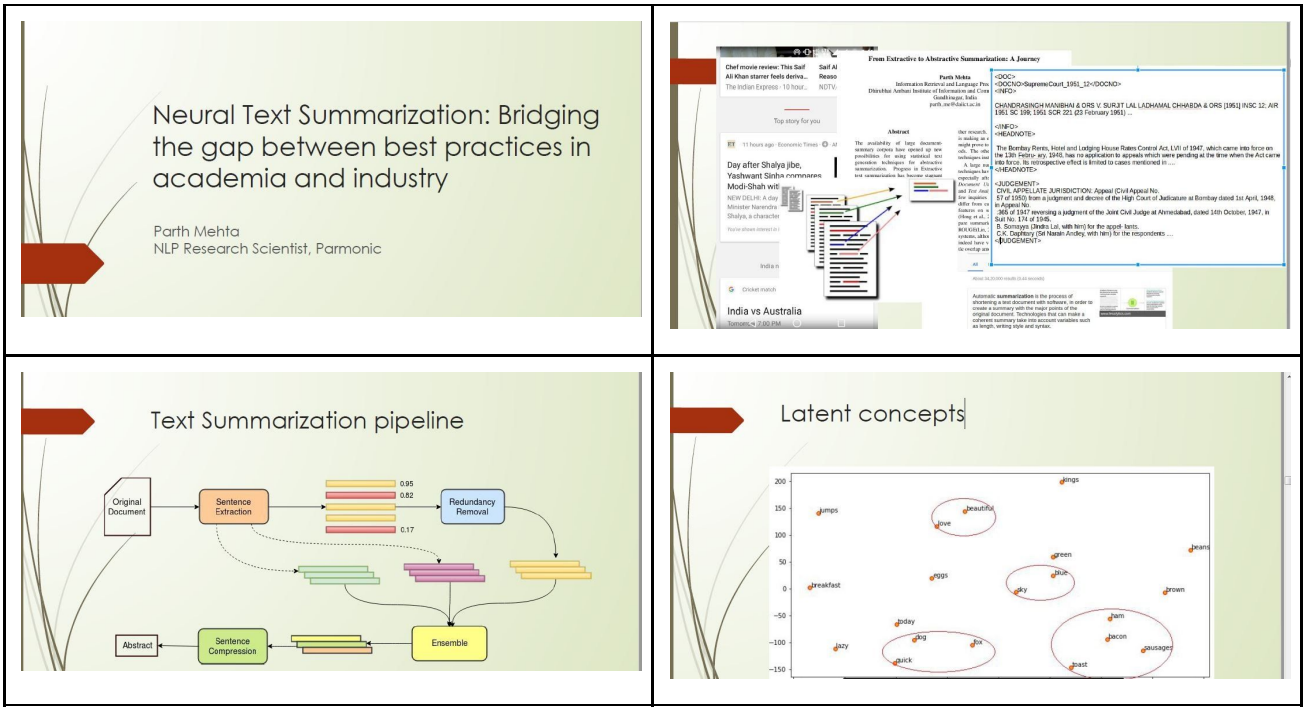
Session - 9 (12th December 2020) : Neural Text Summarization: Bridging the gap between best practices in academia and industry (Dr. Parth Mehta, NLP Research Scientist, Parmonic)

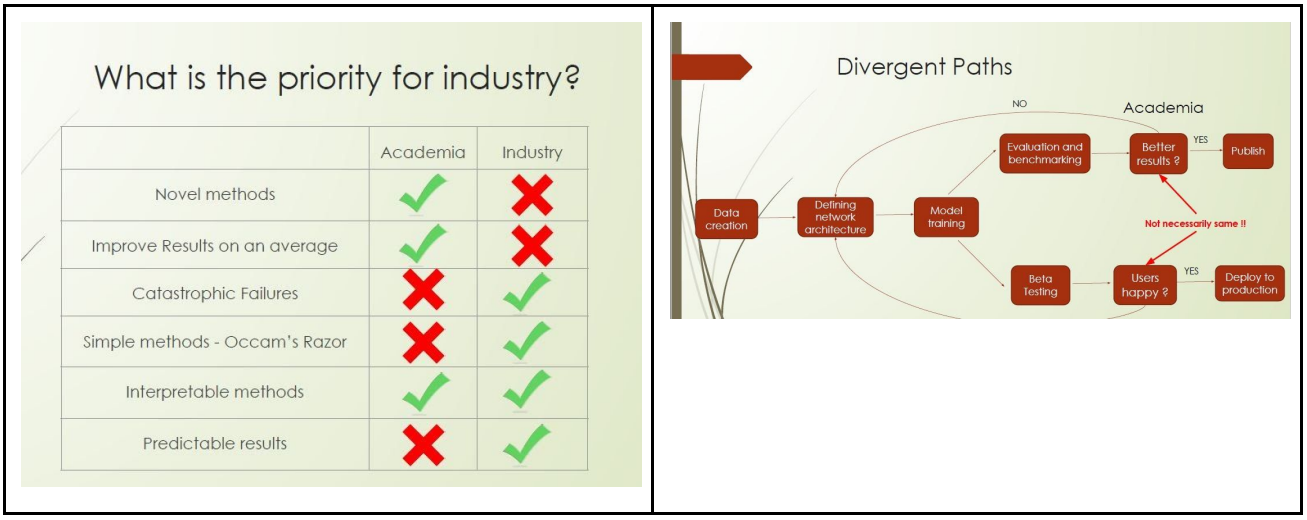
The session started with an automatic summarization process where he explained from basic and how it creates a subset which represents the most important or relevant information within the original content with example. Then he explained about Extractive and Abstractive summarization techniques.

He discussed the Text Summarization pipeline process in detail where he explained how the original document goes to the different process or steps like sentence extractions based on the given parameters, redundancy removal to ensemble, sentence compression and last abstract data. He discussed numeric representation of text, use of one hot encoding and tf-idf vectors, latent concepts. After that he shared how recurrent neural networks, sequence to sequence modeling,

In the second part he explained about the Evaluation and benchmarking in academia, types of errors and the whole process of data creation to model training and two different approaches like evaluation & benchmarking to publish and beta testing to production. He also shared priority with respect to industry, challenges in deploying to production.

The whole session was new to me with all the context. Everything was the key learnings for me from the session. Expert was confident and informative with his way while explaining with real life examples.



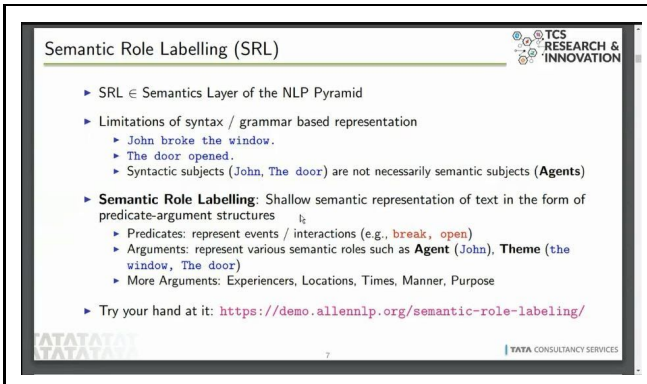


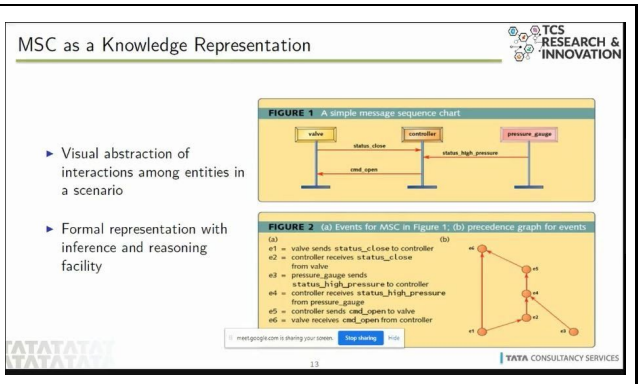
Session - 10 (12th December 2020) : Knowledge Extraction from Text Narratives and its Applications (Mr. Nitin Ramrakhiyani, Researcher, (TRDDC), Dr. Sachin Pawar, Researcher, (TRDDC))

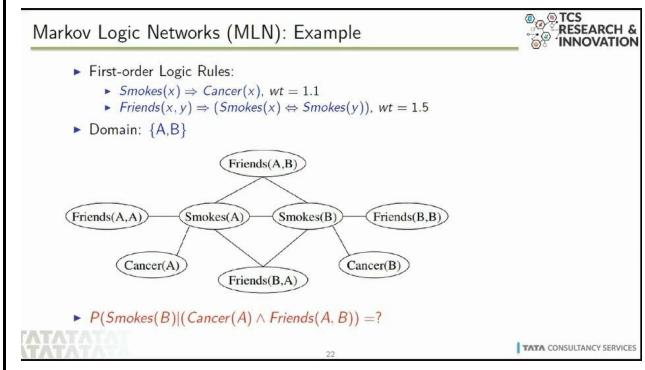
Session started with basics of knowledge extraction from text and examples. First Mr Nitin Ramrakhiyani discussed SRL (Semantic Role Labelling) where he shared how SRL and semantic work on sentences and arguments. Then he discusses lexical databases- WordNet, where nouns, verbs, adjectives and adverbs are grouped into sets of cognitive synonyms.
He also discussed Synsets which are interlinked by means of conceptual semantic and lexical relations hypernymy, hyponymy, meronymy and holonymy. Then he discussed open information extractions.

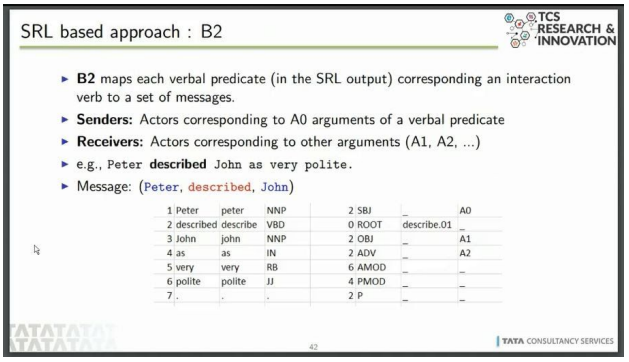
After that Dr. Sachin Pawar explained Knowledge Representation:Message Sequence Charts(MSC) with simple message sequence chart and events for MSC using precedence graph where he also discussed how to extract form text, interaction identification, message creation and temporal ordering with research paper reference.
He shared about the basic actor mention identification with type and synets. Then he gave background for MLN(Markov Logic Networks) with first order logic to write rules, MLN networks for example.

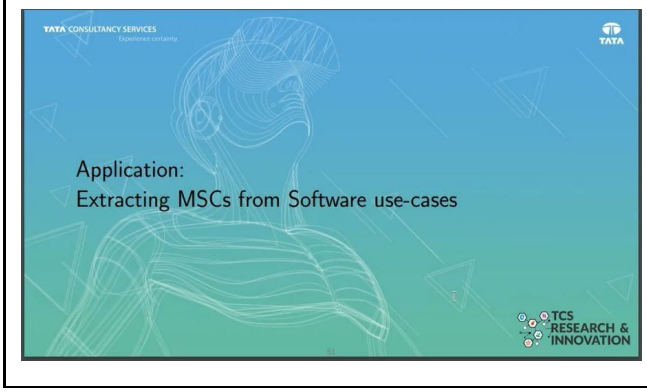
Both the experts were very impressive and full of knowledge in their fields. Again the whole concepts new to me so whatever they had explained, everything was key learnings to me.

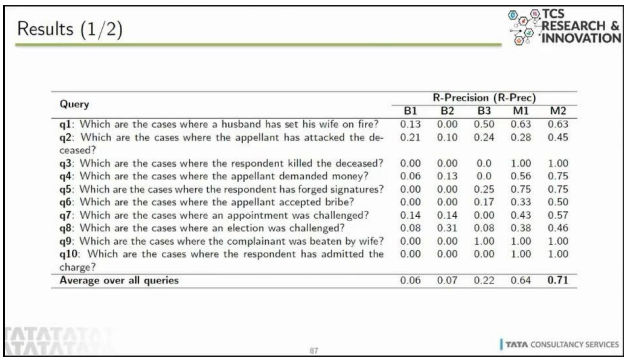












Query	R-Precision (R-Prec)				
	B1	B2	B3	M1	M2
q1: Which are the cases where a husband has set his wife on fire?	0.13	0.00	0.50	0.63	0.63
q2: Which are the cases where the appellant has attacked the deceased?	0.21	0.10	0.24	0.28	0.45
q3: Which are the cases where the respondent killed the deceased?	0.00	0.00	0.0	1.00	1.00
q4: Which are the cases where the appellant demanded money?	0.06	0.13	0.0	0.56	0.75
q5: Which are the cases where the respondent has forged signatures?	0.00	0.00	0.25	0.75	0.75
q6: Which are the cases where the appellant accepted bribe?	0.00	0.00	0.17	0.33	0.50
q7: Which are the cases where an appointment was challenged?	0.14	0.14	0.00	0.43	0.57
q8: Which are the cases where an election was challenged?	0.08	0.31	0.08	0.38	0.46
q9: Which are the cases where the complainant was beaten by wife?	0.00	0.00	1.00	1.00	1.00
q10: Which are the cases where the respondent has admitted the charge?	0.00	0.00	0.00	1.00	1.00
Average over all queries	0.06	0.07	0.22	0.64	**0.71**

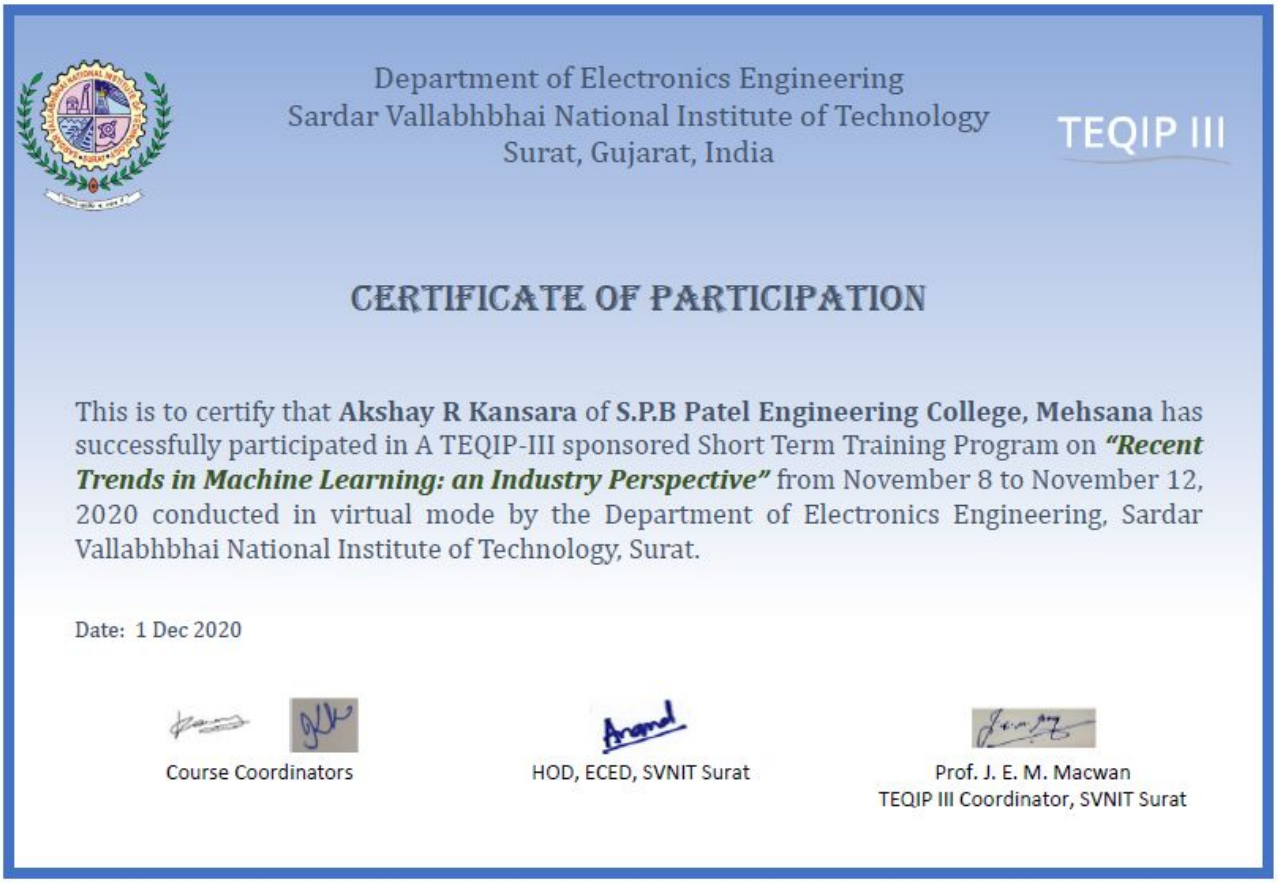
All the sessions were very well organized and full of knowledge. All the experts also had good knowledge and effective mode of presentations where we were able to understand all the points even if it was new to me. There were points which were new to me but I was able to connect with all those topics. They all also cleared all the doubts of ours during the sessions. Even they have shared their Email ID with us for further discussion. I would like to give my sincere thanks to all of them.

I would like to thank Dr. Kamal Captain, Dr. Kirti Inamdar and Electronics Department of SVNIT-Surat for organizing such kind of STTP. Both the faculty members were very supportive throughout the sessions.

I would like to thank all the participants who made the whole STTP interactive and fruitful by sharing their experience and knowledge.

Last but not the least, I would like to thank Prof. Chitralekha Nahar (Vice Principal), Dr. Gulab Bhambhaniya (Management Representative) and the Management for motivating and allowing me to attend such kind of STTP where I can share my knowledge with the department and students of our

college. Once again thanking you for granting me permission to attend this STTP which helped me to open up the vision in the latest trends and technologies with respect to industry perspective.



Department of Electronics Engineering
Sardar Vallabhbhai National Institute of Technology
Surat, Gujarat, India

TEQIP III

CERTIFICATE OF PARTICIPATION

This is to certify that **Akshay R Kansara** of **S.P.B Patel Engineering College, Mehsana** has successfully participated in A TEQIP-III sponsored Short Term Training Program on ***"Recent Trends in Machine Learning: an Industry Perspective"*** from November 8 to November 12, 2020 conducted in virtual mode by the Department of Electronics Engineering, Sardar Vallabhbhai National Institute of Technology, Surat.

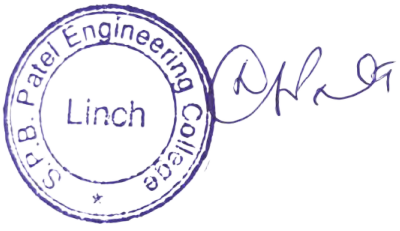
Date: 1 Dec 2020

Course Coordinators

HOD, ECED, SVNIT Surat

Prof. J. E. M. Macwan
TEQIP III Coordinator, SVNIT Surat

Yours Sincerely,
Prof. Akshay Kansara



GUJARAT TECHNOLOGICAL UNIVERSITY

Graduate School of Engineering and Technology

CERTIFICATE OF PARTICIPATION

Certi. No.: GTU/GSET/2020/10/027/005

This is to certify that

Dr. / Mr. / Ms. **Avani K Dedhia** ,

has successfully participated in

Online Short Term Training Program on "Emerging Software in Civil Engineering"

in association with

Center of Excellence - Design Center

during 07th December 2020 to 11th December 2020

संजय चौहान

Prof. (Dr.) Sanjay Chauhan
Director - *DIC, GIC*

Prof. (Dr.) S. D. Panchal
Director - *GSET, GTU*

S.P.B. Patel Engineering College
Linch

Saffrony Institute of Technology
S.P.B. Patel Engineering College
Linch-Mehsana-384435

ATAL - FDP

Report on 'Five Days Workshop on AI in Healthcare Economics Outcome Research'

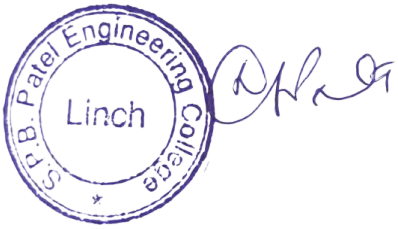
Name of Resource Person:

1. Prof. Pramil Tiwari (NIPER SAS Nagar)
2. Prof. Shankar Prinja (PGIMER Mohali)
3. Ms. Richa Goyal (IQVIA)
4. Dr. D. Prabhakaran (Vice President (Research and Policy) and Director, Centre for Control of Chronic Conditions, PHFI)
5. Dr. Kavita Lamror, Director, RWI, Sanofi, Mumbai
6. Dr Sameer Dhingra, Associate Prof, NIPER Hajipur
7. Dr. Javed Shaikh,Novartis Healthcare Private Limited, Hyd
8. Dr. Mahendra Rai, Evarsana, Mumbai
9. Dr. Jane Reed, IQVIA
10. Dr. Kashif Siddiqui, Parexel, Panchkula
11. Dr. Santosh Tiwari, Novartis Healthcare Private Limited
12. Dr. Dr. M. Karthikeyan, NCL, Pune
13. Dr. Ashutosh Kumar, NIPER Kolkata
14. Mr. Varun Upadhyay, National Project Coordinator, Arts of Living, Bengaluru

Date: April 2nd to 6th, 2021
Duration: 10:30 am to 4:00 pm
Venue: Virtual Mode
No. of Participants: 80+ participants
Team Member from Saffrony Institute of Technology: Hima Soni (Assistant Professor)

Introduction and Objective:

This workshop was aimed to raise awareness about the emerging technology called Artificial Intelligence, Machine Learning & Deep Learning in Health Economics Outcome Research (HEOR). The flow of the workshop was from basic to the very high end. The main objective of the workshop was to make participants aware of all the tools and technologies, which can be used to develop projects related to AI/ML for Health Care dataset and domain. To give an idea about, in which areas, we can apply this technology.



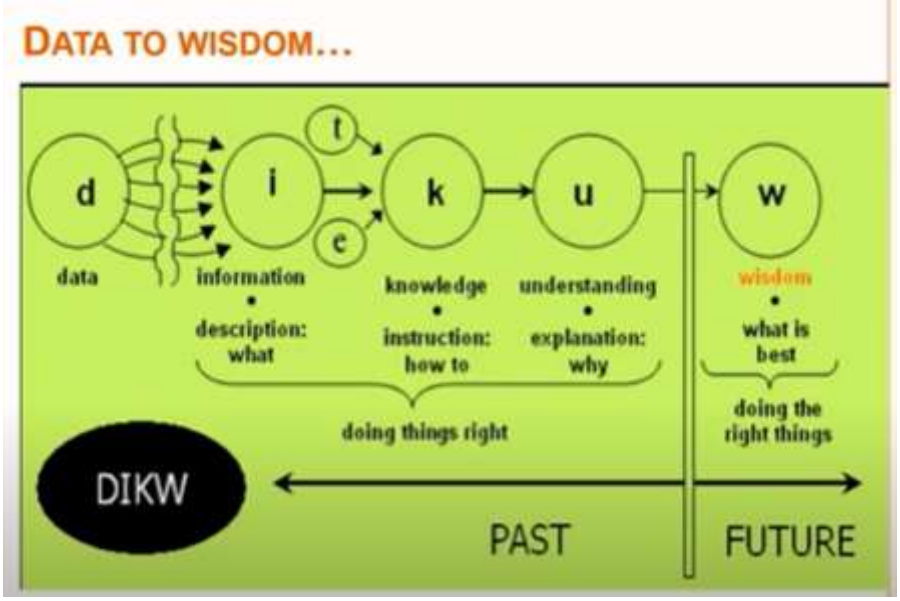
Workshop Details:

Day – 1 (August 2nd, 2021)

First Session [Prof. Pramil Tiwari (NIPER SAS Nagar)]

The very first session was on the Real-World Evidence in Healthcare Systems. To understand the domain knowledge which provides enough ideas and problem definitions, first we need to be aware about terminologies of HEOR and its use cases, which are also of equally important.

The best part was that Prof. Pramil Tiwari started with a very basic element and focused more on making our base strong. Data to Wisdom pyramid was explained in detail by using flow diagram shown below:



Prof. Pramil Tiwari has started his presentation with the basic elements of medicine and history of the same. He concluded this session by integrating all the concepts of Pharmacy, Health care and case studies.

Skill to be noted: Case study-based presentation!

Second Session [Prof. Shankar Prinja (PGIMER Mohali)]

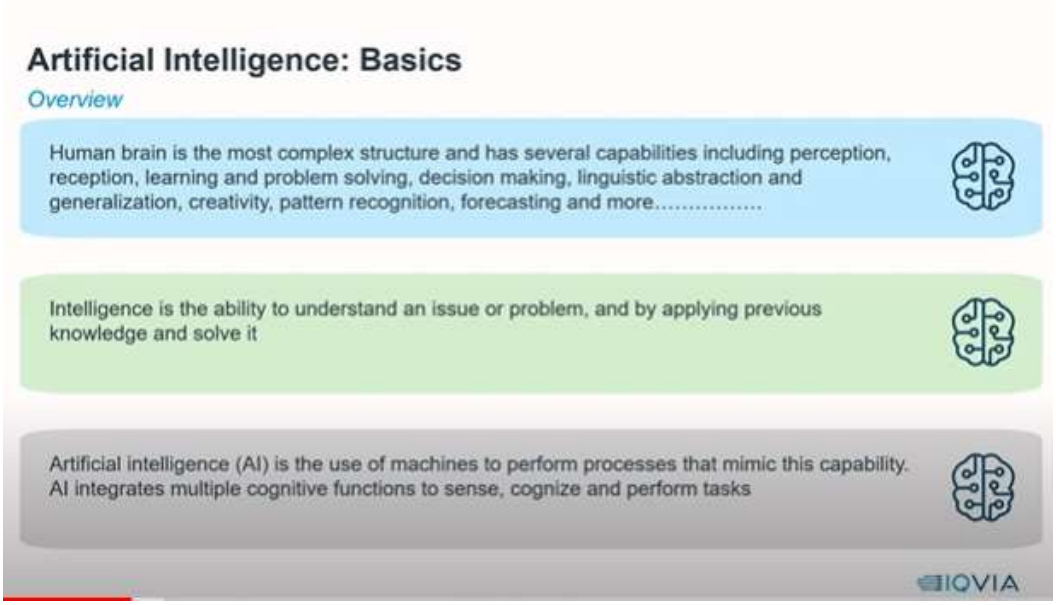
His session was on Health Economics Outcome Research: An Overview. This session was A to Z of HEOR.

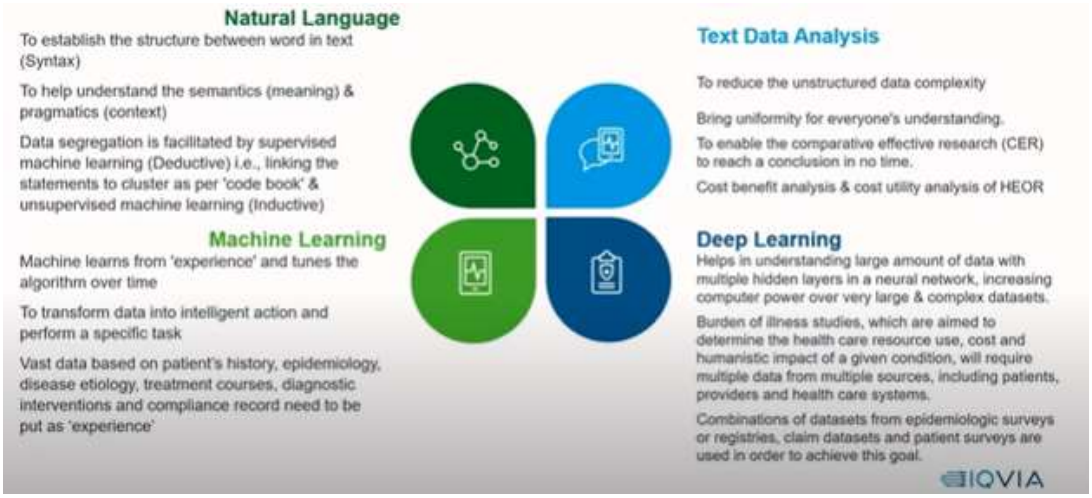
Skill to be noted: Very well-structured information has been presented.

Third Session [Ms. Richa Goyal (IQVIA)]

Her session was mainly on fundamentals of Machine Learning and Deep Learning. Ms. Richa Goyal has shared types of Machine Learning techniques such as Supervised Learning,

Unsupervised learning, and Reinforcement learning. Also, she shared an introduction to neural networks. She did not stop there and also shared various algorithms of Machine Learning and its applications. HERO in IQVIA was her main focus.

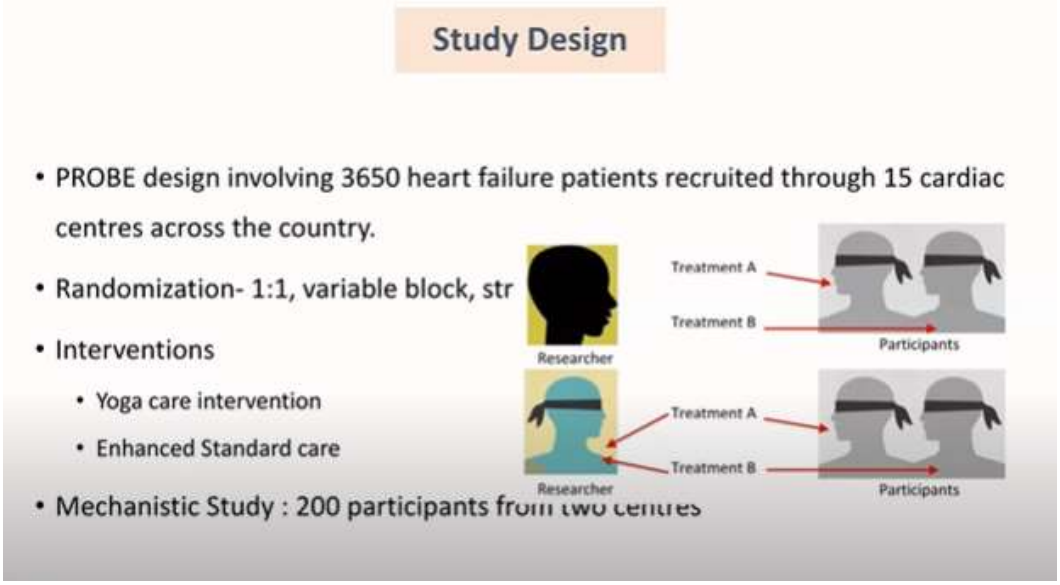




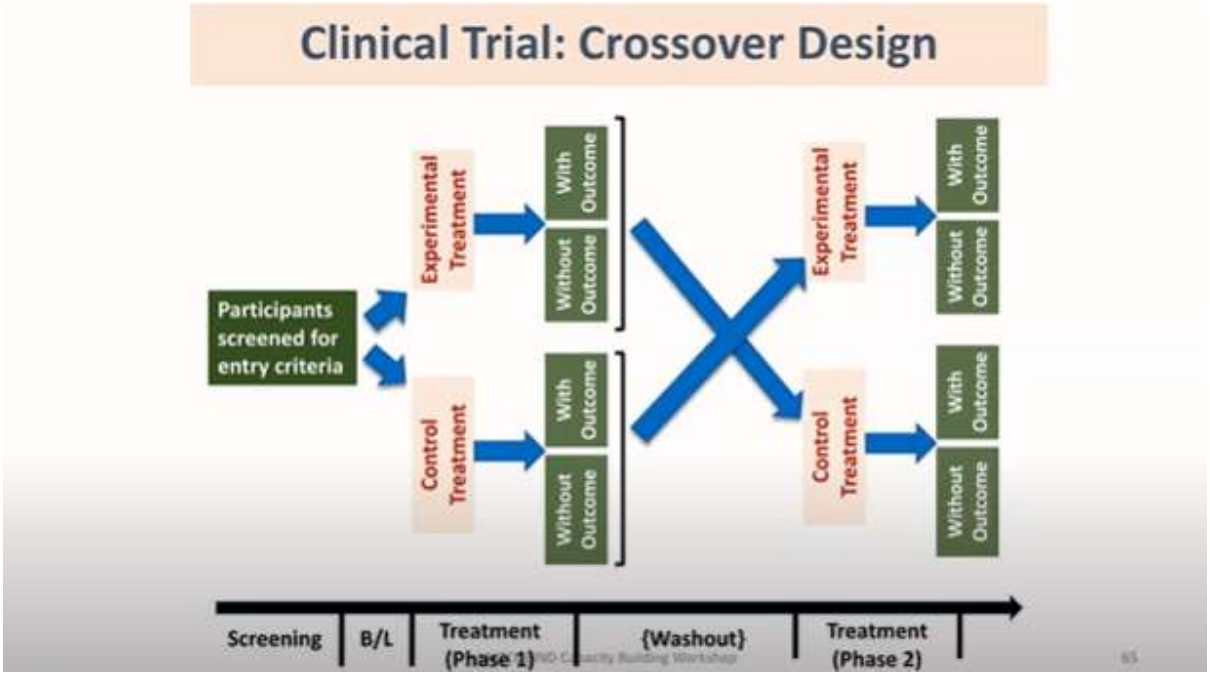
Day – 2 (August 2nd, 2021)

First Session [Dr. D. Prabhakaran (Vice President (Research and Policy) and Director, Centre for Control of Chronic Conditions, PHFI)]

On day-1, we learned theoretical aspects of AI in HEOR and then on day-2, Dr. D. Prabhakaran had explained practical aspects of the same. The session was on Nuts and Bolts of Clinical trials. Firstly, he shared about his own experiences and then shared real time projects. He gave us a clarity of why one should use clinical trials for predicting outcomes.



He concluded the session with the technological benefits, some of the pitfalls and future of Clinical Trials.



Second Session [Dr. Kavita Lamror, Director, RWI, Sanofi, Mumbai**]**

It was one of the amazing contributions of Machine Learning to healthcare. The key feature of this session was totally case study based.

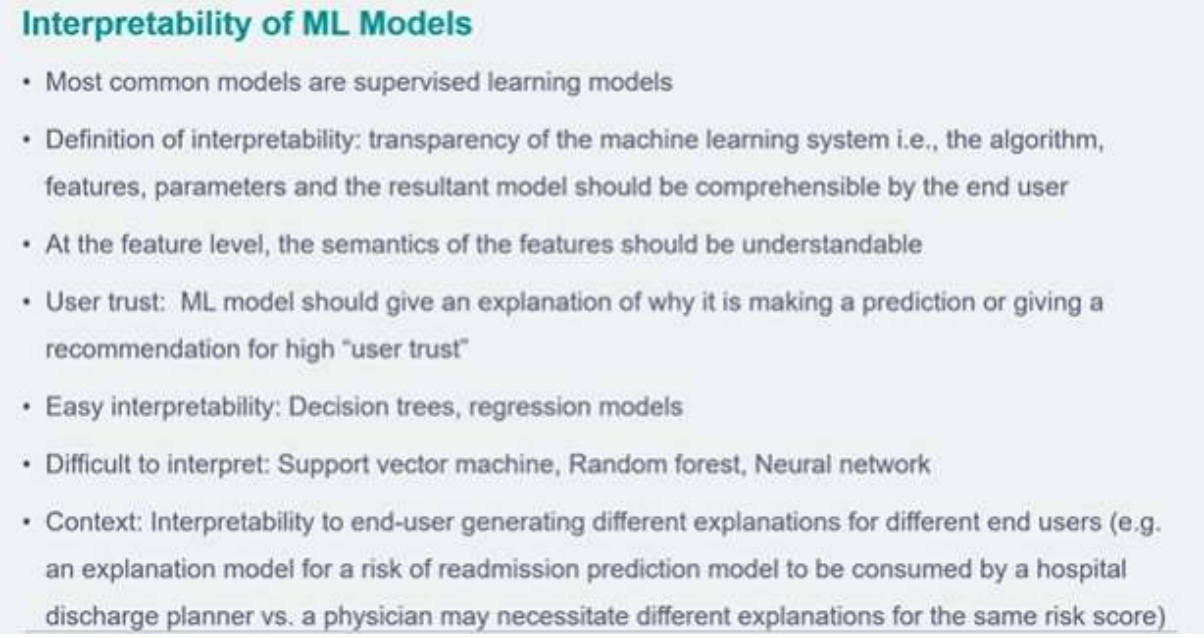
Kavita mam has also shared why they have used algorithm. and how they have collected data for research. In this session we understood that for even collecting data we need to take contracts from different agencies.

Supervised vs. Unsupervised vs Reinforcement Learning

Criteria	Supervised ML	Unsupervised ML	Reinforcement ML
Definition	Learns by using labelled data	Trained using unlabelled data without any guidance.	Works on interacting with the environment
Type of data	Labelled data	Unlabelled data	No – predefined data
Type of problems	Regression and Classification	Association and Clustering	Exploitation or Exploration
Supervision	Extra supervision	No supervision	No-some supervision
Algorithms	Linear Regression, Logistic Regression, SVM, GAM	K – Means, C – Means, Apriori	Q – Learning, SARSA
Aim	Calculate outcomes	Discover underlying patterns	Learn a series of action
Application	Diagnosis from imaging, cost of treatment	Discover patterns/trends in population health	Dynamic treatment regimen, Automated diagnosis, Drug discovery

Sir also explained about how different versions of the data set matter while training in the domain of healthcare and pharmacy.

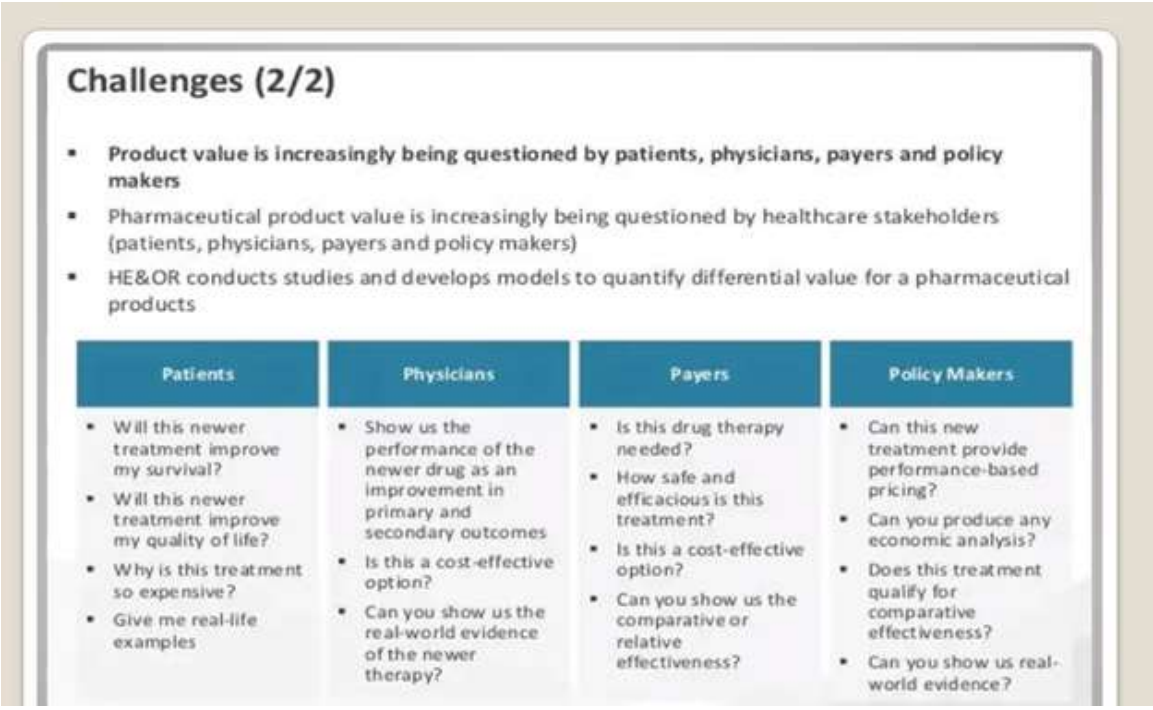
A speciality of this session was this session has given a reality of various AL-ML models and its application.



After explaining various ways regarding how Big Pharma is Evolving, she had concluded the session.

Third Session [Dr Sameer Dhingra, Associate Prof, NIPER Hajipur**]**

He started his session with a real process of learning Pharmacovigilance. The presentation was very simple but very informative. This session was a little challenging to understand but first slide of the presentation helped to understand the need of Pharmacovigilance.

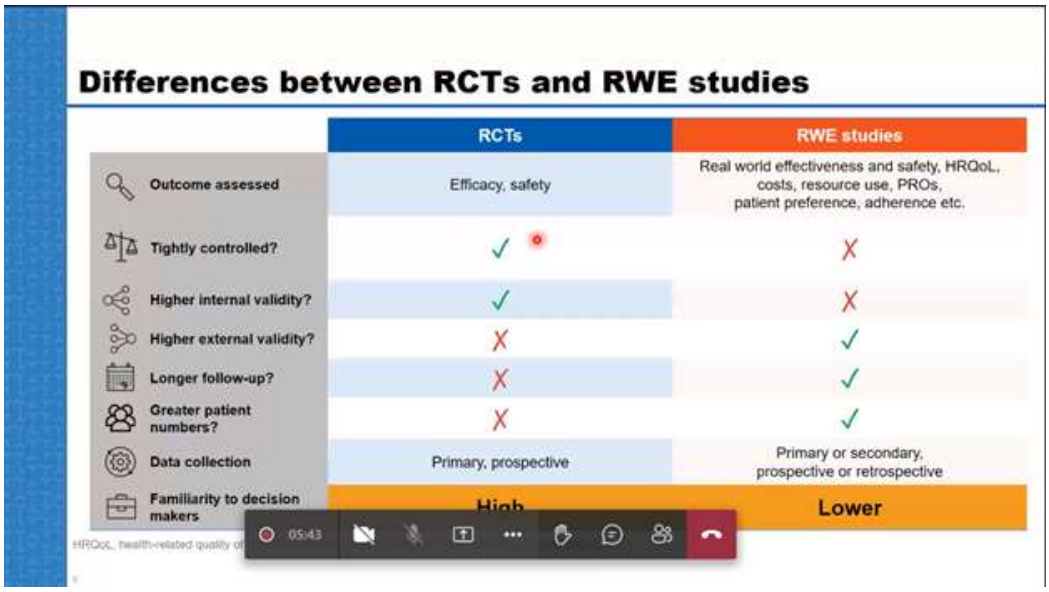


Stepwise Drug side effects and challenges in terms of Patients, Physicians, Payers & Policy Makers have been covered at the end of this session.

Day – 3 (August 2nd, 2021)

First Session [Dr. Javed Shaikh, Novartis Healthcare Private Limited, Hyd]

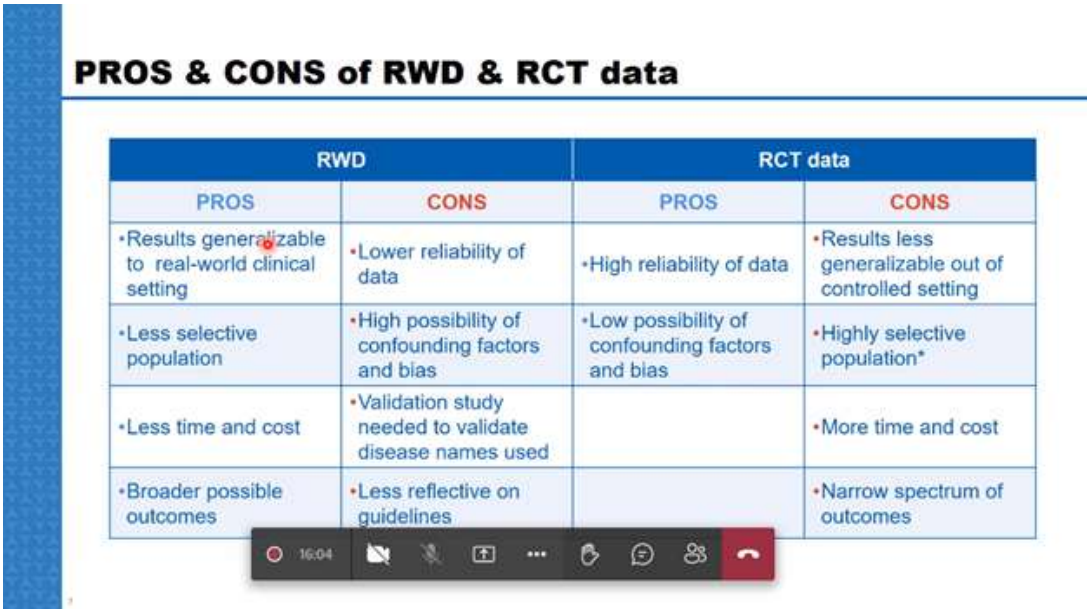
The session was on Real World Evidence: What, Why, and How? Started with What part and covered it with all respects. Also clarifies about big data along with RWD. Research Purpose upon RWD was added. Somehow the difference between RCT and RWD is minor, but it is notable as shown below.



Differences between RCTs and RWE studies

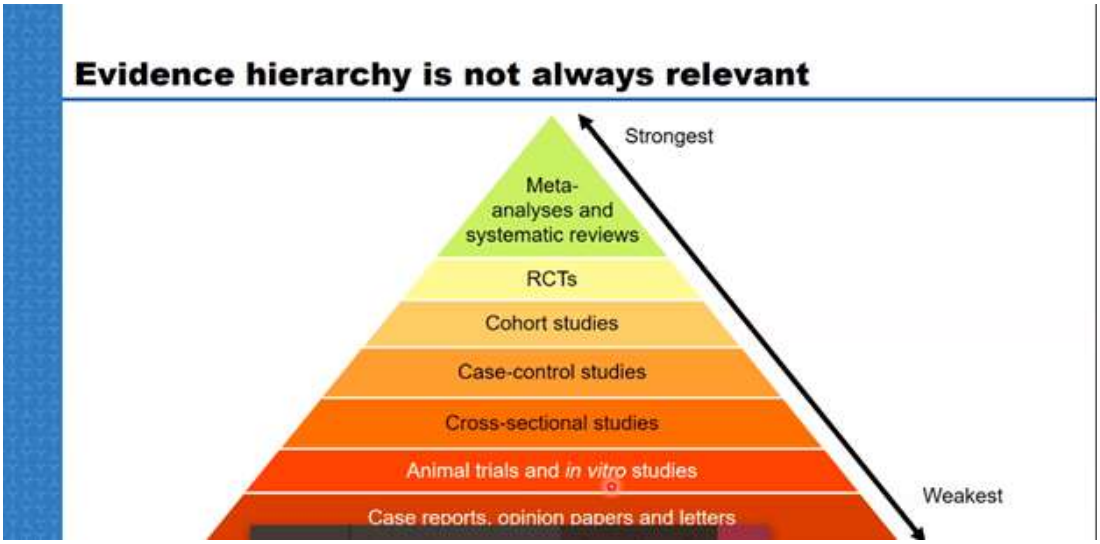
	RCTs	RWE studies
Outcome assessed	Efficacy, safety	Real world effectiveness and safety, HRQoL, costs, resource use, PROs, patient preference, adherence etc.
Tightly controlled?	✓	✗
Higher internal validity?	✓	✗
Higher external validity?	✗	✓
Longer follow-up?	✗	✓
Greater patient numbers?	✗	✓
Data collection	Primary, prospective	Primary or secondary, prospective or retrospective
Familiarity to decision makers	High	Lower

HRQoL, health-related quality of

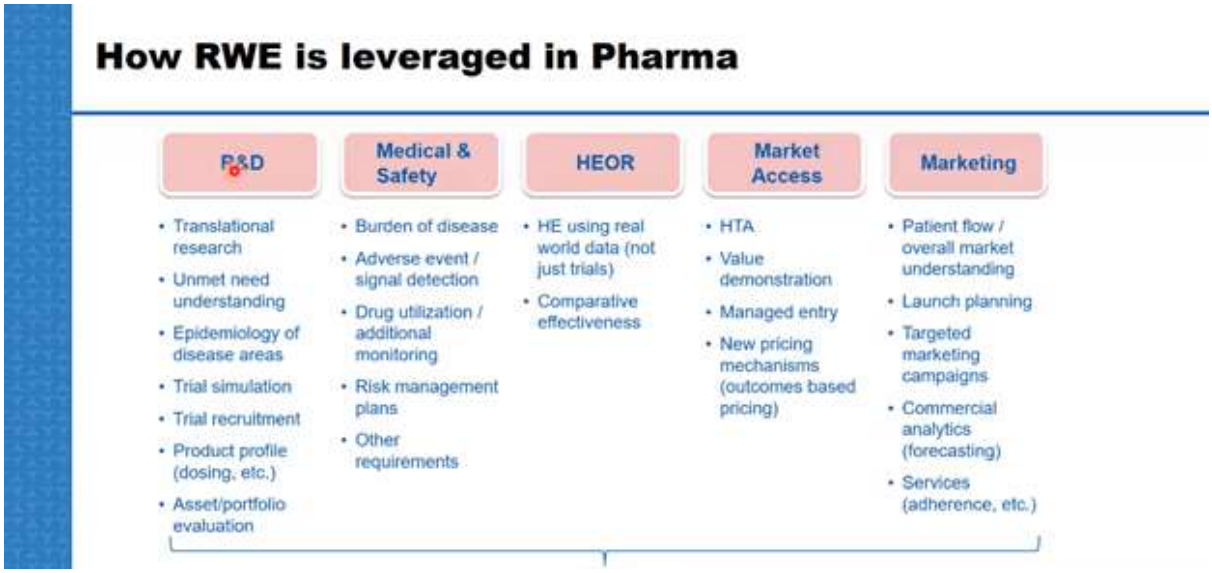


PROS & CONS of RWD & RCT data

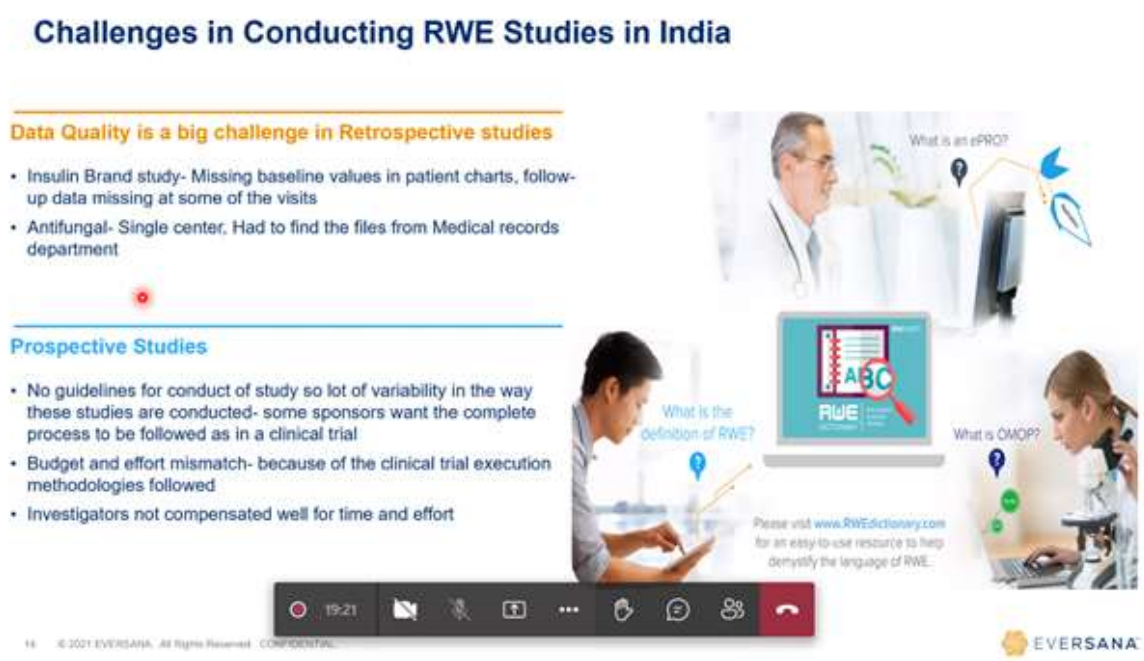
RWD		RCT data	
PROS	CONS	PROS	CONS
•Results generalizable to real-world clinical setting	•Lower reliability of data	•High reliability of data	•Results less generalizable out of controlled setting
•Less selective population	•High possibility of confounding factors and bias	•Low possibility of confounding factors and bias	•Highly selective population*
•Less time and cost	•Validation study needed to validate disease names used		•More time and cost
•Broader possible outcomes	•Less reflective on guidelines		•Narrow spectrum of outcomes



Issues with RWD were discussed and shared relevant information for possible solutions. Also, how RWE is introduced in various pillars of Pharma such as P&D, Medical & Safety, HEOR, Market Access and Marketing.



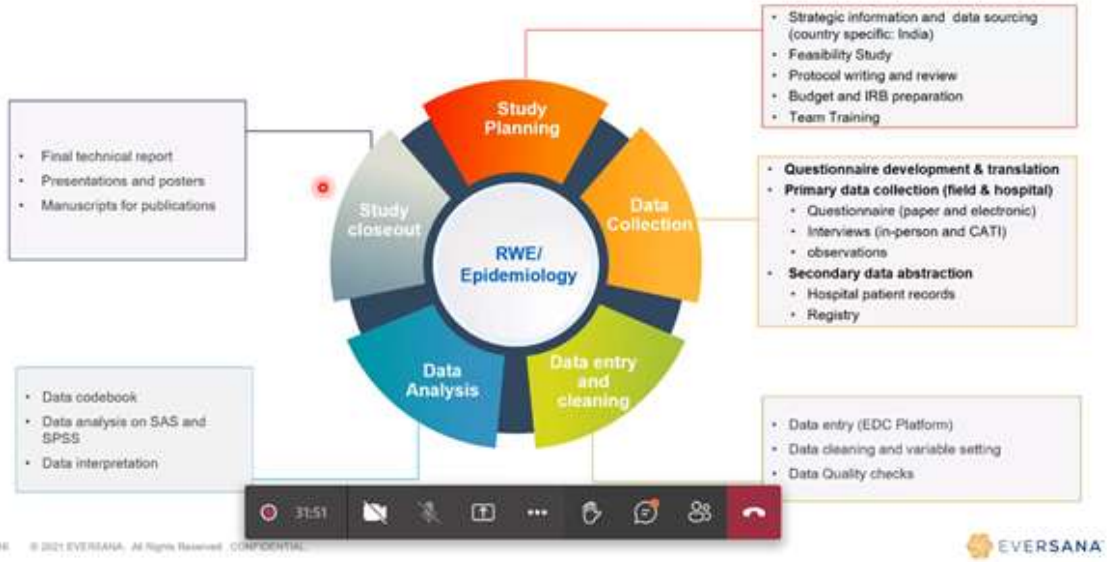
By explaining different types of RWD, ways to generate RWE, RWE in Indian healthcare setting all those important treasures have been covered and at the end sir had concluded session with challenges in conducting RWE studies in India.



Second Session [Dr. Mahendra Rai, Evarsana, Mumbai**]**

It was on Real World Data in the Indian Healthcare system. Sir has started with the explanation of the National Health digital mission. Concluded the session by explaining various RWE trends & Future.

Study Cycle for RWE Hospital Based Studies in India



EVERSANA

RWE Trends & Future

RWE Trends & Future

Real-world evidence is changing the healthcare industry and impacts across the entire value chain—From improving the protocol designs for clinical trials to optimizing the distribution of care

- FDAs worldwide are encouraging to use RWE to expedite the clinical development of newer drugs
- RWE is gaining more significance in this pandemic where many drugs have been repurposed for COVID-19. For the Emergency Use Applications, RWEs are important to collect data post launch of the vaccines and drugs
- Use of RWD as synthetic control arms (SCA) in phase 3 studies- Roche Alectinib got approval in 20 EU countries based on synthetic control arm
  - SCAs have the potential to reduce the number of patients required in traditional control arms, especially active-comparator or standard-of-care arms, thereby decreasing the study cost, accelerating the speed to result, and boosting the overall attractiveness of clinical trial participation for prospective patients.
  - Regulators have become increasingly open to accepting the results of SCAs as the basis for decisions and are supporting efforts to test their use.
- Adding to these catalysts, the COVID-19 pandemic is expected to accelerate efforts to expand the use of real-world evidence in the phi

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Third Session [Dr. Jane Reed, IQVIA**]**

Dr. Jane Reed along with her assistant conducted this session and it was totally based upon case studies as well as hands on. Every slide of this session was important and well-structured, so I have kept all the slides below.

Business model type structure of Real-World Evidence helped everyone to understand the implementation side of Natural Language Processing.

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Real World Evidence brings Broad Business Benefits

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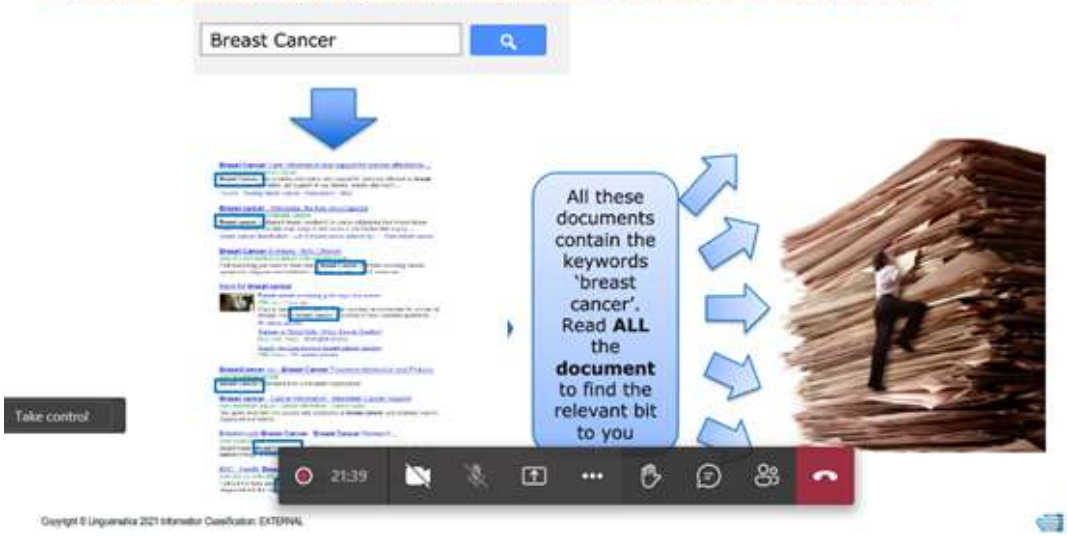
The Challenge with Standard Search

Keyword search is limited, resource intensive, not systematic or comprehensive



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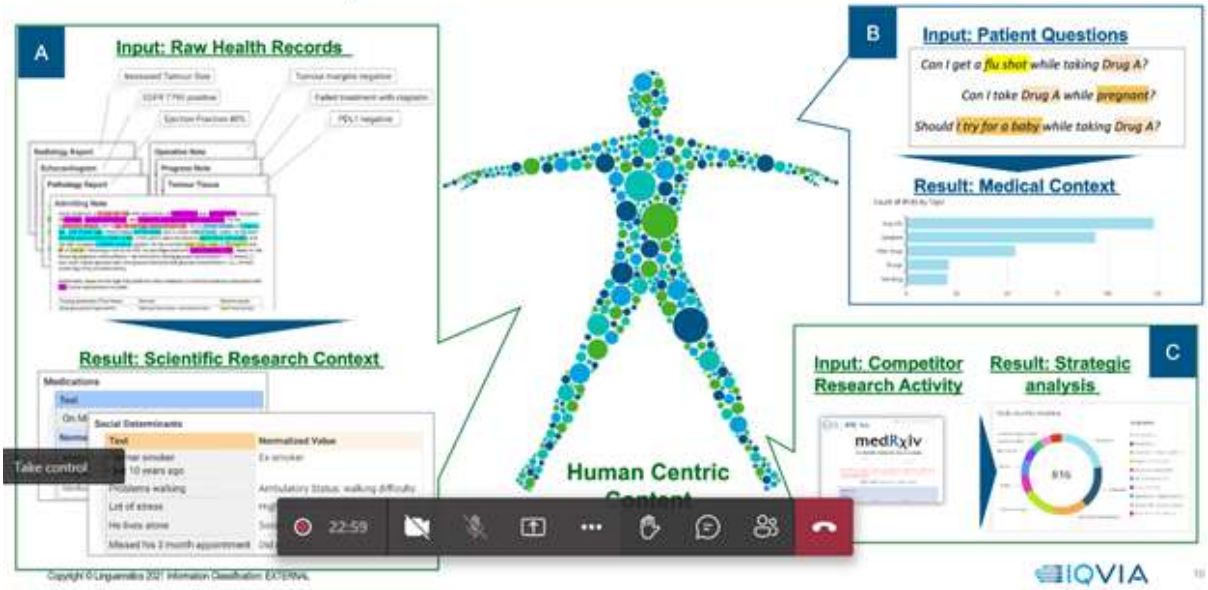
Uncover scientific, medical and business context with NLP



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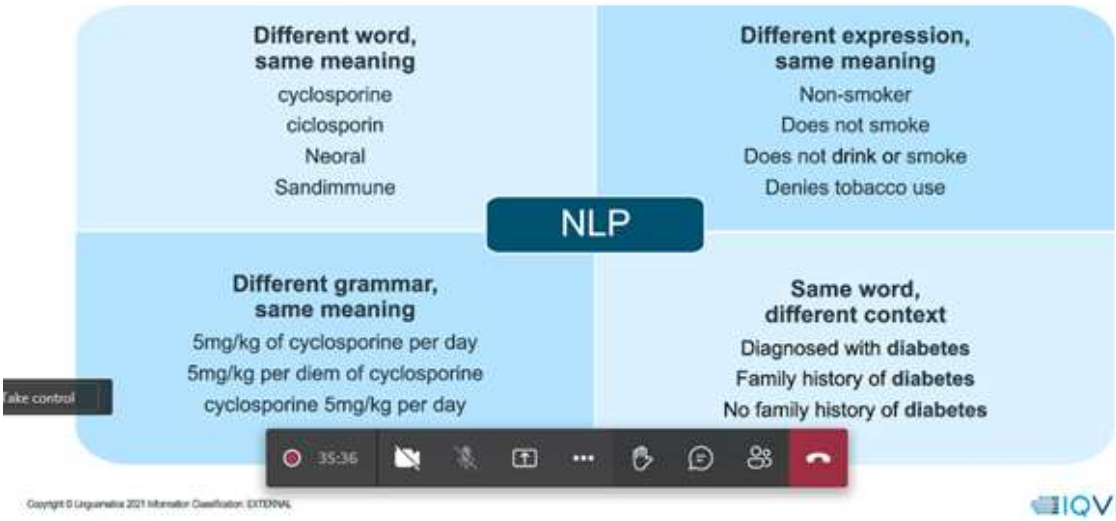
Natural Language Processing

Finds information however it is expressed



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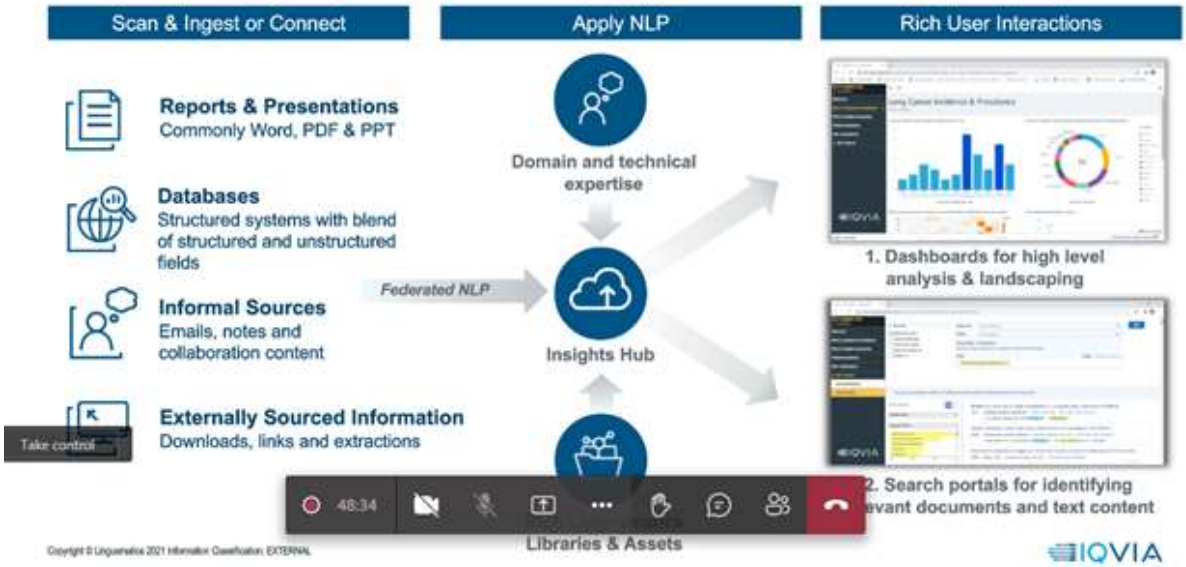
NLP Insights Hub allows users to interact intuitively with unstructured data from across sources

NLP Insight Hubs
Intuitive end-user interfaces



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NLP brings value for health economics and outcomes

Accelerate data point and evidence discovery and analysis

Burden of Disease
- Apply disease definitions
- Incidence
- Prevalence
- Mortality
- Hospitalisation

Patient Populations
- Epidemiology of target sub-groups
- Patient population profiling including factors such as age, socio-demographics

Patient Pathways
- Treatment pathways
- Disease pathways & progression

Standard of Care
- Standard of care for relevant subgroups
- Variation in care provision

Unmet Needs
- Underserved sub-populations

Treatment Costs
- Costs and cost variation
- Value for money

Economics
- [illegible] and cost
- [illegible] impact
- Cost of standard of care

Clinical data
- Efficacy, safety, QoL
- Target therapy and

Guidelines
- Identify target geography and market guidelines

Take control

49:36

Rapid identification of relevant documents and unstructured sources, followed by generation of analysis and insights can be applied to many functions within medical affairs and commercial, such as pricing and market access value chains

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NLP Text Mining Approaches for HEOR

- The availability of increasing amount of data on patients, prescriptions, markets, and scientific literature combined with the wider use of comparative effectiveness make traditional keyword based search techniques ineffectual
- Linguamatics NLP provides the starting point for efficiently performing evidence based systematic reviews over very large sets of scientific literature, mining textual data to filter and extract according to different factors. For example:
  - People, patients, cohort size, demographics, geographical location
  - Disease and related topics
    - › Such as disease/condition, medication/treatment
    - › Disease severity and comorbidity
    - › Genetic information
  - Categorization of HEOR and currency amounts
    - › Using thesauri of pre-defined healthcare outcome terms
    - › Pattern- & Rule-based approaches for currency and cost information
  - Citation information e.g. title, date and type

Take control

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Client use cases for NLP transformation to actionable RWE

Rapid systematic comprehensive extraction of knowledge from streams of unstructured text

- Top 10 Pharma: Evidence literature landscape for prostate cancer
- Top 10 Pharma: Evidence Landscape from Literature for Drug Economics in LatAm
- Top 10 Pharma: An NLP Insights Hub for Influenza in China
- Novo Nordisk: Using NLP to Generate Actionable Insights from Real World Data
- Janssen: RWD for Patient Reported Outcomes from Customer Call Feeds
- Top 10 Pharma: NLP and Machine Learning for Novel Claims for OTC drugs
- Large mid-West Health System; Evaluation of heart failure device performance

Take control

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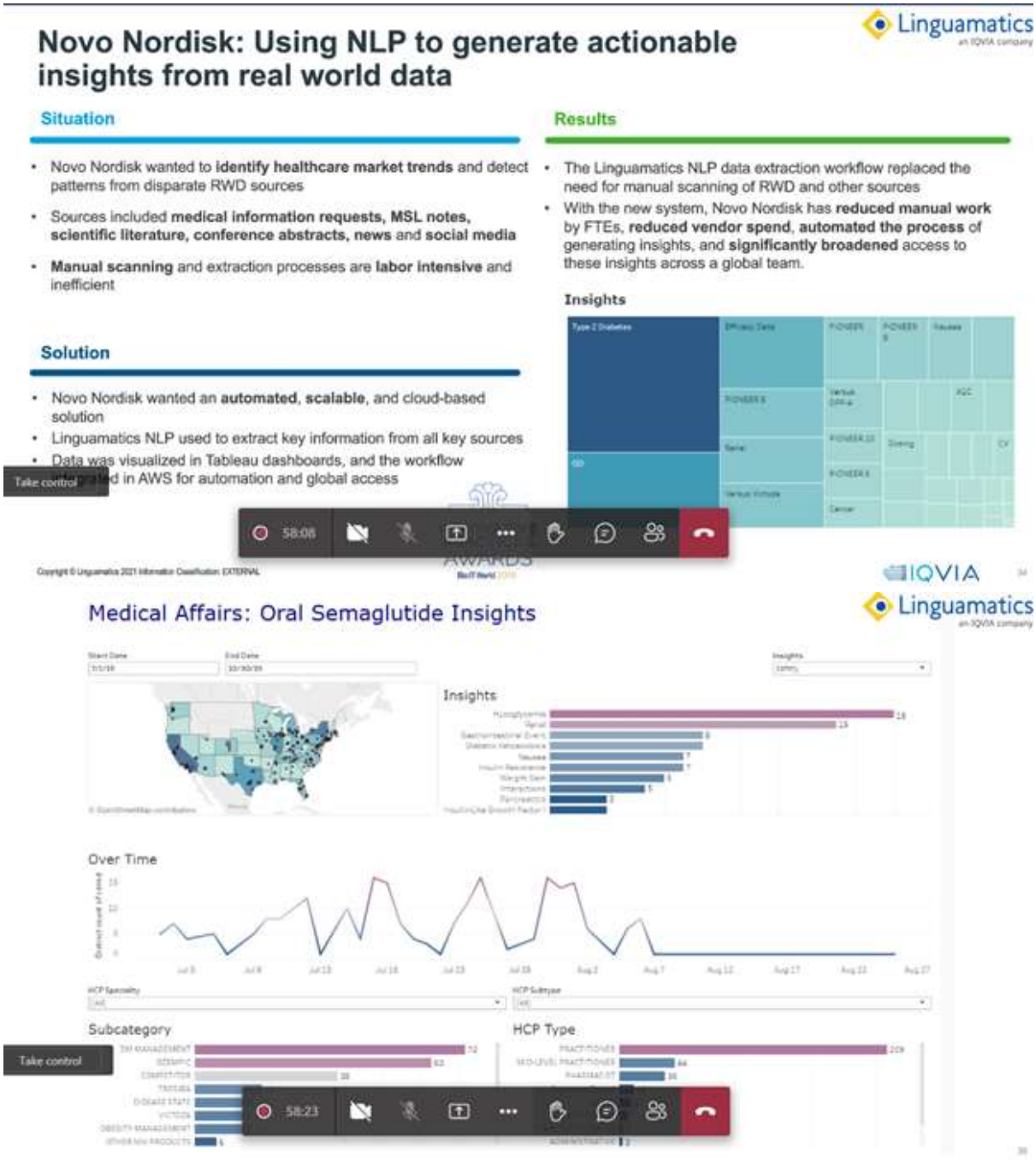
IQVIA

Case Studies:

Case studies were explained by Her assistant, and it was demonstrated even. Their software consists of one type of platform.



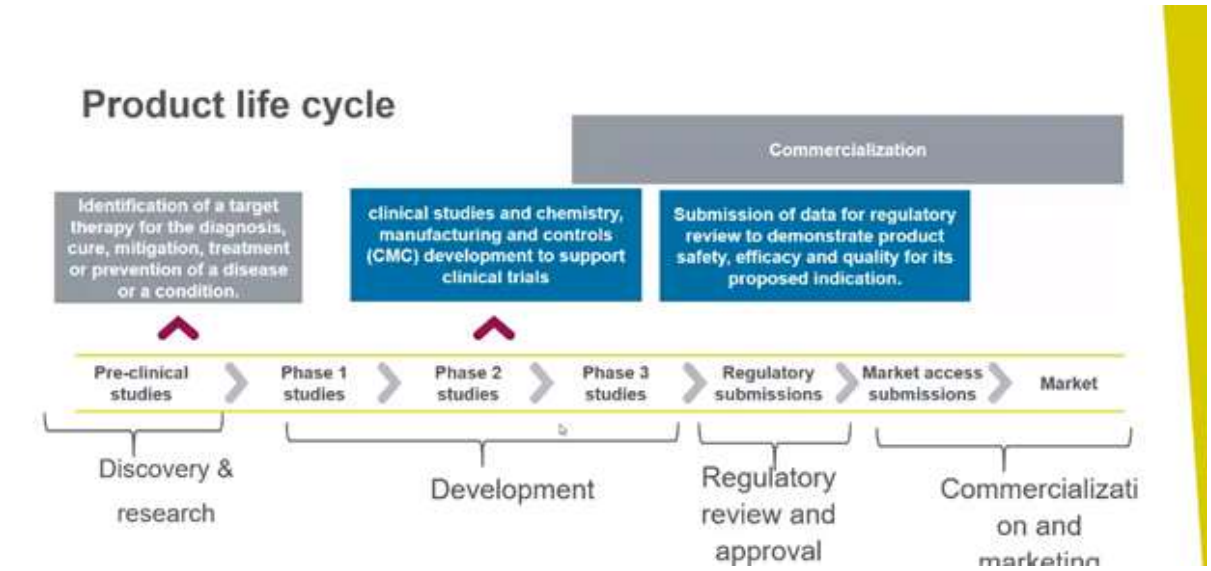
Day – 4 (August 2nd, 2021)

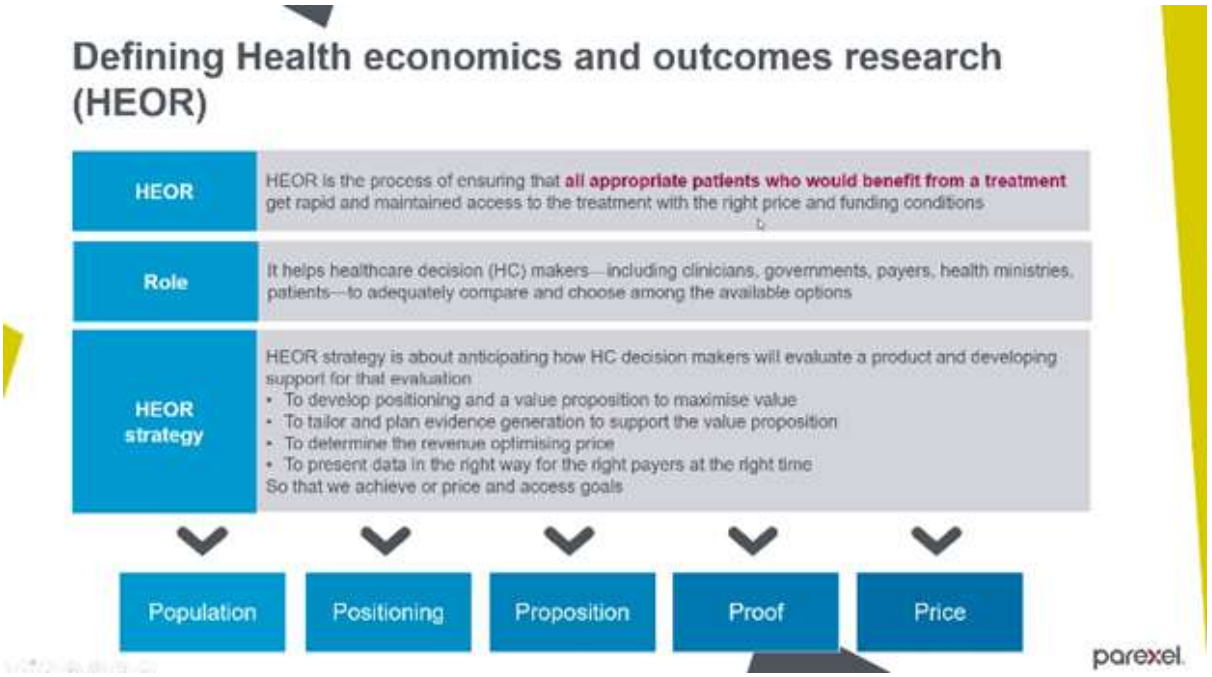
First Session [Dr. Kashif Siddiqui, Parexel, Panchkula**]**

Dr. Kashif Siddiqui had conducted a session on Early product value assessment in HEOR

As there are few design challenges of the existing AI system, to build a new design we have few goals like design should be flexible, modular, confidential & scalable. He has described HEOR Goals, definition of HEOR, various optimize product value, etc.

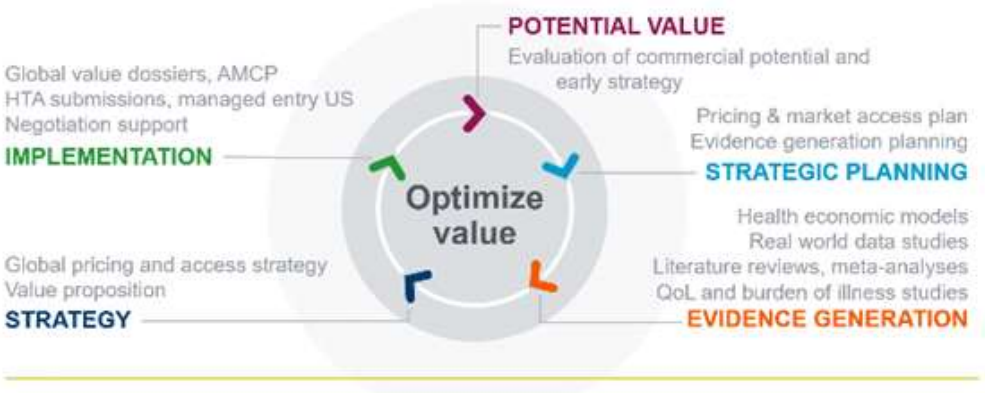
At last, he stated some research challenges for security and privacy.





HEOR goals can be expressed simply …

Various services are provided to optimize product value and return on investment

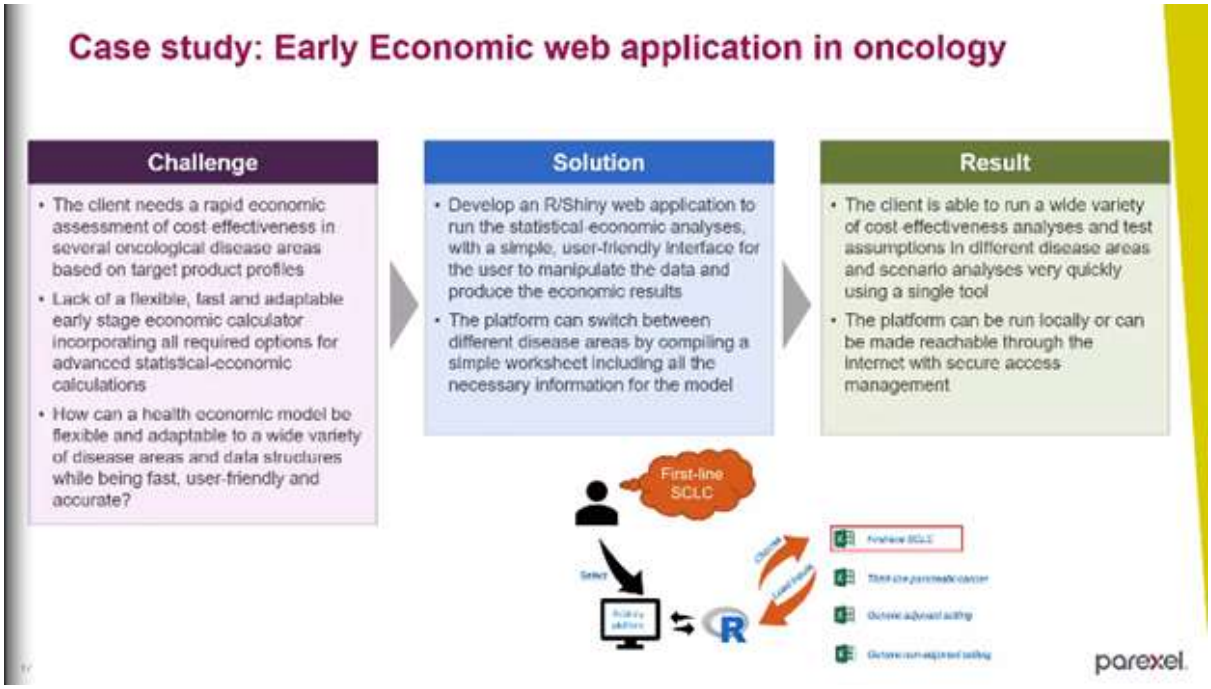


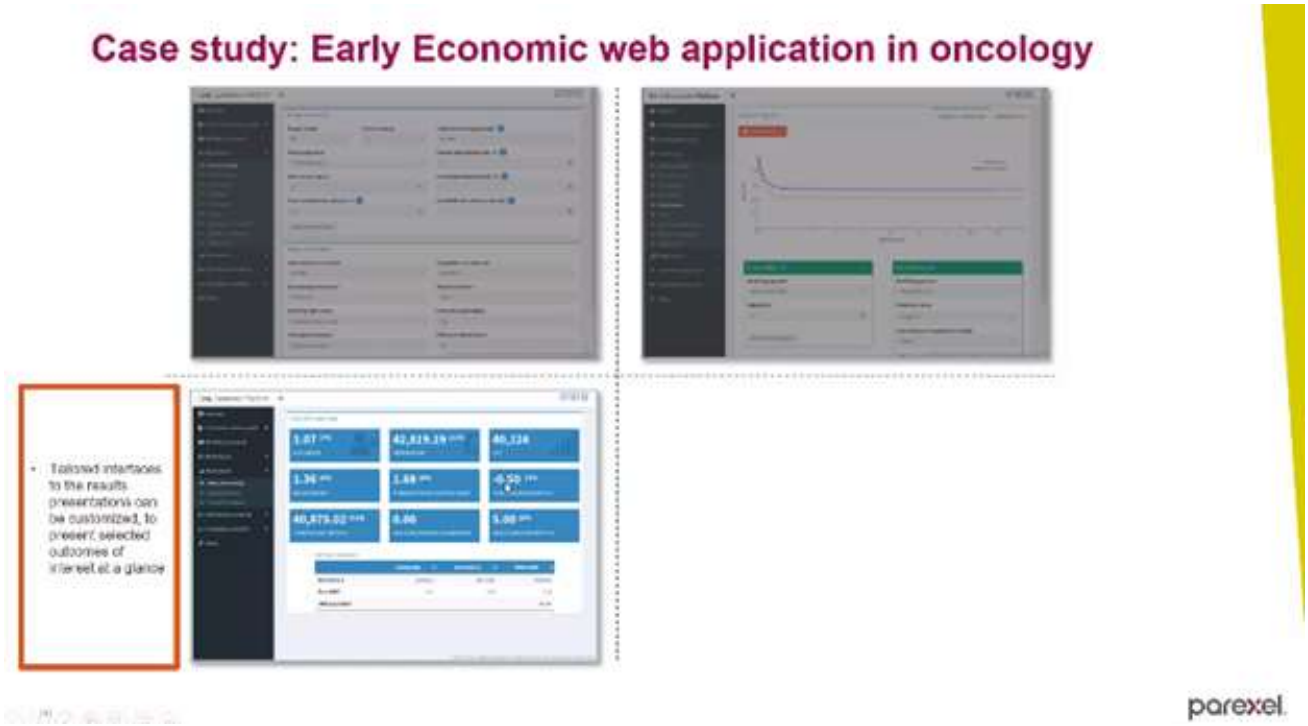
HEOR strategy needs to answer some critical questions

Population	Positioning	Proposition	Proof	Price
What is the expected licensed indication?	What alternative treatments are available? In which setting of care?	What is the unmet need? What is the (patient) benefit of addressing that need? How well does this treatment address the unmet need? What value does this deliver?	What evidence will payers require to support their decision making? What are the consequences of gaps or weaknesses in evidence? What alternative sources of evidence are available?	Who are the critical stakeholders who will make decisions on price and access? What evaluation approaches do they use? What is the preferred price comparator?

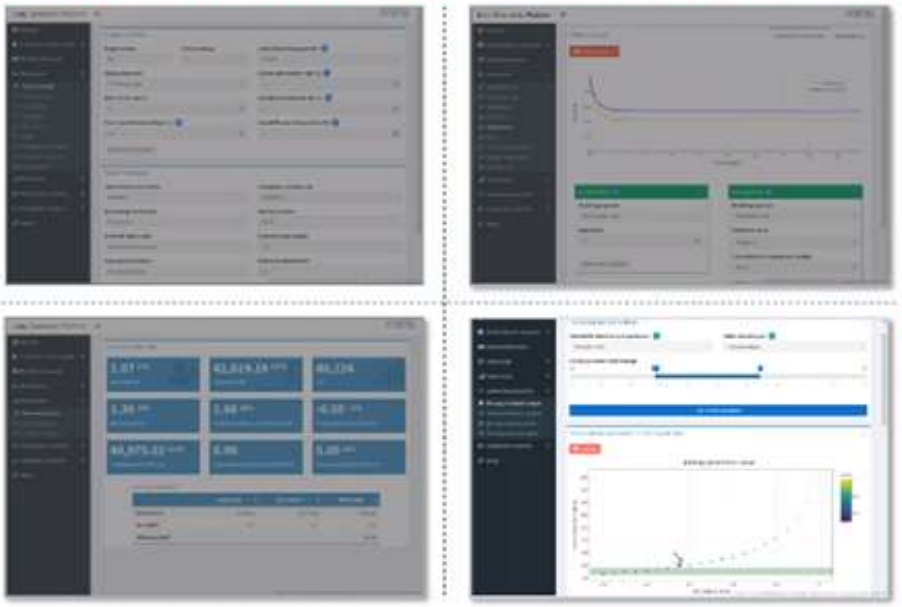
parexel

Total three case studies sir has covered as shown below. Dr. Kashif Siddiqui has joined me on LinkedIn as sir is very much interested in guiding students to take on projects related to HEOR or Pharma.





Case study: Early Economic web application in oncology



Complex deterministic and probabilistic sensitivity analyses can be performed quickly, including:

- one- and two-way threshold analyses
- probabilistic analyses, including value of information

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Bayesian networks predictive modelling: machine learning approach for individualized risk prediction

Situation and client challenge

- The client's product was an immunotherapy drug in mRCC
- Trials were characterized by heterogeneous treatment response
- The client was interested in developing a "personalized" risk prediction model to identify subsets of patients who respond better to therapy

Parexel approach

- Apply a novel risk prediction tool to understand variation in patient response to immunotherapy in mRCC
- Predicted OS, all-cause AEs and treatment-related AEs based on patient characteristics. Assessed model performance using logistic regression

Results and impact

- Risk scores (MSKCC and Heng), biomarkers (hemoglobin, albumin) and performance status were most prognostic for predicting OS, with ideal patient responders having high EQ-5D-3L scores and health state utility values

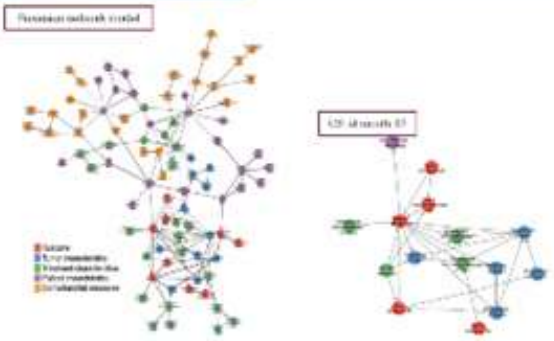
Client and geography

- Large Pharma company
- Oncology
- EU5

Parexel key value

- Innovative approach
- Technical expertise in machine learning and disease expertise

Example of key output



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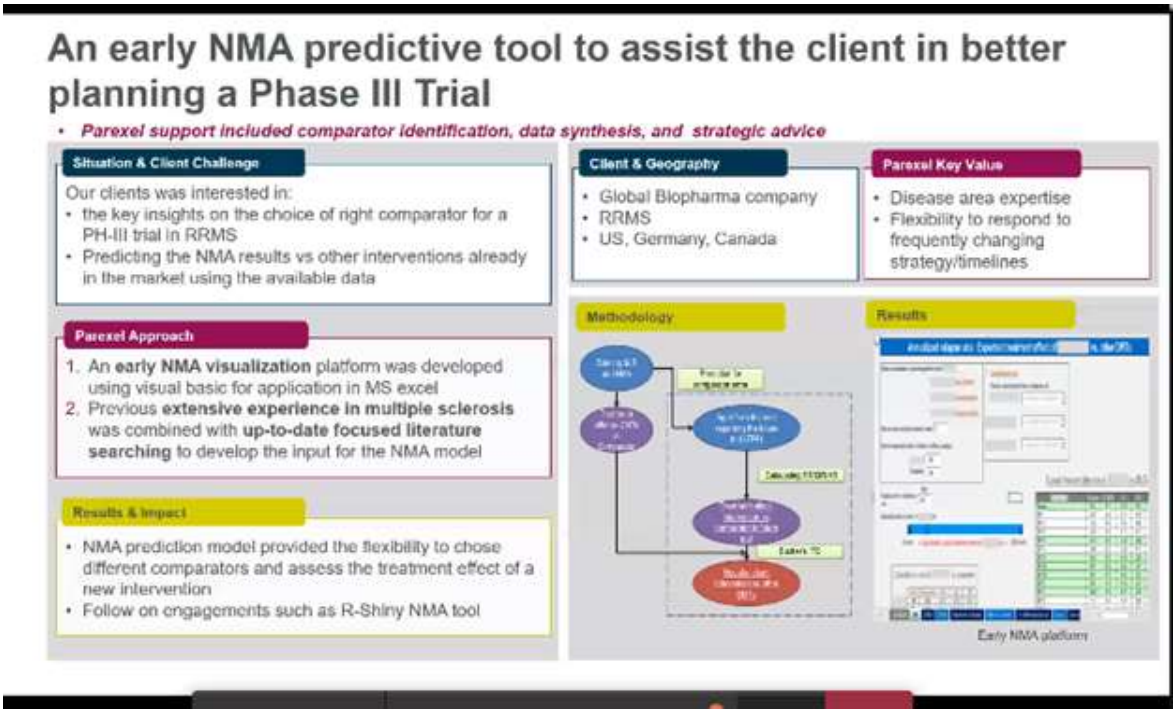
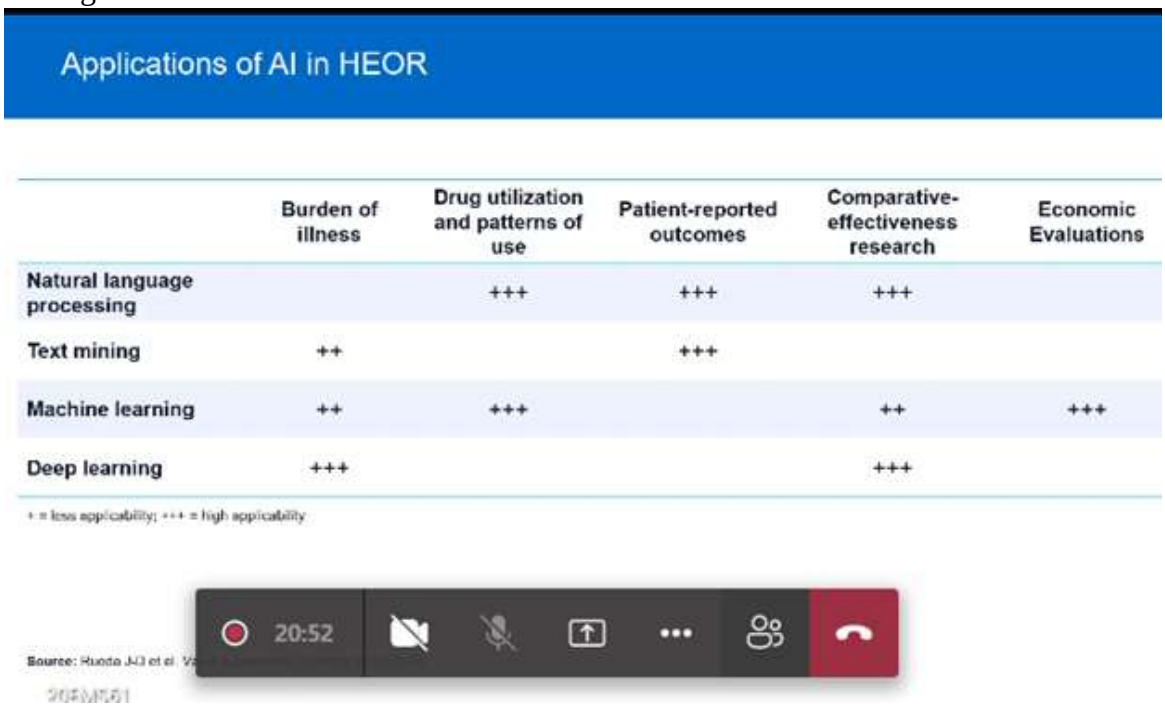
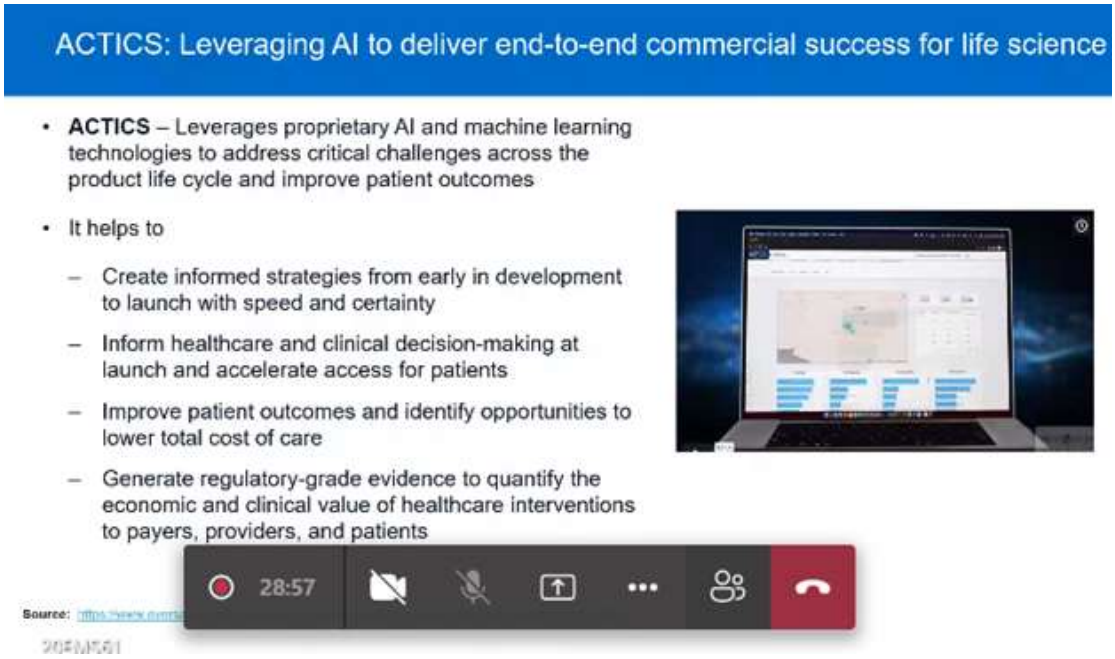


Skill to be noted: Total research based valuable content along with proofs, tables, flow, pictures and so on.

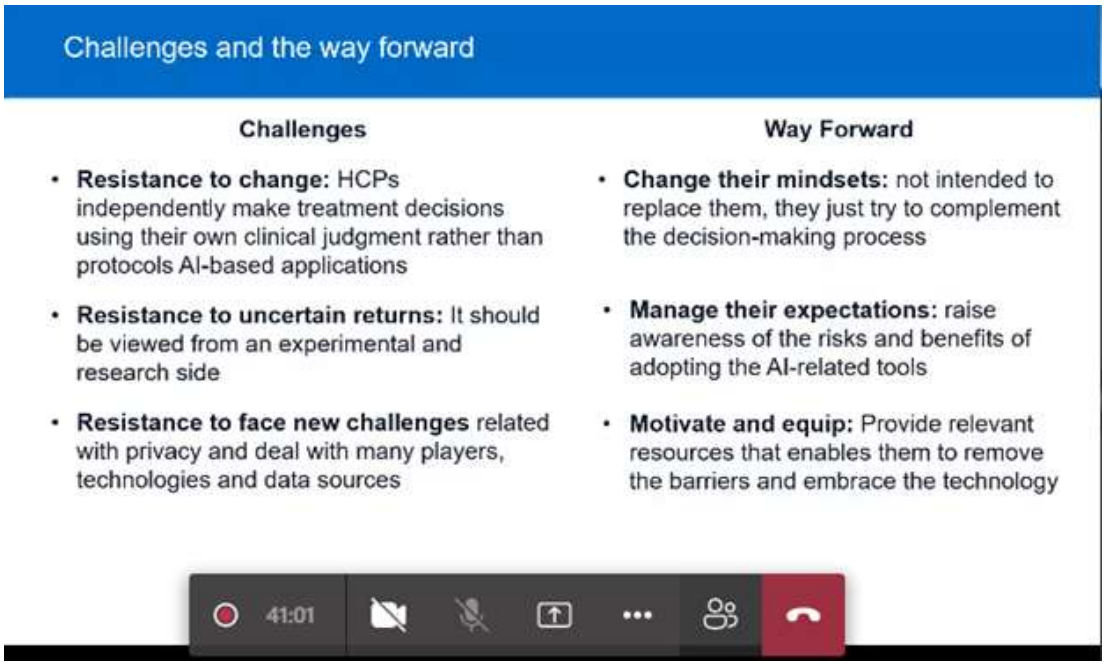
Second Session [Dr. Santosh Tiwari, Novartis Healthcare Private Limited]

Dr. Santosh Tiwari has conducted a session on Transforming HEOR in the Era of Artificial Intelligence.





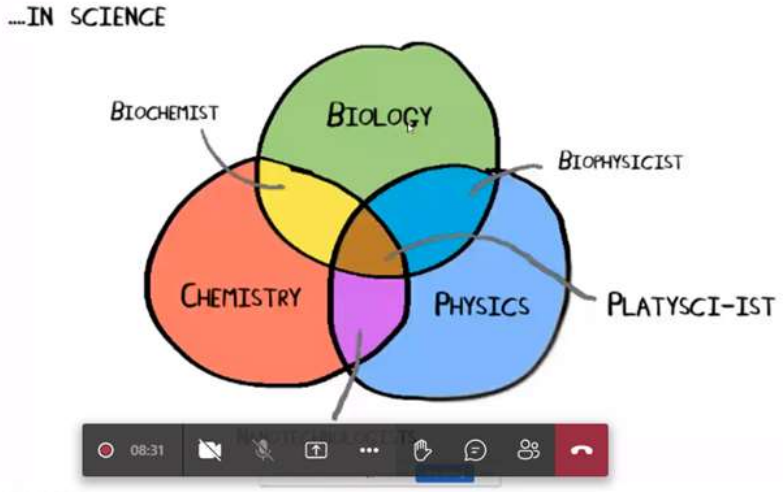
Confluence of HEOR and AI will lead to Precision HEOR.



Third Session [Dr. M. Karthikeyan, NCL, Pune**]**

Dr. M. Karthikeyan has delivered a session on AI for drug design which can help in making personalised medicine. Dr. M. Karthikeyan has shared one of the research papers on “The role of Artificial Intelligence in achieving the sustainable development goals. Sir has emphasised more on multidisciplinary skills and how integration of one subject with other results in the fruitful combinations. As shown in the below example explained by him,

Conventional & Allied Subjects



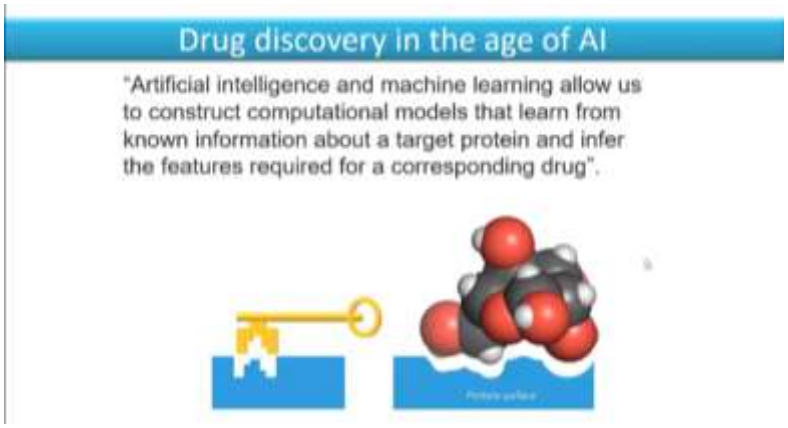
Industry 4.0

Today Job Requirement

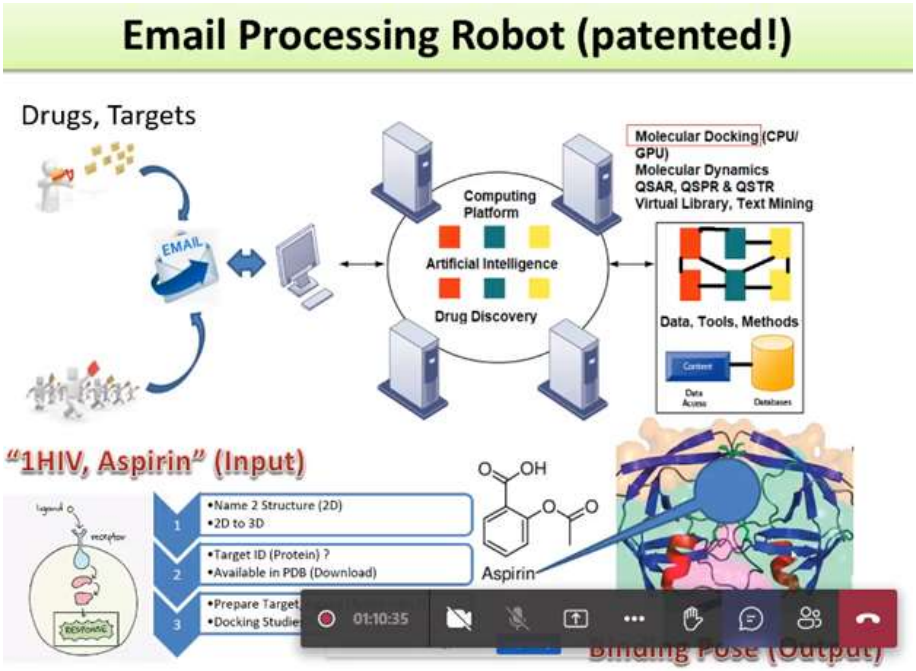
Multi-Pontentiality

A person with Multipotentiality "thrives on learning, exploring, and mastering new skills." As innovators and problem solvers, the multi-passionate have the need to discover anything and everything to satisfy their curiosity.


AI in Drug Discovery
Target Selection and Validation
Compound Screening and Lead Optimization
Preclinical studies
Clinical Trails
Targets related to specific disease:
-Cellular and Genetic Target evaluation
Genomic and proteomic analysis
Bioinformatics predictions
Hit identification, Combinatorial chemistry, HTS and VS
Structure Activity and insilico studies
Cellular functional tests
Model Drug Properties for the disease of interest
Design Molecules to meet the Drug Properties
Algorithms and molecular modelling
NCE for disease of Interest
Chemical Data
Unstructured / Structured Data
NLP, Data Mining, Molecular Mining
QSAR


Drug discovery in the age of AI
"Artificial intelligence and machine learning allow us to construct computational models that learn from known information about a target protein and infer the features required for a corresponding drug".

Own Product:

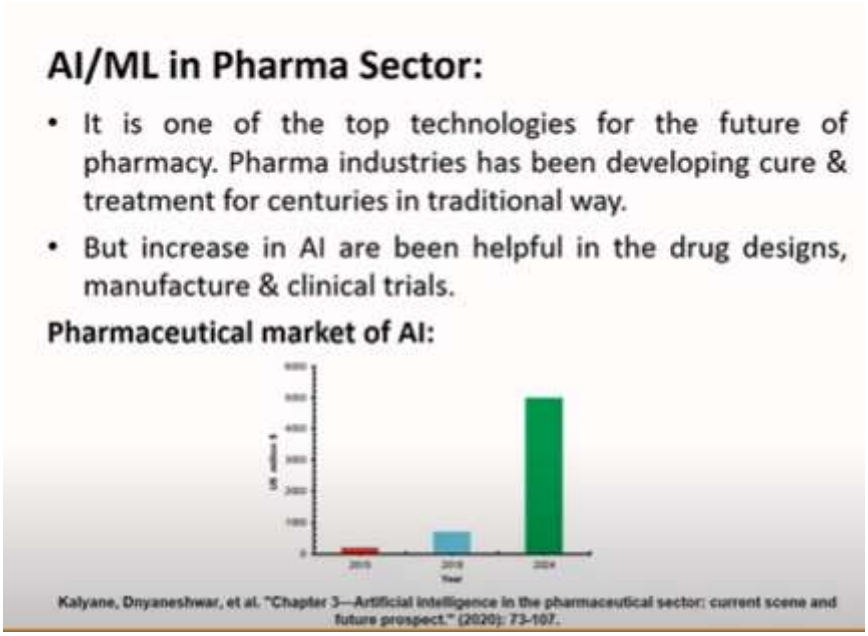

Email Processing Robot (patented!)
Drugs, Targets
EMAIL
Computing Platform
Artificial Intelligence
Drug Discovery
Molecular Docking (CPU/GPU)
Molecular Dynamics
QSAR, QSPR & QSTR
Virtual Library, Text Mining
Data, Tools, Methods
"1HIV, Aspirin" (Input)
•Name 2 Structure (2D)
•2D to 3D
•Target ID (Protein) ?
•Available in PDB (Download)
•Prepare Target
•Docking Studies
Aspirin
01:10:35

Day – 5 (August 2nd, 2021)

First Session [Dr. Ashutosh Kumar, NIPER Kolkata**]**

This session was full of tools and technologies used for Artificial Intelligence and an introduction about various programming languages used for AI/ML.

As a computer engineer, we must be having a question that how this AI/ML is useful in Pharma industries? But Dr. Ashutosh has given an abstract vision towards it.



Skill to be noted: delivered lecture without taking help of any PPT or Video, continuously for 3 hours!

Second Session [Mr. Varun Upadhyay, National Project Coordinator, Arts of Living, Bengaluru**]**

This session was completely non-technical. Ma'am has trained us with the in-depth

knowledge of getting stress free. Also, taught various types of Yoga steps for doing at a working place. It was a really *happy ending :)* to the five days' workshop.

Certificate of Completion:

No:ATAL/2021/1627644228

ATAL

KOLKATA

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj, New Delhi – 110 070

AICTE Training And Learning (ATAL) Academy

Certificate

This is certified that Hima Kamlesh Soni, Assistant Professor of Saffrony Institute of Technology participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "AI in Health Economics Outcome Research" from 2021-8-2 to 2021-8-6 at NIPER Kokata.

Adviser-I, ATAL Academy

Coordinator

Thank You,

Prepared by
Prof. Hima Soni

S.P.B. Patel Engineering College
Linch

MANAGEMENT DEVELEOPMENT PROGRAMME

PEOPLE MANAGEMENT & ORGANIZATION: Leading with Purpose

S.P.B. Patel Engineering College

3 Days Short Course

S.P.B. Patel Engineering College

TYPE: SHORT COURSE

THEMATIC AREA: PEOPLE MANAGEMENT & ORGANIZATION

DURATION: 3 DAYS

Expert Name: Dr. Sumit Shah

Number of Participants: 90

Date: 6-7 July 2020

Introduction:

At S.P.B. Patel Engineering College, a dynamic three-day short course on "People Management & Organization" unfolds, focusing on the transformative power of purpose-driven leadership. Over the course of immersive lectures, interactive discussions, and practical exercises, participants delve into the intricacies of leading with purpose, aiming to inspire, motivate, and align teams towards collective success.

Structured around three core themes, each day offers a deep dive into essential aspects of purpose-driven leadership. Day 1 delves into "Defining and Differentiating Purpose," emphasizing the crucial role of clarity and direction in leadership. Day 2 explores "Purpose and Others," shedding light on the significance of aligning personal and organizational goals with a higher purpose. Finally, Day 3 focuses on "Purpose and Strategy," guiding participants on aligning actions and empowering teams to drive towards a shared vision.

STRUCTURE OF THE COURSE:

The course is structured over a 3-day program including **3 immersive and interactive lectures**, discussions, and exercises

Scheduling:

Day 1. Defining and differentiating purpose

Day 2. Purpose and Others

Day 3. Purpose and Strategy

Day 1. Defining and differentiating purpose

As a leader, it's important to have a clear sense of purpose and direction. When you lead with purpose, you inspire and motivate your team to achieve their goals and work towards a common objective. Purposeful leadership creates a positive work environment that fosters collaboration, innovation, and creativity. In this article, we'll explore the importance of leading with purpose and provide tips on how to motivate your team to achieve success.

Purpose-driven leadership is a powerful lever of success. It helps organizations achieve their goals and can inspire people to do their best work. It creates a sense of shared purpose. It bridges the gap between individual and organizational values. It is the single most important factor determining if people are engaged with work. It drives people to do what they do, day in day out.

Benefits of Purpose-Driven Leadership Training

There are many benefits to bringing purpose-driven leadership into your workplace, such as:

- **Greater awareness of leadership influence:** Whether positive or negative, understanding how our leadership influence impacts those we lead will make positive room for continuous improvement, team engagement, and employee retention.
- **Learn through activities and discussion with leaders from other organizations:** Every organization has their own challenges to work through. This course allows you to connect with leaders in other organizations, learn together, and discuss solutions to common challenges.
- **Gain practical tools to develop stronger leadership skills:** This program equips each participant with leadership tools that promote stronger influence, continuous improvement, and on going leadership skills that will positively impact your own leadership journey, your teams effectiveness, and your overall work culture.

Day 2. Purpose and Others

In today's fast-paced and competitive world, it's more important than ever to lead with purpose. Purpose-driven leaders are those who are driven by a sense of purpose and who align their personal and organizational goals with a higher purpose. These leaders are able to inspire their teams to achieve great things, create a positive impact on society, and ultimately achieve long-

term success. In this article, we will explore why leading with purpose is essential and how you can become a purpose-driven leader.

Why Leading with Purpose is Essential

- ***Provides Meaning and Fulfillment***
  Leading with purpose provides meaning and fulfillment to both leaders and their teams. When leaders and teams are working towards a higher purpose, they are more likely to feel a sense of satisfaction and fulfillment in their work. This not only leads to a more positive work environment but also increased productivity and overall success.

- ***Creates a Stronger Connection with Customers and Stakeholders***
  Leading with purpose also creates a stronger connection with customers and stakeholders. When a company has a clear sense of purpose, it is easier to communicate the company's values and mission to others. This creates a more loyal customer base and helps attract new customers who are aligned with the company's values.

- ***Drives Long-term Success***
  Leaders who lead with purpose are also more likely to achieve long-term success. Purpose-driven leaders are able to create a culture of excellence where employees feel empowered and motivated to achieve their best. This leads to increased productivity, better retention rates, and ultimately higher profits.

Day 3. Purpose and Strategy

Leading with purpose is about having a clear understanding of your values, beliefs, and goals as a leader. It's about aligning your personal and professional goals to create a shared vision for your team. Purpose-driven leaders inspire their teams by demonstrating passion, commitment, and authenticity. They lead by example and empower their team members to take ownership of their work.

How to Become a Purpose-Driven Leader

- *Define Your Purpose*
  The first step in becoming a purpose-driven leader is to define your purpose. What drives you? What are your values and beliefs? Once you have a clear sense of your purpose, you can align your goals and actions with your higher purpose.

- *Communicate Your Purpose*
  Once you have defined your purpose, it's important to communicate it to your team. This creates a sense of alignment and motivation towards a common goal. Be sure to communicate your purpose in a clear and concise manner that resonates with your team

- *Align Your Actions with Your Purpose*
  As a purpose-driven leader, it's important to align your actions with your purpose. This means making decisions that are in line with your values and beliefs. It also means creating a culture of excellence where your team feels supported and motivated to achieve their best.

- *Empower Your Team*
  A purpose-driven leader empowers their team. This means giving your team the resources they need to succeed and providing them with opportunities to grow and develop. It also means creating a safe and supportive work environment where your team feels comfortable taking risks and trying new things.

- *Measure Your Impact*
  Finally, it's important to measure your impact. Set goals and metrics that align with your purpose and track your progress towards those goals. This will help you stay focused on your purpose and ensure that you are making a positive impact on society.

How to identify your leadership purpose

Identifying your leadership purpose starts with reflecting on your values, beliefs, strengths, and passions. Ask yourself questions like: What motivates me? What do I stand for? What impact do I want to have on my team or organization? Once you have a clear understanding of your leadership purpose, you can use that as a guide when setting goals, making decisions, and communicating with your team.

Ways to inspire purpose in your team

Inspiring purpose in your team starts with creating a shared vision that aligns with the values and goals of each individual member. Encourage open communication and collaboration so that everyone feels heard and valued. Provide opportunities for professional development so that team members can grow both personally and professionally. Celebrate successes along the way to keep morale high and motivation strong.

The role of feedback in leading with purpose

Feedback is essential for leading with purpose because it helps you understand how well you're aligning your actions with your values and goals as a leader. Solicit feedback from your team members on a regular basis to understand what's working well and what could be improved. Use that feedback to adjust your approach and stay aligned with your leadership purpose.

Identification of team's purpose and aligning it with organization's goals:

- **Identification: Team's Purpose**

  First, it's important to understand what drives your team members. What are their passions and goals? What do they hope to achieve in their careers? By identifying these individual purposes, you can work towards aligning them with the overall purpose of your organization.

- **Defining Organization's Goals**

  Next, it's crucial to define the goals of your organization. What is the mission statement? What are the values and objectives that drive your company forward? By clearly defining these goals, you can create a sense of direction and purpose for your team.

- **Aligning Individual Purpose with Organizational Goals**

  Once you have a clear understanding of both individual purpose and organizational goals, it's time to align them. This means finding ways to connect each team member's personal motivations with the overall mission of the company. This can be done through setting specific targets and creating a culture that values individual growth while working towards shared goals.

- **Creating a Culture of Purpose**

  To truly motivate your team, it's important to establish a culture that values purpose-driven work. This means recognizing and celebrating individual contributions towards shared goals. It also means fostering an environment where continuous learning and development are encouraged.

- **Providing Opportunities for Growth**

  Finally, providing growth opportunities is essential in motivating your team towards success. This can be done through training programs, mentorship opportunities, and career advancement paths. When employees feel valued and supported in their personal growth, they are more likely to feel motivated and committed to achieving organizational success.

Strategy:

Strategies for communicating purpose effectively to motivate and inspire team:

Know Your Purpose

Before you can effectively communicate your purpose to your team, you need to have a clear understanding of what it is yourself. Take the time to reflect on why you do what you do and how it ties into the overall goals and values of your organization.

Be Authentic

When communicating your purpose to your team, it's important to be authentic and genuine. Your team will be able to tell if you're not truly invested in the purpose you're trying to convey, so make sure that you believe in what you're saying.

Use Storytelling

One of the most effective ways to communicate your purpose is through storytelling. Share stories about how your organization has made a difference in people's lives or how your team has overcome challenges in pursuit of a common goal. These stories will help bring your purpose to life and make it more relatable for your team.

Connect with Individual Motivations

Understand that each member of your team may be motivated by different things. Take the time to get to know each person individually and find out what drives them. Then, tie their individual motivations into the larger purpose of the organization.

Provide Clear Direction

Once you've communicated your purpose, provide clear direction on how each member of the team can contribute towards achieving that purpose. Set specific goals and expectations so that everyone knows exactly what they need to do in order to help move the organization forward.

Celebrate Successes

Finally, remember to celebrate successes along the way. Recognize when members of your team go above and beyond in pursuit of the organization's purpose, and publicly acknowledge their contributions. This will help build morale and motivate others on the team to strive for excellence as well.

The role of leading by example in achieving success through purpose-driven leadership

The Importance of Purpose-Driven Leadership

Purpose-driven leadership is a mindset that prioritizes the greater good over personal gain. It entails leading with a clear sense of purpose and aligning all team members toward achieving a common goal. Purpose-driven leaders inspire their teams to work together towards a shared vision, resulting in increased motivation, engagement, and productivity.

Leading by Example: What It Means

Leading by example is a fundamental aspect of purpose-driven leadership. It involves modeling the behaviors and values that you want your team members to adopt. By setting an example, you demonstrate your commitment to the team's goals, build trust and credibility, and motivate your team to follow your lead.

The Benefits of Leading by Example

When leaders lead by example, they inspire their team members to do the same. This fosters a culture of accountability and responsibility where everyone takes ownership of their work. Additionally, leading by example can help build trust among team members, increase collaboration, and create a positive work environment.

Tips for Leading with Purpose

To lead with purpose effectively, start by defining your mission statement or vision for your team's success. Communicate this vision clearly to your team members and ensure that it aligns with their individual goals and interests. Additionally, practice active listening to understand each team member's strengths and weaknesses so that you can assign tasks accordingly.

Remember always to lead by example. Hold yourself accountable for meeting deadlines, following through on commitments, and demonstrating the values you expect from your team members.

Finally, celebrate small wins along the way to keep morale high and motivation levels up. A positive work environment will encourage continued effort toward achieving shared goals.

The importance of ongoing evaluation and adjustment to ensure that your leadership remains focused on purpose

Constant evaluation and adjustment

As a leader, it's important to consistently evaluate and adjust your approach to ensure that you're staying focused on your purpose. This means regularly assessing your team's progress, identifying areas for improvement, and making necessary changes to help everyone stay on track.

Staying true to your purpose

One of the key ways to motivate your team is by staying true to your purpose. When everyone understands the overarching goals and mission of the organization, they're more likely to feel motivated and inspired to work towards those goals.

Communicating effectively

Effective communication is another critical component of motivating a team towards success. This means being transparent about goals, expectations, and progress, as well as actively listening to feedback from team members. By creating an environment where open communication is encouraged, leaders can foster a sense of trust and collaboration among their team.

Nurturing a positive culture

A positive company culture can also go a long way in motivating a team towards success. Leaders should prioritize creating an inclusive environment where everyone feels valued and supported.

This means investing in employee development programs, recognizing achievements, and fostering a sense of community within the organization.

Leading by example

Finally, one of the most effective ways to motivate a team is by leading by example. When leaders model the behavior they expect from their team members — such as hard work, dedication, and accountability — it sets the tone for the entire organization. By embodying these qualities themselves, leaders can inspire their teams to do the same.

Conclusion and call-to-action for leaders to embrace purpose-driven leadership.

Embrace Purpose-Driven Leadership

Leaders must embrace purpose-driven leadership if they want to motivate their team and achieve success. This means defining and communicating a clear purpose that aligns with the company's values and inspires employees. Purpose-driven leadership involves leading with empathy, collaborating with others, and prioritizing the well-being of employees.

Prioritize Employee Well-being

To lead with purpose, leaders must prioritize employee well-being. This means creating a work environment that fosters a sense of community, encourages work-life balance, and provides opportunities for personal growth. Leaders should also listen to their employees' concerns and address them in a timely manner.

Foster Collaboration

Collaboration is essential for achieving success in any organization. Leaders should create an environment that fosters collaboration by encouraging open communication, setting clear goals, and recognizing the contributions of each team member. This not only leads to better outcomes but also promotes a sense of community within the organization.

Lead With Empathy

Empathy is essential for effective leadership. Leaders who can put themselves in their employees' shoes are better able to understand their needs and motivations. This allows them to make more informed decisions that benefit both the organization and its employees.

Communicate Clearly

Communication is key when it comes to motivating your team and achieving success. Leaders should communicate their vision clearly and often to ensure that everyone is on the same page. They should also encourage open communication among team members to promote collaboration and problem-solving.