Report on

IEEE Technical Talk Series 2021

Expert: Dr. Arnav Bhavsar

July 21, 2021

Title:. Applications of Deep Learning in Medical Image Analysis

IEEE Signal Processing Society

Gujarat Section

- CONTENTS

- POSTER FOR THE TALK

- EXPERT PROFILE

Dr. Arnav Bhavsar

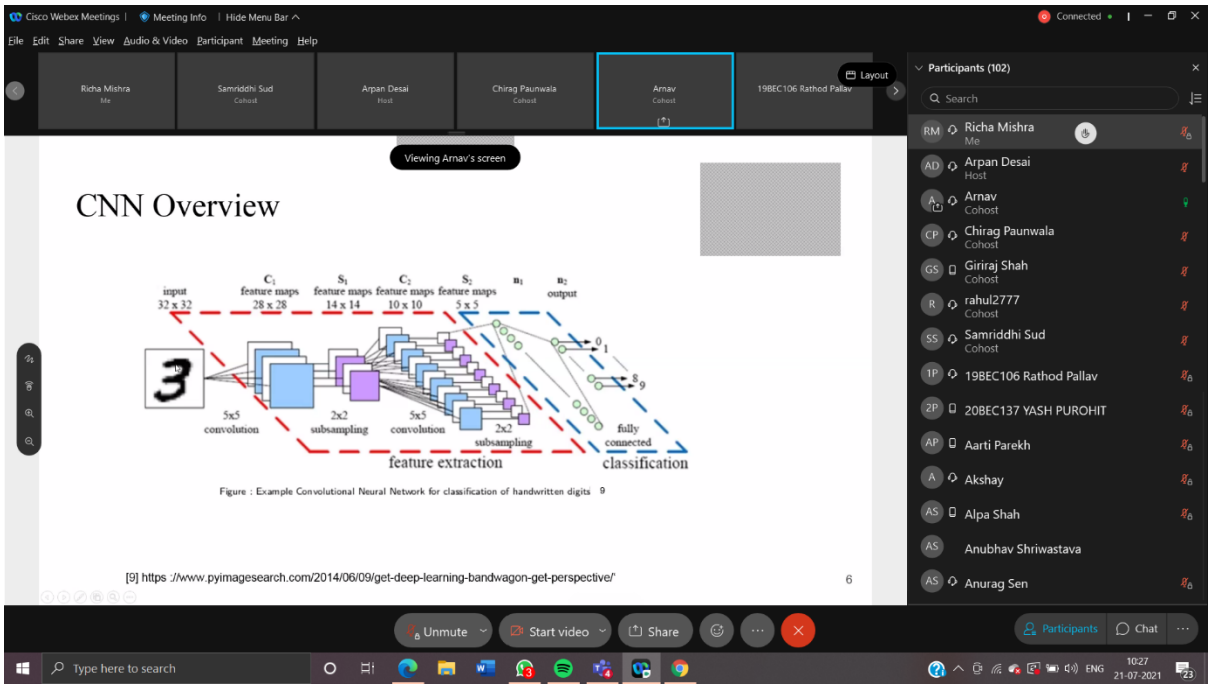
Associate Professor at IIT Mandi

Dr. Arnav Bhavsar is the assistant Professor at Indian Institute of Technology Mandi. He has done his research in Computer Vision, Image and Signal Processing, and Machine Learning. His research work has been published in various international journals(IEEE PAMI, Springer IJCV, Elsevier CVIU) and conferences(e.g. BMVC, ICPR, ICIP, DAGM).He has served as a reviewer for various international journals(IEEE Trans. on Industrial Electronics, Elsevier PRL, Elsevier IVC, Elsevier CVIU, Elsevier Signal Processing, Optical Engineering, Information Fusion).

INTRODUCTION:

SPS Chapter of IEEE GCET SB in collaboration with IEEE SPS Gujarat Section conducted and Expert Talk in the Technical Talk Series which focused on the topic "**Applications of Deep learning in Medical Image Analysis".**

The speaker for this event was Dr. Arnav Bhavsar, who is an associate professor at IIT Mandi. Dr. Arnav Bhavsar discussed about the various applications of Deep learning in Medical Image Analysis.



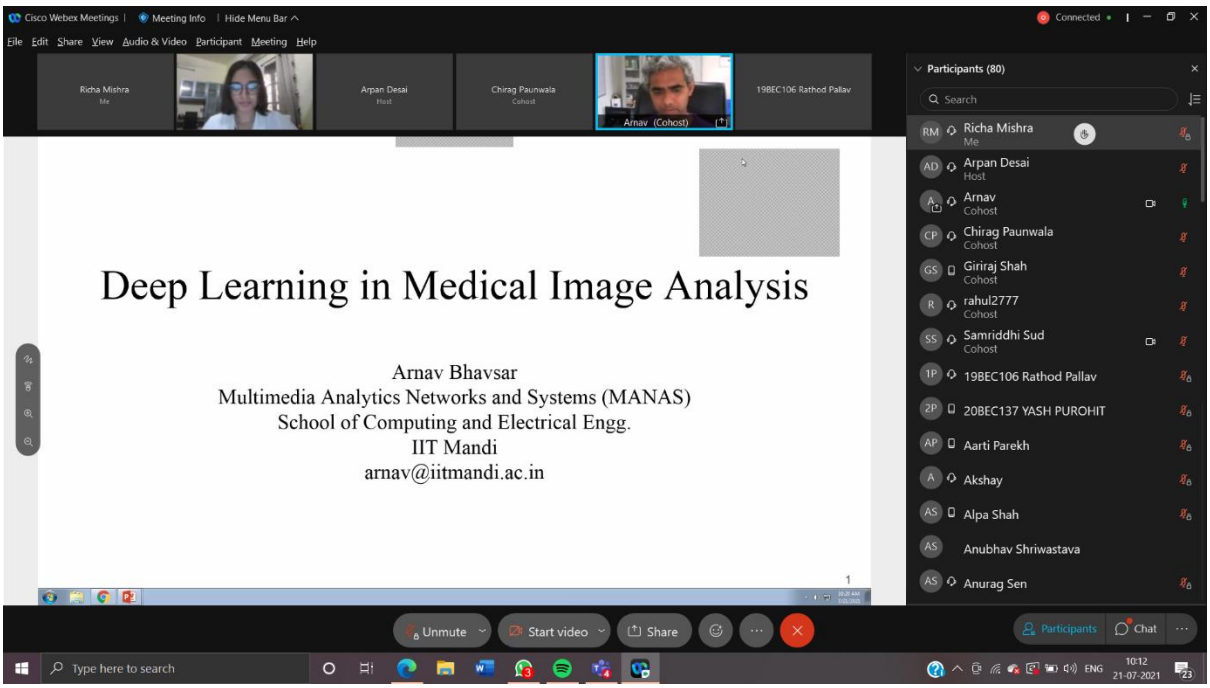
ABOUT THE EVENT:

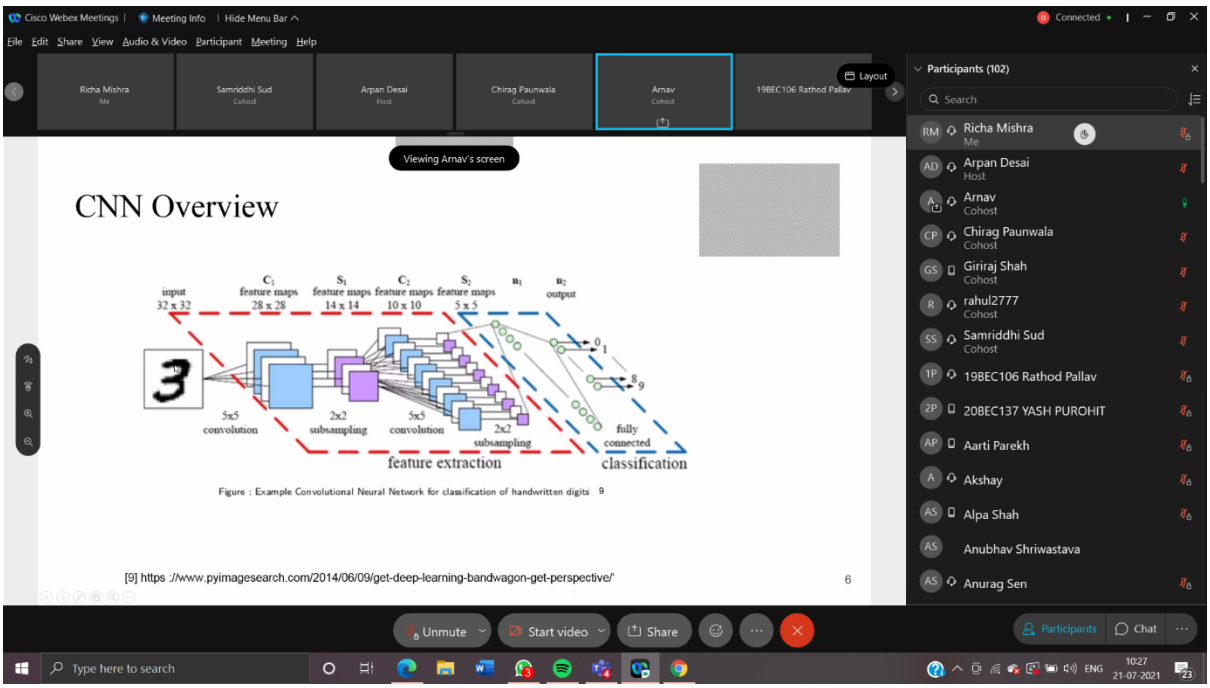
The talk started with the introduction of the Image analysis and some basics of deep learning in that. Then participants were presented what are the types of Medical Imaging by showing them real images with example. Then after sir discussed about convolutional Neural Networks and their use.

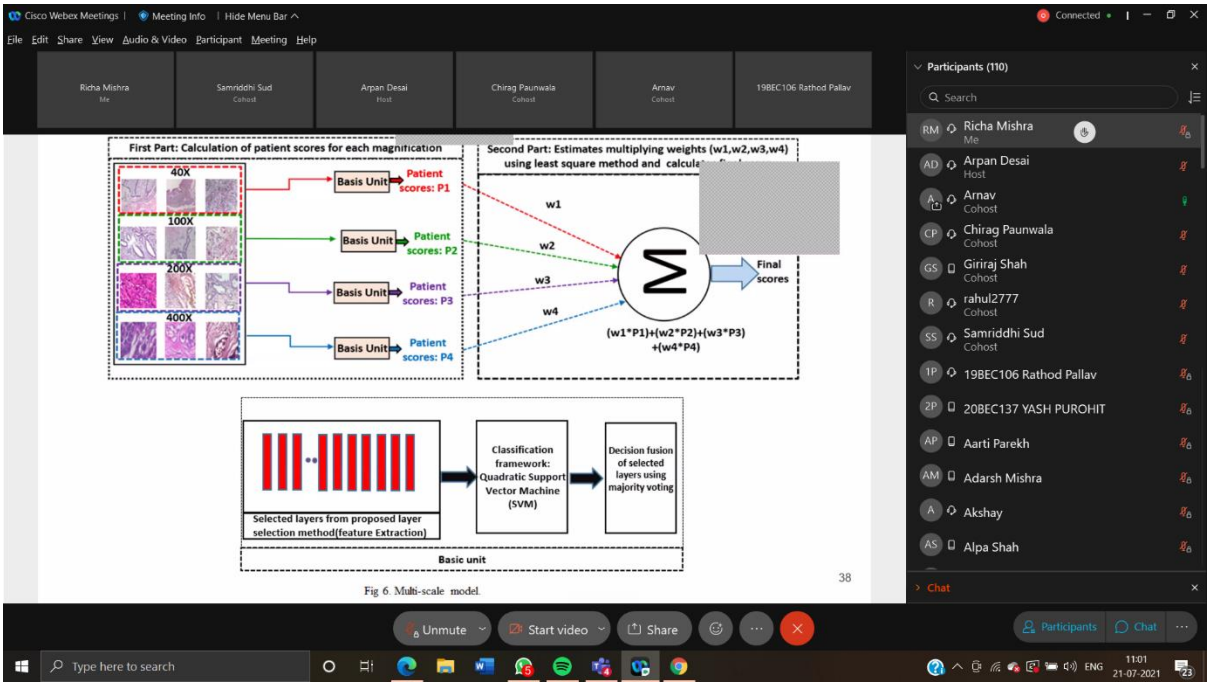
The session continued with the topic of Machine learning architectures and what is Supervised learning Models.

After the completion of the topics, there was an interactive QnA session with intriguing questions and sir answered all the questions which made the session more engaging and fruitful. All the participants gained very useful knowledge of Deep learning in Image Analysis and were thankful to the speaker for sharing his knowledge with them.

- GLIMPSES OF THE TALK



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Richa Mishra
Samriddhi Sud
Arpan Desai
Chirag Paunwala
Arnav
19BEC106 Rathod Pallav
Participants (110)
Search
Richa Mishra Me
Arpan Desai Host
Arnav Cohost
Chirag Paunwala Cohost
Giriraj Shah Cohost
rahul2777 Cohost
Samriddhi Sud Cohost
19BEC106 Rathod Pallav
20BEC137 YASH PUROHIT
Aarti Parekh
Adarsh Mishra
Akshay
Alpa Shah
Chat
First Part: Calculation of patient scores for each magnification
40X
100X
200X
400X
Basis Unit
Patient scores: P1
Patient scores: P2
Patient scores: P3
Patient scores: P4
Second Part: Estimates multiplying weights (w1,w2,w3,w4) using least square method and calcula
w1
w2
w3
w4
Final scores
(w1*P1)+(w2*P2)+(w3*P3) +(w4*P4)
Selected layers from proposed layer selection method(feature Extraction)
Classification framework: Quadratic Support Vector Machine (SVM)
Decision fusion of selected layers using majority voting
Basic unit
38
Fig 6. Multi-scale model.
Unmute
Start video
Share
Participants
Chat
Type here to search
ENG
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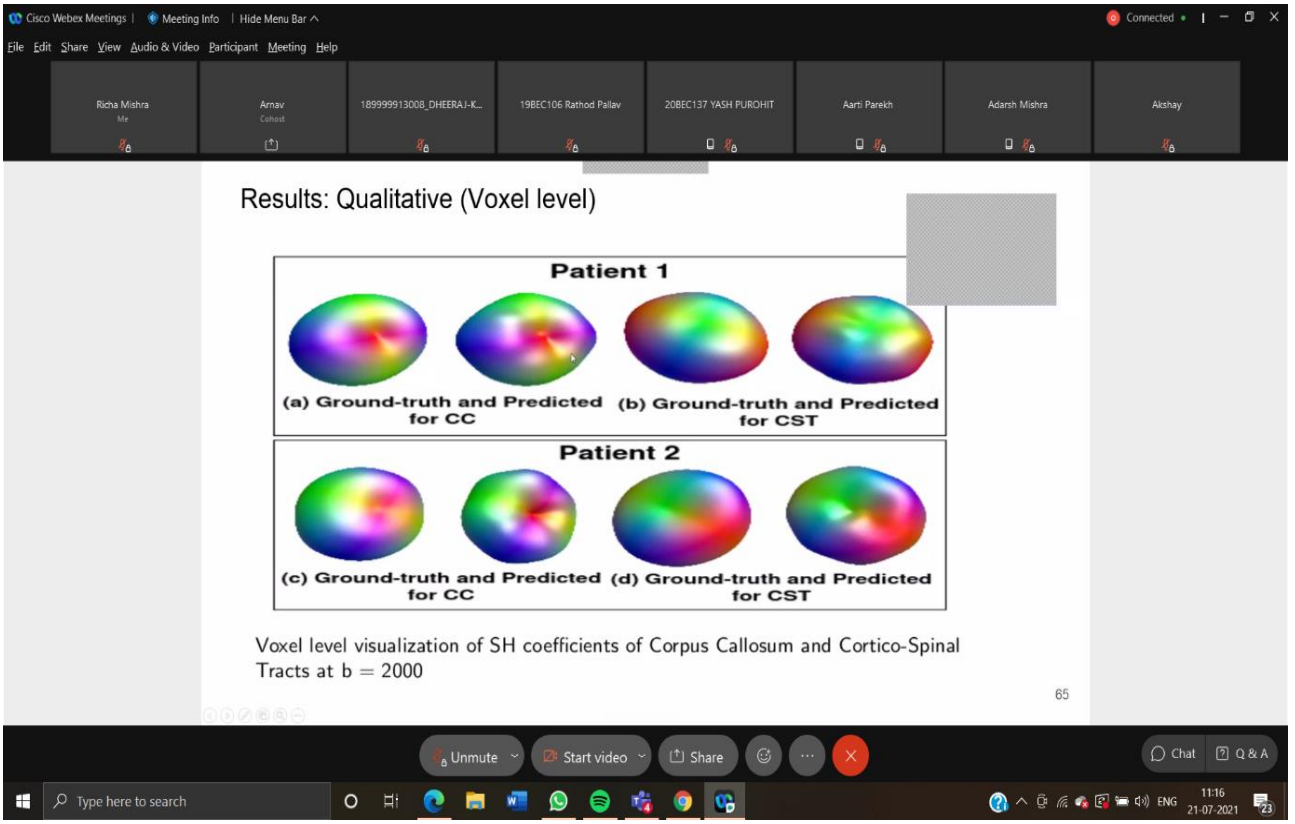
21-07-2021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Richa Mishra
Arnav
189999913008_DHEERAJ-K...
19BEC106 Rathod Pallav
20BEC137 YASH PUROHIT
Aarti Parekh
Adarsh Mishra
Akshay
Results: Qualitative (Voxel level)
Patient 1
(a) Ground-truth and Predicted for CC
(b) Ground-truth and Predicted for CST
Patient 2
(c) Ground-truth and Predicted for CC
(d) Ground-truth and Predicted for CST
Voxel level visualization of SH coefficients of Corpus Callosum and Cortico-Spinal Tracts at b = 2000
65
Unmute
Start video
Share
Chat
Q & A
Type here to search
ENG
11:16
21-07-2021

- MOMENTO FORMAT

- NUMBER OF PARTICIPANTS

  Total: 119

  IEEE Members: 43

  Non IEEE Members: 76

Report Prepared by: Richa Mishra

Vice-Chairperson |IEEE SPS GCET Chapter