



BABA FARID COLLEGE OF ENGG. & TECHNOLOGY

AICTE-ISTE sponsored one-week online Orientation/Refresher Programme

(PHASE-III)

On

DEVELOPMENTS IN AI & ROBOTICS

Date of orientation programme: 07-12-2020- 12-12-2020

Collaborative institutions: AICTE & ISTE

Baba Farid college of Engineering & Technology, Bathinda organized one-week online Faculty development Programme sponsored by AICTE & ISTE on "RECENT DEVELOPMENTS IN AI and ROBOTICS ". Principal of BFCET, Dr Manish Goyal welcomed guests in FDP. Followed by Programme coordinator, Dr Tejinder Pal Singh Sarao who thanked and gave information about the programme. Our first guest of honor, **Prof Vijay D. Vaidya, Executive Secretary, ISTE** congratulated BFCET team for getting selected to organize FDP after tough completion between institutions. Our second guest of honor, **Dr PK Khosla, Director, C-DAC Mohali** also congratulated team BFCET and shared his views on recent trends in artificial intelligence. **Key note speaker, Dr.Valentina E. Balas, Professor, University of Arad Romania** shared need and importance of AI & Robotics and how companies are looking for digital transformation and even quoted few examples of the same. She congratulated BFCET for organizing FDP and wished good luck and success. Chief guest in inaugural function, **Vice chancellor of MRSPTU, Prof. Buta Singh Sidhu** inaugurated the event and shared his ideas and experiences on recent developments of Artificial intelligent and Robotics. He appreciated the rigorous efforts of management to enhance knowledge of faculty members regarding implementation of AI and Robotics.

After inauguration, Professor Asokan, IIT Madras shared his view on Introduction to Robotics and then updated knowledge of participants about recent trends in Robotics. Further Myths and Facts About Robotics were discussed and it was made clear that there was no threat to Jobs due to robotics. Prof. Ekta Sigla, IIT Ropar delivered her talk on robot kinematics. She discussed about advancements in industry robotics.

On second day of FDP, Prof SS Dhani from NITTTR Chandigarh updated knowledge of participants about Sensors and Actuators in Robotics. He discussed working of actuator and controllers with the help of animations. Dr Parvinder Singh of Central University Punjab, Bathinda



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delivered his talk on “Quantum Robotics”. Expert told that it is an interdisciplinary research area. Expert also shared a documentary video was played on Quantum Computing and Robots and various applications of Quantum Robots were discussed. Prof. BS Pabla, NITTTR Chandigarh, conducted the third session on Artificial Intelligence in Robotics. He mentioned that AI and Robotics both are very powerful areas with wide applications. Expert discussed the importance of AI and Robotics in the current scenario and its uses. He also answered the queries of participants.

On the third day of FDP, Dr. Ashish Singla, addressed the faculty on the Robot Dynamics. Expert discussed the case study of the SCARA Robot, and its validation through MATLAB and at last, he cleared the doubt of the queries raised by faculty. Dr Gaurav, Director of Magma Research and Consultancy Services gave an expert lecture on Machine learning Algorithm and their use in Robotics.

BABA FARID COLLEGE OF ENGINEERING & TECHNOLOGY
Muktsar Road, Bathinda, Punjab (India)

AICTE-ISTE SPONSORED ONE WEEK ONLINE FACULTY DEVELOPMENT PROGRAMME
ON
“RECENT DEVELOPMENTS IN AI & ROBOTICS”
07th - 12th December 2020

DISTINGUISHED GUESTS & SPEAKERS (INAUGURATION CEREMONY)

 Prof. Bala Singh Sidhu Vice-Chancellor, BBAE-TVU Bathinda	 Dr. Valentina E. Sotoc Professor, University of Aired Yorkshire	 Dr. P. K. Khosla Consultant, IIT Roorkee	 Col. B. Venkat Director, Faculty Development Cell, AICTE, New Delhi	 Prof. Vijay D. Vaidya Executive Secretary, ISTE
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DISTINGUISHED SPEAKERS

 Prof. Asokan T IIT Madras	 Prof. Ekta Singla IIT Kharagpur	 Prof. SS Dhama NITTTR Chandigarh	 Prof. Parvinder Singh IIT Roorkee	 Prof. BS Pabla NITTTR Chandigarh
 Prof. Ashish Singla IIT Madras	 Dr. G. Kumar Director, Magma Research and Consultancy Services	 Prof. Sauril V. Shah IIT Bombay	 Prof. A. Kaur IIT Roorkee	 Mr. Abhinav Gupta R & D Head, Teleson Technology Pvt. Ltd.
 Prof. Ashish Dutt IIT Bombay	 Prof. Lalit Mohan Doyal Professor, IIT Roorkee	 Dr. Rohan Chandel Professor, IIT Roorkee		

https://youtu.be/lqZvh_VBh_k

For query :

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Bathinda, Punjab (India)
#StayHome #StaySafe

Brochure of the Faculty Development Programme



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Dr Gaurav started the session describing Arduino and Webcam integration and Image Feature Extraction. Moving forward he mentioned difference between Arduino and raspberry pie. He also mentioned Websites from where Machine learning could be learned. Prof Suril V. Shah, Indian Institute of Technology, Jodhpur delivered talk on “Robot Motion Planning”.

On fourth day, in first session Prof Amandeep Kaur of Central University of Punjab, Bathinda delivered Expert Lecture on topic “Computer Vision and Robotics. She described how in Industry 4.0 computers are connected and communicate with each other to ultimately make decisions without human involvement. She discussed the role of computer vision and robotics in this automated decision making. She also shared future research topics in computer vision and robotics. Dr Gaurav Kumar gave an expert lecture on topic “Platforms for Intelligent Robotic Applications”. Speaker started with different platforms for Intelligent Robotic Applications providing their website links like <https://cyberbotics.com>, <http://gazebosim.org/>, www.ros.org/, <https://www.oroocos.org/>,

<https://www.yarp.it/>, <https://www.mrpt.org/>,

<https://www.robotarium.gatech.edu>. The third session was conducted by Abhishek Gupta, R&D Head- Tevatron Technologies Pvt. Ltd. on the Topic of challenges and opportunities for AI & Robotics startups. Expert updated participants about challenges such as Data security and privacy, and he explained the opportunities such as Real-time environment data capture, understanding, and error reduction, intelligent procurement of materials, delivery management etc.

On fifth day of FDP Prof Ashish Dutta delivered his expert talk on “Biped Locomotion”. He shared about legged locomotion and wheel motion through practical examples. He discussed legged structure of animals like mammal, lizard, reptile. He said very high trajectory tracking precision is generally required in order to perform balancing and achieve sufficiently high motion speeds. In next session, Dr. Ashish Singla, shared his views about the control aspects of Robotic Manipulators. He shared about the basis of control system and multifaceted applications of the control system in which he shared about the redundant manipulator, flexible manipulator and under actuated system. In third session, Prof. Ekta Singla, IIT Ropar discussed about “AI and Robotics in Industry 4.0”. She talked about SAMARTH UDYOG- BHARAT 4.0. It is an Industry

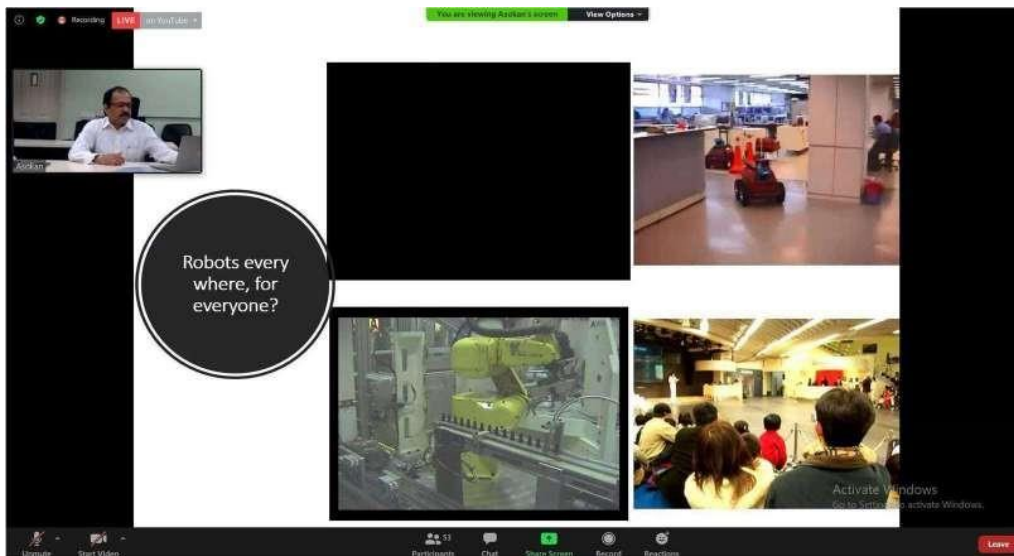
4.0 initiative of Government of India under its scheme on Enhancement of Competitiveness in Indian Capital Goods Sector. Further she discussed how we are connected with AI in concern to different domains. Then she discussed the connection of Robotics to Industry 4.0 and its future trends. In the end she discussed the importance of Industry 4.0 and also shared the case study related to AI and



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Robotics.

On last sixth day of FDP, Prof. Lalit Mohan delivered his expert lecture on “AI in Smart Cities”. He described that a smart machine is a device embedded with machine-to-machine and/or cognitive computing technologies. Prof. Goyal discussed that there are various types of Technical and non-technical Hurdles in smart cities. All basics of AI in Smart Cities was thoroughly covered. At the end of Session future research topics were discussed. Dr. Sohan Chandel, Psychologist and Corporate Trainer, Founder NMET Pvt. Ltd. delivered talk on “Emotional Wellbeing”. He illustrated the importance of emotional wellbeing in individual’s life especially in this era of social platforms. Dr. Sohan has imparted training to improve the Communication, Interpersonal, Teambuilding and Leadership skills of the employees of, 40+ national and multinational and Govt. organizations, for more than 6000 hrs, in last 11 years, with an excellent feedback and improvement in trainee’s personal and professional life. In last session of FDP, Online quiz was conducted and feedback was taken followed by Valedictory session which was concluded by sharing a brief report about FDP by Coordinator of Program, Dr Tejinderpal Singh Sarao. Dr Manish Goyal, Principal Baba Farid College of Engineering & Technology congratulated all the participant’s and organizers of the event.





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Recording LIVE on YouTube

WHAT APPLICATIONS ROBOTS ARE IN USE TODAY?



Major Areas with robotic assistance ...



Industry



Warehouse

Activate Windows
Go to Settings to activate Windows.

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Glimpses of the Faculty Development Programme on 7th - 12th Dec 2020