Report

One-week Short Term Course on "Recent Industrial Trends in Control and Optimization" (RICO-2024) (Self-Sponsored & Virtual Mode) 05-09 June 2024

The One-week Short Term Course on "Recent Industrial Trends in Control and Optimization" (RICO-2024) was inaugurated on June 05, 2024. This event is organized by the Instrumentation and Control Engineering Department. Dr. Mahendra Kumar initiated the STC program by welcoming the guests & participants and introduced the Chief Patron, Patron, Co-Patron, General Chair, Organizing Chair, Conveners and Coordinators.

Hon'ble Worthy Director Prof. Binod Kumar Kanaujia, NIT Jalandhar blessed the RICO 2024 STC course.

Prof. K. S. Nagla, Head of the Department of Instrumentation and Control Engineering, highlighted the achievements of the Department and welcomed the audience.

The course was coordinated by Dr. Anil Kumar Yadav, Dr. Mahendra Kumar, Dr. Richa Sharma and Dr. Deblina Biswas.

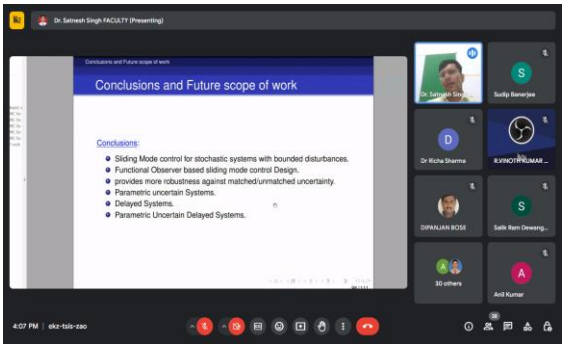
Dr. Mahendra Kumar highlighted the course objective and importance to the audience.

Total number of Participants: 72 (National and International (**UAE**)) from different-2 background such as, PG, PhD, Faculty members at various level, and Industry persons.

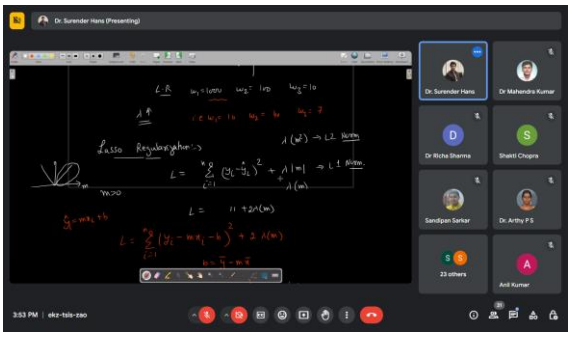
The expert's from various reputed national and international Institutions, Prof. Manohar Singh, PEC Chandigarh; Mr. Jagannath Samantaray, Senior Engineer, MaathWorks; Prof. S. K. Jha, NSUT, New Delhi; Dr. Pushkar Prakash Arya , NIT Trichy; Dr. Satnesh Singh, MNNIT Prayagraj; Dr. Surender Hans, MNIT Jaipur; Dr. Nalin Kumar Sharma, IIT Jammu; Dr. Amlan Basu, University of Strathclyde, UK; Dr. Sambaraju Chiluveru, IIT Dharwad; Dr. Anirudh, IIEST Shibpur, were delivered the experts talks on different-2 aspects of "Recent Industrial Trends in Control and Optimization", during 05-09 June 2024.

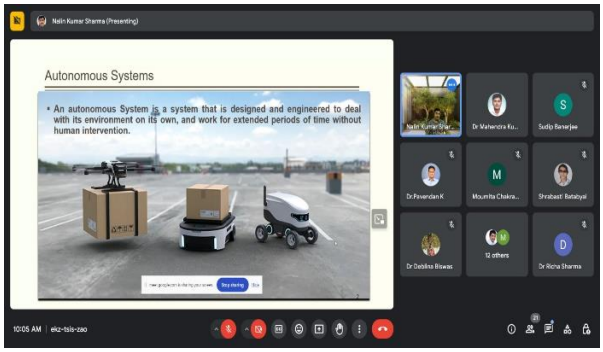
On the last day, during the valedictory program, Participants were given suggestions and feedback about the program, and they were very interested in the upcoming version of this event. Finally, Dr Anil Kumar Yadav delivered the vote of thanks.

Dr. Manohar Singh (Presenting)

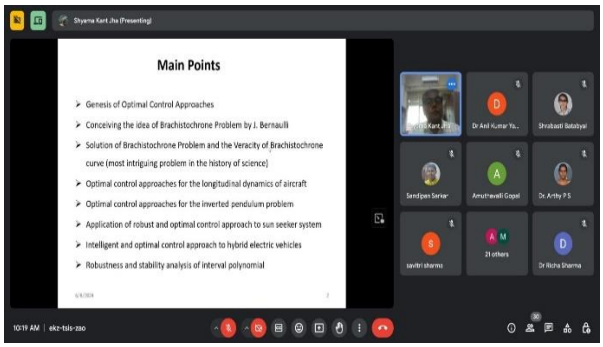

Dr. Satnesh Singh FACULTY (Presenting)
Conclusions and Future scope of work
Conclusions:
Sliding Mode control for stochastic systems with bounded disturbances.
Functional Observer based sliding mode control Design.
provides more robustness against matched/unmatched uncertainty.
Parametric uncertain Systems.
Delayed Systems.
Parametric Uncertain Delayed Systems.

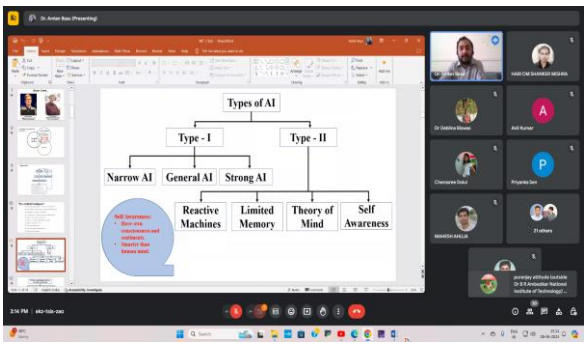
Samba Raju Chiluveru (Presenting)
Machine Learning
Prof. Samba Raju Chiluveru
Key Concepts in Machine Learning
Algorithms: Procedures or formulas for solving problems, the backbone of ML.
Models: Trained using algorithms to make predictions or decisions.
Training Data: Historical data used to train models.
Predictions: Outputs from models used to make decisions.
भारतीय प्रौद्योगिकी संस्थान धारवाड Indian Institute of Technology Dharwad

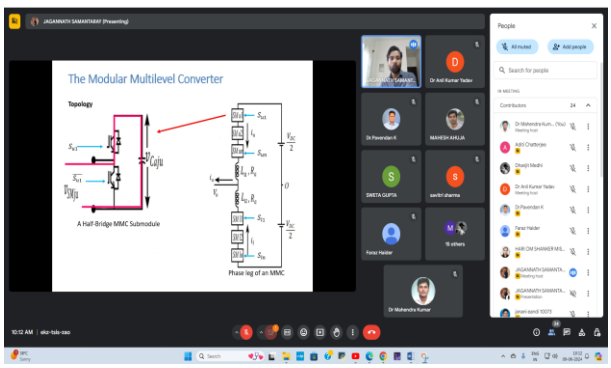

Dr. Surender Hans (Presenting)

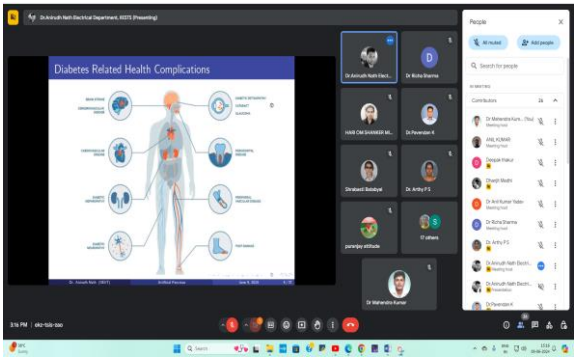

Nalin Kumar Sharma (Presenting)
Autonomous Systems
An autonomous System is a system that is designed and engineered to deal with its environment on its own, and work for extended periods of time without human intervention.

Introduction to IMC (contd.)


Shyama Kant Jha (Presenting)
Main Points
Genesis of Optimal Control Approaches
Conceiving the idea of Brachistochrone Problem by J. Bernaulli
Solution of Brachistochrone Problem and the Veracity of Brachistochrone curve (most intriguing problem in the history of science)
Optimal control approaches for the longitudinal dynamics of aircraft
Optimal control approaches for the inverted pendulum problem
Application of robust and optimal control approach to sun seeker system
Intelligent and optimal control approach to hybrid electric vehicles
Robustness and stability analysis of interval polynomial


Types of AI
Type - I
Type - II
Narrow AI
General AI
Strong AI
Reactive Machines
Limited Memory
Theory of Mind
Self Awareness


The Modular Multilevel Converter
Topology
A Half-Bridge MMC Submodule
Phase leg of an MMC


Diabetes Related Health Complications