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Departmental Seminar

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Seminar Title : A Machine Learning Approach with Decision Tree-based Signal Detection for MIMO-NOMA Systems.  
Speaker : Bibekananda Panda  
Supervisor : Prof Poonam Singh  
Venue : EC303, Seminar Room  
Date and Time : 07 May 2024 (10.30AM)  
Abstract : In future generation (5G) wireless networks, non-orthogonal multiple access (NOMA) stands out for its exceptional spectrum efficiency, providing a key resolution for higher connectivity demands. A novel signal detection method employing decision tree techniques is discussed in downlink multiple input and multiple output (MIMO) with the NOMA system. Simulation results for both Rayleigh and Rician fading channels in a multi-user downlink NOMA system exhibit the viability of the proposed approach. Effective resource sharing with users based on various quality of service is made possible by the power domain NOMA, which shows enormous potential in 5G networks. Combining NOMA and MIMO technologies resolves the drawbacks of standard successive interference cancellation (SIC) complexity and latency, and also improves spectral efficiency with system capacity. A decision tree-based technique enhances reliability and efficiency in multi-user scenarios for detecting signals in downlink MIMO-NOMA systems.