TECHNICAL CLUB: SIGNAL PROCESSING

CORE DISCIPLINE: ELECTRONICS & COMMUNICATION ENGINEERING

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TECHNICAL BACKGROUND AND UTILITY OF THE CLUB

SIGNAL PROCESSING IS AN AREA, FINDING APPLICATION IN THE FIELD OF COMMUNICATION SYSTEMS , SYSTEMS ENGINEERING, ELECTRICAL ENGINEERING AND APPLIED MATHEMATICS THAT DEALS WITH OPERATIONS OR ANALYSIS OF ANALOG AS WELL AS DIGITIZED SIGNALS. SIGNALS OF INTEREST CAN INCLUDE SOUND, ELECTROMAGNETIC RADIATION, IMAGES, AND SENSOR READINGS, FOR EXAMPLE BIOLOGICAL MEASUREMENTS SUCH AS ELECTROCARDIOGRAMS, CONTROL SYSTEM SIGNALS, TELECOMMUNICATION TRANSMISSION SIGNALS, AND MANY OTHERS. THE GOALS OF SIGNAL PROCESSING CAN ROUGHLY BE DIVIDED INTO THE FOLLOWING CATEGORIES:

- SIGNAL ACQUISITION AND RECONSTRUCTION, WHICH INVOLVES MEASURING A PHYSICAL SIGNAL, STORING IT, AND POSSIBLY LATER REBUILDING THE ORIGINAL SIGNAL OR AN APPROXIMATION THEREOF. FOR DIGITAL SYSTEMS, THIS TYPICALLY INCLUDES SAMPLING AND QUANTISATION.

- QUALITY IMPROVEMENT, SUCH AS NOISE REDUCTION, IMAGE ENHANCEMENT, AND ECHO CANCELLATION.

- SIGNAL COMPRESSION (SOURCE CODING), INCLUDING AUDIO COMPRESSION, IMAGE COMPRESSION, VIDEO COMPRESSION AND SIGNAL ENCRYPTION.

- FEATURE EXTRACTION, SUCH AS IMAGE UNDERSTANDING AND SPEECH RECOGNITION.

THE ASSOCIATION WITH THIS CLUB WILL CREATE INTEREST OF STUDENTS IN THIS TECHNOLOGICAL DOMAIN AND INSPIRE THEIR CREATIVITY TO INNOVATE THROUGH PRACTICAL LEARNING AND APPLICATION ORIENTED MINDSET. UNDOUBTEDLY, THIS IS THE ASPECT MAINLY SEEN IN THE ENGINEERING PROFESSION AND THUS DEFINITELY BOOSTS THE CAREER PROSPECTS AND EMPLOYABILITY. WITH COMPETENCE IN THIS DOMAIN, STUDENTS COULD POSITIVELY LOOK FOR EXCITING
CAREER IN IT AND TELECOM INDUSTRIES, INSTRUMENTATION INDUSTRIES, PREMIER RESEARCH ORGANIZATIONS LIKE: ISRO, DRDO, ETC.

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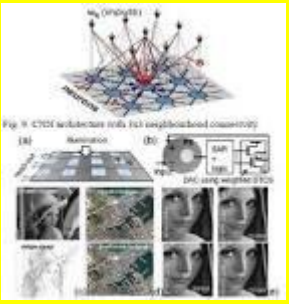
ACTIVITIES TO BE CONSIDERED UNDER THE CLUB:

THE ACTIVITIES OF THE CLUB HAVE BEEN WELL FORMULATED TO DEVELOP INTEREST AND COMPETENCE OF THE STUDENTS IN THE RELATED TECHNOLOGIES WITH EMPHASIS ON APPLICATION ASPECTS OF THE CONCEPTS. FOLLOWING ACTIVITIES HAVE BEEN CONSIDERED:

- LEARNING THROUGH TECHNICAL MAGAZINES AND JOURNALS
- DESIGN AND PRACTICAL MODELING OF RELEVANT CIRCUITS USING DSP PROCESSORS.
- SOFTWARE SIMULATION OF THE DESIGN AND ITS PERFORMANCE EVALUATION
- PAPER WRITING AND PRESENTATION
- QUIZ AND GROUP DISCUSSIONS ON THE CLUB THEME RELATED TOPICS
- CONDUCTION OF WORKSHOPS AND PRACTICAL TRAINING SESSIONS
- INTERACTION WITH EMINENT INDUSTRIAL AND ACADEMIC EXPERTS IN THE DOMAIN OF CLUB THEME
- INDUSTRIAL AND INSTITUTIONAL TOURS
- CONSIDERING INDUSTRIAL R&D PROJECTS IN THE DOMAIN OF THE CLUB THEME



SOME IMAGES OF TECHNOLOGICAL DEVELOPMENT IN THE CLUBS DOMAIN