Centre for Signal Processing

1. Bio- Signal Processing Program
   To Develop signal processing techniques for biomedical applications.
   Our research interests include three areas:
   - Bioinformatics
   - Medical imaging
   - Bio-sensors and systems

2. DSP System Development Program
   Development of select real-time signal processing system and processing cores. Current R&D activities include:
   - Intelligent Room (i Room)
   - Real-time multi-channel Display Processor
   - Wearable Reconfigurable Media Processing Engine
   - Embedded CMOS Video Enhancer
   - Human Thermogram Analysis

3. Multimedia Signal Processing Program
   Development of signal processing techniques for multimedia applications. Current R&D includes:
   - Intelligent Video Surveillance
   - Human Activity/Behavior Analysis
   - Digital Video Coding, Streaming and Retrieval
   - Object Tracking and Surveillance
   - Perception/content-Based Analysis for Video Coding and Indexing
   - Perceptual Image Evaluation
   - Super-Resolution Imaging using Time Reversal

4. Statistical and Adaptive Signal Processing Program
   To conduct research and development work in the specific areas of DSP technology related to adaptive and statistical signal processing:
   - Acoustic Sensor Network
   - Spreading Sequences for CDMA Systems
   - Beamforming for Mobile Communications
   - Microphone Array for Smart e-Textile Uniform
   - Robust Object tracking using Particle Filters
   - Space time signal processing using sensor array
   - Smart Audio Surveillance using Large Microphone Array
   - Audio and Visual Signal Enhancement and Understanding
   - Applications of a New Class of Complex Hardamard Sequence
   - Spectral Techniques: Principles and Applications in Multi-Valued Logic
   - Advanced Detection & Localization Algorithms for a Randomly Distributed
   - Beamforming and Speech Recognition for In-Vehicle Applications
   - Developing a Maritime Piracy Detection System using a Microwave Radar Sensor

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