

CHAPTER 57  
TECHNOLOGY  
ELECTRONICS & COMMUNICATION  
ENGINEERING

Doctoral Theses

686. GUPTA (Rashmi)  
**Designing a Global Framework for Non-Linear Dimensionality Reduction.**  
Supervisor : Prof. Rajiv Kapoor  
Th 20950

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1. Introduction 2. Linear dimensionality reduction techniques and their extension 3. Spatial distance preservation based techniques 4. Graph based techniques and their extensions 5. Extensions of local non-linear techniques 6. Non-linear dimensionality reduction using fuzzy lattices 7. Fuzzy lattice based technique for classification of PQ events 8. Data compression using statistically matched wavelet 9. Morphmap for non-linear dimensionality reduction 10. Conclusions and scope of future research. References. List of Publications of PHD work.

687. YADAV (Richa)  
**Design of Fractional Order Differentiators and Intergrators.**  
Supervisor : Prof. Maneesha Gupta  
Th 21291

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1. Introduction 2. Design methods of interger and frational order diffintegrators: A brief overview 3. Discretized fractional models based on different rational approximations 4. Novel technique of linear interpolation in fractional domain 5. Optimization of integer order operators by proposed MPSO algorithm 6. Improved fractinoal models based on optimized differentiators and intergrators 7. Optimization of fractional order operators by proposed mpso algorithm 8. Conclusions and suggestions for further work. References, list of publications and appendix.