

Mother Teresa Women's University, Kodaikanal

Ph.D Course Work- Common Paper

ADVANCED TECHNIQUES IN COMPUTER SCIENCE

UNIT - I DIGITAL IMAGE PROCESSING

Image Transformation & Filters - Combining Spatial Enhancement methods - Fuzzy techniques for Intensity Transformation and Spatial Filtering - Sampling and Fourier Transformation - Discrete Fourier Transform (DFT) - Smoothing and Sharpening- Morphological Image Processing - Object Recognition.

UNIT- II DATA MINING AND DATA WAREHOUSING

Data Mining Techniques- Different forms of KDD – Association Rule – Classification Methods- Clustering Techniques – Neural Networks- Data Warehouse Architecture- OLAP operations- Data Warehouse Technology.

UNIT – V DISTRIBUTED COMPUTING

Distributed Systems: Fully distributed processing systems – Networks and Interconnection structures – Designing a distributed processing system – Distributed databases- challenge of distributed data – loading factors – managing the distributed resources – division of responsibilities.

UNIT – IV ARTIFICIAL NEURAL NETWORKS

Perceptron – Back Propagation Network – Statistical Methods – Bi-Directional Associative Memory – Recurrent Networks – Adaptive Resonance Characteristics- Optical Neural Networks

UNIT V NETWORK SECURITY

Circuit Switching Network – Routing Algorithms- Packet Switching Network- ATM Networks & Routing- Security – DES- AES – RSA – Digital Signature and Authentication Protocols- Network Security- Authentication Applications

Unit – V(a).

Plagiarism – Definition – History of Plagiarism – Key to avoid Plagiarism – Different forms of Plagiarism – Intentional – Unintentional – Non – Attribution – accidental – Common Plagiarism Problems – Six ways to avoid plagiarism in Research Report – Paraphrase – cite – Quoting – Citing Quotes – Citing one's own material – Referencing – Plagiarism checker services – Softwares – write check – VAIIL Tutor Tool – Plagiarism Test – Pen and Paper plagiarism Knowledge Test – etc. UGC Public notice dated 01.09.2017

REFERENCE BOOKS:

1. Philip D. Wassermann "Neural Computing: Theory and Practice", Van Nostrand Reinhold.
2. James A. Freeman and David M. Skapura, "Neural networks : Algorithms Applications and programming Techniques", Addison -Wesley publishing company.
3. C.Siva Ram Murthy, B.S. Manoj, "Adhoc Wireless Networks", Pearson, 2005.
4. William Stallings, "High Speed Networks and Internets", Pearson, 2010.

5. Arun K Pujari , “Data Mining Techniques”, University press , Edition 2001.
6. C S R Prabhu, “Data Warehousing – concepts, techniques and applications “, 2nd Edition, Prentice Hall of India, 2002.
7. Rafael C. Gonzalez, Richard E. Woods, “Digital Image Processing”, 3rd Edition, Pearson Education, 2008.
8. John A. Sharp, “An Introduction to Distributed and Parallel Processing”, Blackwell Scientific Publications, 1987.
9. Uyles D. Black, “Data Communications & Distributed Networks”, Prentice Hall, 1997.

