M. Tech. (Computer Science and Engineering)

The details of experiential learning are described in this document. Kindly refer to the respective pages as shown in the tables below for the courses offered in various academic sessions.

Year 2018-2019

Course Title	Year of offering	Name of Students	Page no
Dissertation	2019	All The 4th semester Students	6

Year 2017-2018

Course Title	Year of offering	Name of Students	Page no
Data Warehousing and Data Mining	2017	Shreya Aggarwal	9
Wireless Networks & Mobile Comp.	2017	Shreya Aggarwal	4
Dissertation	2018	All the 4th Semester Students	6

Year 2016-2017

Course Title	Year of offering	Name of Students	Page no
Data Warehousing and Data Mining	2016	Navneet Kaur	9
Digital Image Processing	2017	Navneet Kaur	11
Dissertation	2017	All the 4the semester Students	6

Year 2015-2016

Course Title	Year of offering	Name of Students	Page no
Digital Image Processing	2016	SumatiVij	11
Genetic Algorithms	2015	Pooja Kadian	2
Dissertation	2016	All the 4th semester Students	6

Year 2014-2015

Course Title	Year of offering	Name of Students	Page no
Data Warehousing and Data Mining	2014	Reshu Goel	9
Genetic Algorithms	2014	Juhi Gupta	2
Wireless Networks & Mobile Comp.	2014	Swati Rani	4
Dissertation	2015	All the 4th semester Students	6

GENETIC ALGORITHMS (MT-CSE-14-33(iii)):

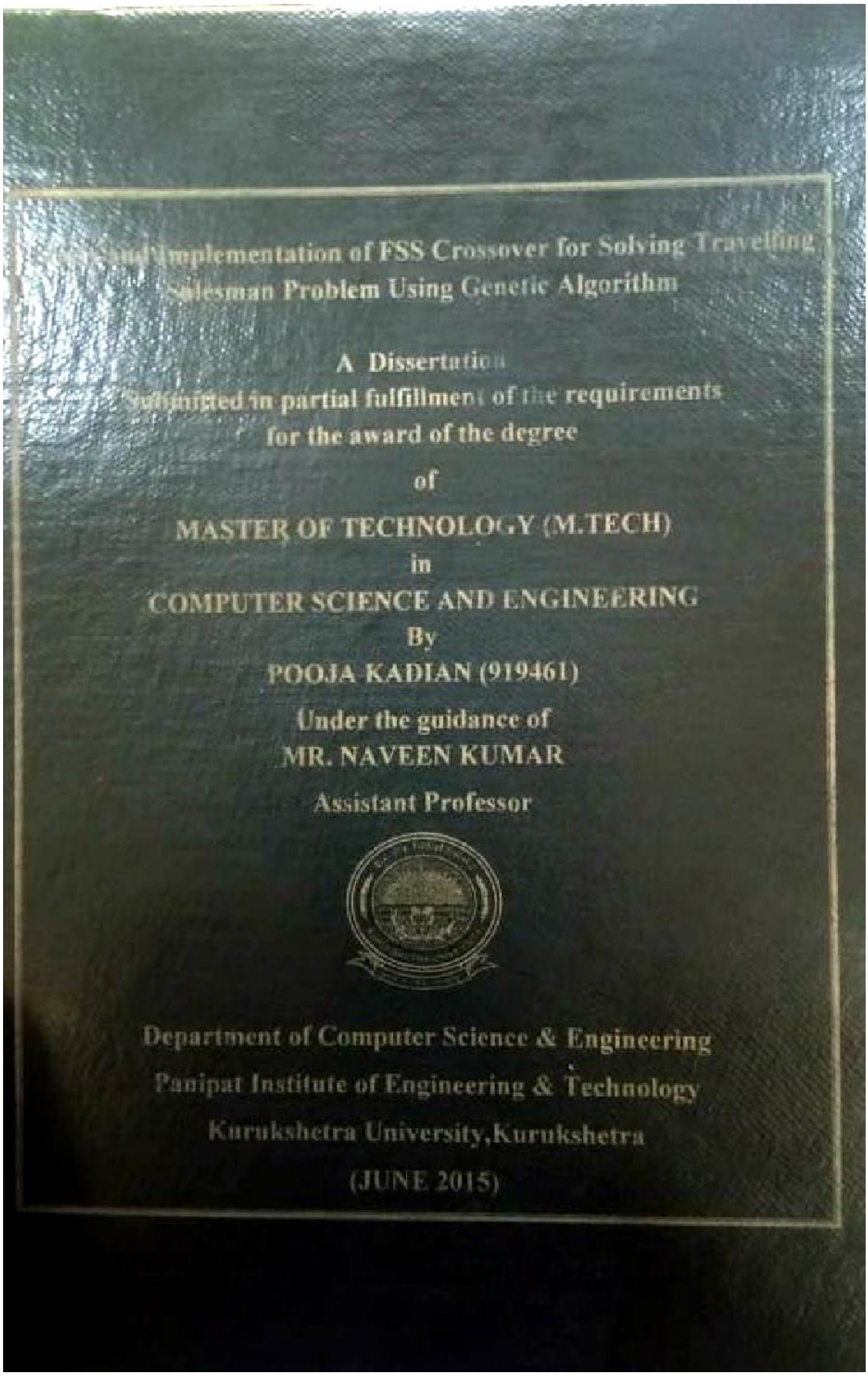
Genetic algorithms are heuristic search methods used in artificial intelligence and computing. They are used to find optimized solutions to search problems based on the theory of natural selection and evolutionary biology. The technique of Genetic Algorithms is an evolutionary computing approach which is recurrently used in different areas of Computer Science. These algorithms are stochastic techniques that stipulate good-quality solution with low time complexity. These algorithms are effectively used to solve the different research problems viz. query optimization, task scheduling, data mining, part of speech tagger, phrase chunker, image segmentation, inventory management etc. They are commonly used to generate high-quality solutions for optimization problems and search problems. These algorithms are excellent for searching through large and complex data sets.

The students of PIET use these algorithms to complete their research work. Some of the work can be listed as Cost Based Multi- QoS Scheduling Algorithm using Genetic Approach, Genetic Programming and K-Nearest Neighbor Classifier based Intrusion Detection etc.

ExperientialActivity: Project Development

S.no	Dissertation Title	Year	Student Name
1	Design & Implementation of FSS Crossover for Solving Travelling Salesman Problem using Genetic Algorithm	2015-2016	Pooja Kadian
2	BPSO Optimized K-means clustering approach for Data Analysis	2014-2015	Juhi Gupta

Sample Dissertation Title "**Design & Implementation of FSS Crossover for Solving Travelling Salesman Problem using Genetic Algorithm**" is attached below


and Implementation of FSS Crossover for Solving Travelling
Salesman Problem Using Genetic Algorithm
A Dissertation
submitted in partial fulfillment of the requirements
for the award of the degree
of
MASTER OF TECHNOLOGY (M.TECH)
in
COMPUTER SCIENCE AND ENGINEERING
By
POOJA KADIAN (919461)
Under the guidance of
MR. NAVEEN KUMAR
Assistant Professor
Department of Computer Science & Engineering
Panipat Institute of Engineering & Technology
Kurukshetra University,Kurukshetra
(JUNE 2015)

WIRELES NETWORKS AND MOBILE COMPUTING (MT-CSE-14-34(ii):

Mobile phones have emerged as truly pervasive and affordable Information and Communication Technology (ICT) platform. Large penetration of cellular networks and availability of advanced hardware platforms have inspired multiple opportunities in the domain of mobile computing. In this course, both the theoretical and practical aspects required to design and build applications for mobile-based services are covered. It focuses on developing hands-on skills pertaining to the latest and most popular platforms, e.g. Symbian, Android, Maemo, Windows Mobile, etc. Various wireless technologies, such as Bluetooth, WiFi, GPRS, EDGE, 3G, LTE, 4G, etc are discussed with the students.

Students are trained not only to use existing mobile platforms but also to build new ones. Some of the research projects designed by students can be listed as An Efficient Best Fit Channel Switching (BFCS) Scheme for Cognitive Radio Networks, Routing Protocol (OBCRP) for Cognitive Radio Ad Hoc Networks on Optimal Back up Channel.

Experiential Activity: Project Development

S.no	Dissertation Title	Year	Student Name
1	Enhanced Ad-Hoc on Demanding Multipath Distance vector Routing Protocol for Internet of Things	2017-2018	Shreya Aggarwal
2	BPSO Optimized K-means clustering approach for Data Analysis	2014-2015	Swati Gupta

Sample Dissertation Title "**Enhanced Ad-Hoc on Demanding Multipath Distance vector Routing Protocol for Internet of Things**" is attached below.

ENHANCED AD-HOC ON-DEMANDING MULTIPATH DISTANCE VECTOR ROUTING PROTOCOL FOR INTERNET OF THINGS

A Dissertation

Submitted in partial fulfilment of the requirements

For the award of the degree

Of

MASTER OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

Submitted By

Shreya Aggarwal (1270652)

Under the guidance of

Deepak Kumar

Assistant Professor(CSE)

Department of Computer Science & Engineering

Panipat Institute of Engineering & Technology, Samalkha

DISSERTATION (MT-CSE-14-41):

A dissertation is a written document that summarizes the research work of student; this work represents the scholar's research and findings. Computer science dissertation can be implemented by a number of tools such as Java, Matlab, Image Processing, Soft Computing, High Performance Network, Machine Learning, Cloud Computing, Software Engineering, Network Security etc. The dissertation is supervised by faculty member and assessed by external examiner. The evaluation criteria usually includes the complete implementation of the proposed research work and the dissertation report submitted including research gap, research objective, literature survey, tools used, design, development, analysis, results and future implementation.

Some of the dissertation submitted by students can be listed as Multi Level Security Mechanism for Hiding Digital Data using Hybrid approach of Audio Steganography and Cryptography, A Priority Based Workflow Management in Grid Computing System, Machine Learning as Intelligent tool for Churn Prediction in Telecommunication Industry, ANT-LOAD: A Proficient Meta heuristic Load Balancing in Cloud System, etc.

SCHEME OF EXAMINATION FOR M.TECH. (COMPUTER SCIENCE & ENGINEERING) w.e.f. Academic Session 2014-15							
Paper Code	**Nomenclature of Paper**	**Exam Time (hrs.)**	**External Marks**		**Internal Marks**		**Total Marks**
			Max	**Pass**	**Max**	**Pass**	
FIRST SEMESTER							
MT-CSE-14-11	ADVANCES IN ALGORITHMS	3	100	40	50	20	150
MT-CSE-14-12	ADVANCED WEB TECHNOLOGIES	3	100	40	50	20	150
MT-CSE-14-13	DATA WAREHOUSING & DATA MINING	3	100	40	50	20	150
MT-CSE-14-14	ADVANCED COMPUTER ARCHITECTURE	3	100	40	50	20	150
MT-CSE-14-15	S/W LAB – I BASED ON MT-CSE-14-11	3	100	40			100
MT-CSE-14-16	S/W LAB – II BASED ON MT-CSE-14-12	3	100	40			100
MT-CSE-14-17	SEMINAR				50	20	50
	TOTAL		**600**		**250**		**850**
SECOND SEMESTER							
MT-CSE-14-21	OBJECT ORIENTED ANALYSIS & DESIGN USING UML	3	100	40	50	20	150
MT-CSE-14-22	DIGITAL IMAGE PROCESSING	3	100	40	50	20	150
MT-CSE-14-23	ELECTIVE - I	3	100	40	50	20	150
MT-CSE-14-24	ELECTIVE - II	3	100	40	50	20	150
MT-CSE-14-25	S/W LAB – III BASED ON MT-CSE-14-21	3	100	40			100
MT-CSE-14-26	S/W LAB – IV BASED ON MT-CSE-14-22	3	100	40			100
MT-CSE-14-27	SEMINAR				50	20	50
	TOTAL		**600**		**250**		**850**

ELECTIVE PAPERS	
MT-CSE-14- 23(i) SOFTWARE QUALITY MODELS & TESTING	MT-CSE-14-24(i) DISTRIBUTED SYSTEMS
MT-CSE-14-23(ii) HIGH PERFORMANCE NETWORKS	MT-CSE-14-24(ii) BIOMETRICS SYSTEM SECURITY
MT-CSE-14-23(iii) ADVANCES IN DATABASES	MT-CSE-14-24(iii) SECURITY IN COMPUTING

THIRD SEMESTER							
MT-CSE-14-31	RESEARCH METHODOLOGY & TOOLS	3	100	40	50	20	150
MT-CSE-14-32	ADVANCED OPERATING SYSTEMS	3	100	40	50	20	150
MT-CSE-14-33	ELECTIVE – I	3	100	40	50	20	150
MT-CSE-14-34	ELECTIVE - II	3	100	40	50	20	150
MT-CSE-14-35	S/W LAB – V BASED ON MT-CSE-14-31	3	100	40			100
MT-CSE-14-36	S/W LAB – VI BASED ON MT-CSE-14-32	3	100	40			100
MT-CSE-14-37	SEMINAR				50	20	50
	TOTAL		**600**		**250**		**850**

ELECTIVE PAPERS	
MT-CSE-14-33(i) DATA ANALYTICS	MT-CSE-14-34(i) CLOUD COMPUTING
MT-CSE-14-33(ii) SOFT COMPUTING	MT-CSE-14-34(ii) WIRELESS NETWORKS AND MOBILE COMPUTING
MT-CSE-14-33(iii) GENETIC ALGORITHMS	MT-CSE-14-34(iii) SEMANTIC WEB AND SOCIAL NETWORKING

FOURTH SEMESTER							
MT-CSE-14-41	DISSERTATION	EVALUATION	200	80	100	40	300
		VIVA-VOCE	150	60			150
TOTAL			**350**		**100**		**450**
GRAND TOTAL			**2150**		**850**		**3000**

Experiential Activity: Project Development

Sample Dissertation Title "**Design & Performance of Advanced Steganography System using RGB**" is attached next.

DESIGNING AND PERFORMANCE OF ADVANCED STEGANOGRAPHY SYSTEM USING RGB

A dissertation

Submitted in the partial fulfillment of the requirement

for the award of degree of

Master of Technology (M.Tech)

in

Computer Science & Engineering(Session:2013-2015)

By

SHEFALI NARANG (919459)

Under the guidance of

Mr. Ashish Shrivastava

Assistant Professor

Department of Computer Science & Engineering

Panipat Institute of Engineering & Technology,

Approved by AICTE, Affiliated to Kurukshetra University

DATA WAREHOUSING AND DATA MINING (MT-CSE-14-13):

Data warehouse refers to the process of compiling and organizing data into one common database and Data Mining refers to the process of extracting useful data from the databases. DWDM is created to support management systems. It is an increasingly important business intelligence tool, allowing organizations to standardize data from different sources which reduces the risk of error in interpretation, improves overall accuracy and make better business decisions. The process of Data Mining is used by the companies to turn raw data into useful information. It is done by using software to look for patterns in large batches of data, businesses can learn more about their customers to develop more effective marketing strategies, increase sales and decrease costs. A data warehouse (DW) is a collection of corporate information and data derived from operational systems and external data sources. It is designed to support business decisions by allowing data consolidation, analysis and reporting at different aggregate levels.

Data Mining is an important research methodology used by various M.Tech scholars in their research proposals. Some of such proposals can be listed as Sentiment Analysis of Twiter and Facebook using Map Reduce, Amazon Backed File System with Enhanced Storage Feature.

Experiential Activity: Project Development

S.no	Dissertation Title	Year	Student Name
1	Enhanced Ad-Hoc On Demanding Multipath Distance vector Routing Protocol for Internet of Things	2017-2018	Shreya Aggarwal
2	An Efficient Data Locality System for Big Data Processing Over Distributed Data Centre by using Scheduling Technique	2016-2017	Navneet Kaur
3	Cloud Adoption : Critical Success Factors	2014-2015	Reshu Goel

Sample Dissertation Title "**Enhanced Ad-Hoc on Demanding Multipath Distance vector Routing Protocol for Internet of Things**" is attached next.

ENHANCED AD-HOC ON-DEMANDING MULTIPATH DISTANCE VECTOR ROUTING PROTOCOL FOR INTERNET OF THINGS

A Dissertation

Submitted in partial fulfilment of the requirements

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Of

MASTER OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

Submitted By

Shreya Aggarwal (1270652)

Under the guidance of

Deepak Kumar

Assistant Professor(CSE)

Department of Computer Science & Engineering

Panipat Institute of Engineering & Technology, Samalkha

DIGITAL IMAGE PROCESSING (MT-CSE-14-22):

Image processing is a method to convert image into digital form and perform some operations on it in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image like video frame or photograph and output may be image or characteristics associated with that image. Digital image processing has wider range of algorithms to be applied to the input data and can avoid problems such as the build-up of noise and distortion during processing. Image processing techniques have its application in various areas like Communication, Avionics, Computer Systems, Robotics, Remote Sensing, Industrial Inspection, Medical Imaging, etc. In recent times, there has been a dramatic increase of image and video data in every conceivable field due to the proliferation of digital capture devices and also due to the internet increasingly becoming a multimedia phenomenon. Consequently, the field of Computer Vision and Image Processing has emerged as a promising field of study and research due to its wide spread applications in managing the huge influx of image and video data.

The students of PIET have used various Image Processing techniques in their research work. Some of the research proposals can be listed as Image Compression, CBIR (Content Based Image Retrieval) by cascading features and SVM, GSA-FODPSO-SVM based Feature Selection Algorithm for Hyper Spectral Image Classification.

ExperientialActivity: Project Development

S.no	Dissertation Title	Year	Student Name
1	An Efficient Data Locality System for Big Data Processing Over Distributed Data Centre by using Scheduling Technique	2016-17	Navneet Kaur
2	Image Binarization using Local Image Gradient & TCM	2015-16	Sumati Vij

Sample Dissertation Title "An Efficient Data Locality System for Big Data Processing over Distributed Data Centre by using Scheduling Technique" is attached next.

AN EFFICIENT DATA LOCALITY SYSTEM FOR BIG DATA PROCESSING OVER DISTRIBUTED DATA CENTRE BY USING SCHEDULING TECHNIQUE

A Dissertation

Submitted in partial fulfilment of the requirements

For the award of the degree

Of

MASTER OF TECHNOLOGY

In

COMPUTER SCIENCE AND ENGINEERING

Submitted By

Navneet Kaur (1270649)

Under the guidance of

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Department of Computer Science & Engineering

Panipat Institute of Engineering & Technology

Samalkha