REPORT OF FDP: Computational Mathematics with MATLAB

Report
Faculty Development Program (FDP) Report
Title: : Computational Mathematics with MATLAB
Date: 10-06-2019 to 14-06-2019

Organized by:, BNM Institute of technology
Participant: Mr Bharat Kumar of KSIT,
About the Workshop:
The three-day faculty development program on Computational Mathematics with MATLAB was organised by dein association with Mathworks and CoreEL Technologies Pvt. Ltd. to foster the growth of engineering and scientific skills of the faculty members. MathWorks is the developer of mathematical computing software for Engineers and Scientists. MathWorks is leading worldwide supplier of technical computing software. The business activities are characterized by quality, innovation, and timeliness; competitive awareness; ethical business practices; and outstanding service to the customers. MathWorks actively support local and professional communities through initiatives that advance STEM education, foster staff volunteerism, build environmental sustainability, and aid global relief efforts. CoreEL Technologies is driven by innovation and a multi-disciplinary approach towards technology. CoreEL offer innovative solutions ranging from Intellectual Property (IP) cores, Design and Development, System Design and Prototype Development, Next-Gen Digital products, Integrated solutions,
FDP Outcome: Participants will be familiar with the theory and practical aspects of Computational Mathematics with MATLAB
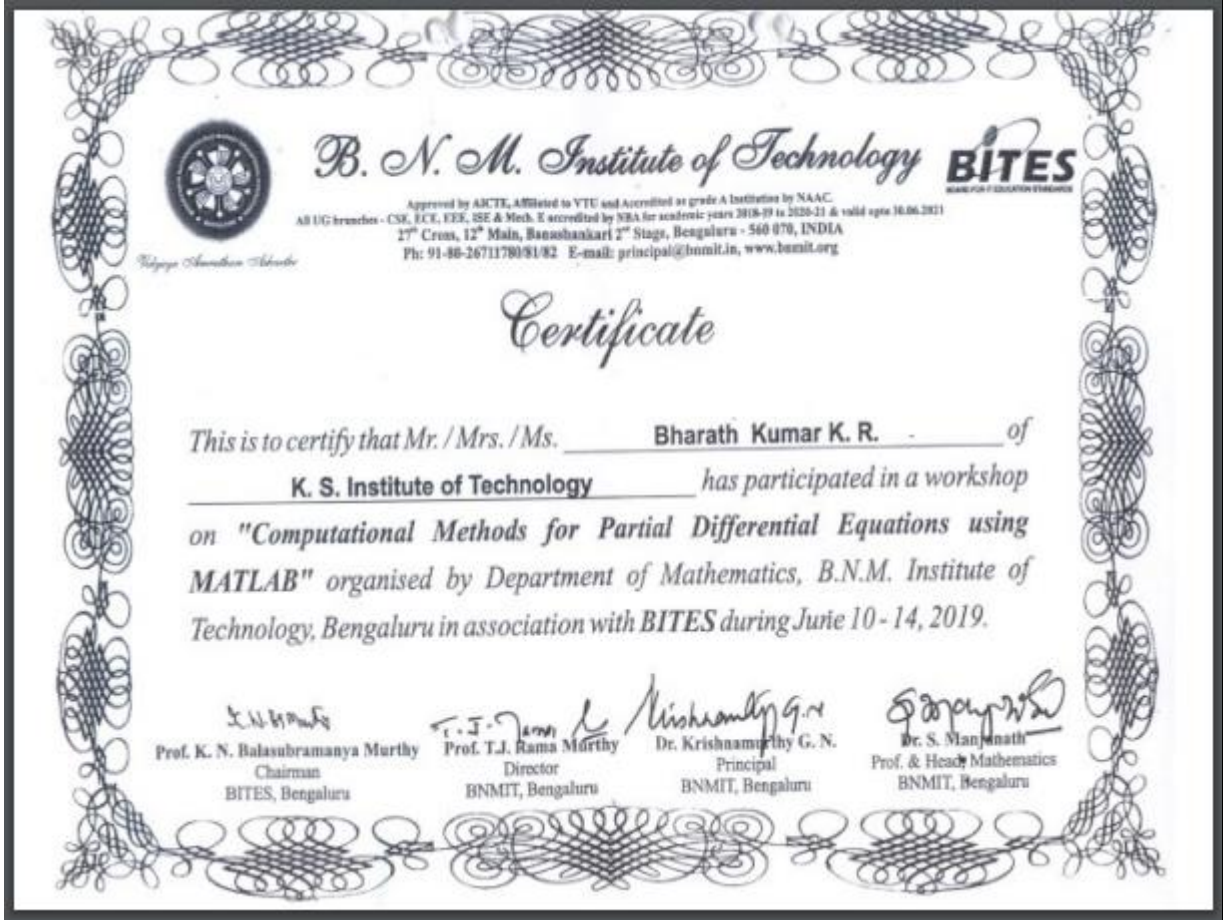
OBJECTIVES OF FDP

To be able to design and apply algorithms to solve problems numerically, algebraically, and graphically. To acquire the skills and confidence to learn new mathematical knowledge as becomes necessary in the course of a lifetime. To build mathematical foundations for success in other disciplines.

SUBMITTED BY:

Mr Bharat Kumar

SIGNATURE OF HOD

SIGNATURE OF PRINCIPAL

K.S.INSTITUTE OF TECHNOLOGY

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-560109

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

FDP REPORT

ON

Machine Learning and Deep Learning with Python Programming

CHIEF PATRON

Dr. Karisiddappa
Hon'ble Vice Chancellor, VTU, Belagavi

PATRONS

Dr. Satish Annagiri
Registrar & Registrar(Evaluation) ,VTU, Belagavi

Mrs.M. A. Sapna
Finance Officer, VTU, Belagavi

CONVENER

Dr. N Chikkanna
Coordinator, VTU-CPGS, Muddenahalli

PROGRAMME COORDINATOR

Dr. Shiva Murthy G
Associate Professor, Dept. of MCA & AIML

PROGRAMME COMMITTEE

Dr. Kanta D. Devanagavi, Asst. Professor, Dept. of MCA
Mrs. Renuka Maige, Asst Professor, Dept. of MCA
Mr. Yadhunaik B H, Asst. Professor, Dept. of MCA

ORGANISING COMMITTEE

Dr. G S Venaktesh , Professor & Prog. Coordinator, Dept. of CAE
Dr. Indumathi T.S, Professor, Dept. of DECS
Dr. Dinesh Rangappa, Professor & Prog. Coordinator, Dept. of NT
Dr. Basavaraj, Associate Professor, Dept. of APT
Dr.Thirtha Prasad H.P, Associate Professor, Dept. of CAE
Dr. Sarika Raga, Assoc. Prof. & Prog. Coordinator, Dept. of DECS
Dr. H.H. Ramesha, Associate Prof., Dept. of MBA.
Dr. Pankajakshi R, Assoc.Prof. & Prog. Coordinator, Dept. of MBA
Dr. Ashwin C. Gowda, Asst. Professor, Dept. of CAE
Dr. Prasanna D .S, Asst. Professor, Dept. of NT
Dr. Lokesh S. V, Asst. Professor, Dept. of NT
Dr. Roopadharshini S, Asst. Professor, Dept. of MBA
Mr. Narayanaswamy G, Asst. Professor, Dept. of CAE
Mr. Sanjeev G Palekar, Asst. Professor, Dept. of APT
Mrs. Reshma M, Asst. Professor, Dept. of DECS
Mr. Purushotham C. J, Asst. Professor, Dept. of MBA
Mr. Lakshminarayana K, Asst. Professor, Dept. of MBA
Mrs. Nivoditha M U, Asst. Professor, Dept. of MBA
Mrs. Veenarani K, Asst. Professor, Dept. of MBA

AICTE-VTU Joint Training Programme
Teachers from AICTE Approved & V
Affiliated Technical Institutions

One Week Training Programme for Teac

On

"Machine Learning and Deep Learnin
With Python Programming"

22nd -26th JULY 2019

Organized By:

VTU- Human Resource Development Cell (HR
Visvesvaraya Technological University
Centre for Post Graduate Studies
Bengaluru Region, Muddenahalli
Chikkaballapur-562101

Venue:

VTU Centre for Post Graduate Studie
Bengaluru Region, Muddenahalli
Chikkaballapur-562101
Seminar Hall

Venue: Online   **Date: 22-07-2019 to 26-07-2019**

    I, **Mr. Prashanth H S, Assistant** Professor, Department of CSE, KSIT, attended a Five Days Faculty Development Programme on **"Machine Learning and Deep Learning with Python Programming"** at AICTE –VTU Joint Training Programme for Teachers

About FDP

- The Machine Learning and Deep Learning with Python Programming FDP provides the knowledge, skills, and confidence to effectively teach and integrate ML and DL concepts into their academic programs. By combining theoretical learning with practical exercises, participants were empowered to explore the vast potential of ML and DL in various domains. Continued support and collaboration among participants will further enrich the learning experience and contribute to advancing the field of artificial intelligence education.
- Enhanced ability to integrate ML and DL techniques into educational curriculum.
- Increased awareness of real-world applications and future trends in ML and DL.

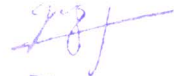Signature of Faculty   HOD   Principal

Head of the Department
Dept. of Computer Science & Engg
K.S. Institute of Technology
Bengaluru -560 109

PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560-109.

AICTE – VTU Joint Training Programme for Teachers
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
VTU HUMAN RESOURCE DEVELOPMENT CELL (VTU - HRDC)
Centre for Post-Graduation Studies Muddenahalli, Chikkaballapur (Dist.) -562101

One Week Training Programme for Teachers
On
"Machine Learning and Deep Learning with Python Programming"
22nd – 26th July 2019

Certificate

This is to certify that Mr. ~~Mrs./Dr./Prof.~~ Prashanth H.S., Asst. Prof. of K.S.I.T. Blore has Participated and Successfully completed One Week AICTE – VTU Joint Training programme for Teachers in "Machine Learning and Deep learning with Python Programming" on 22nd to 26th July 2019 Organised by VTU Human Resource Development Centre (VTU - HRDC), Centre for PG Studies, Muddenahalli, Chikkaballapur (Dist.) 562101

Dr. N. Chikkanna
Convener, Training Programme
VTU, CPGS, Muddenahalli

Dr. Satish Annigeri
Registrar (I/C) & Registrar Evaluation
VTU, Belagavi

K.S.INSTITUTE OF TECHNOLOGY

Report on

Five Days Faculty Development Programme on Machine Learning: Tools and Techniques

17th – 21st December 2018

### JSS ACADEMY OF TECHNICAL EDUCATION, BENGALURU

Audience: Faculty and Research Scholars

Venue: Library Seminar Hall, Department of Computer Science and Engineering, JSS Academy of Technical Education, Bengaluru.

Profile:

JSS Academy of Technical Education (JSSATE) was established in the year 1997 at Bangalore and is under the umbrella of JSS Mahavidyapeetha, Mysore. JSSATE is the result of the vision of our President, His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji to proactively participate in establishing a world class Institution for Technical Education. The Campus is located on a sprawling 21.17 acres land surrounded by lush green plantation on the South-Western edge of Bangalore City. The institution is affiliated to Visvesvaraya Technological University (VTU), Belgaum, India. At present JSSATE, Bangalore has seven Under Graduate and four Post Graduate program in Engineering along with a post Graduate program in Business Administration. All the Departments have been recognized as "research Centres" from VTU, Belagavi. More than 120 candidates are pursuing research programs at JSSATE, Bangalore. The total strength of students is more than 2850 JSSATE, Bangalore has an excellent infrastructure with the state-of-the art equipment and machinery as laboratory facilities. The Institution has spacious classrooms and the laboratories. The whole building is networked and has centralized browsing facility with 120 Mbps dedicated internet facility. The entire college has Wi-Fi facility. Seven departments of the Institute are Accredited by National Board of Accreditation (NBA) for Three years from 2017 to 2020.

The FDP started with Inauguration by Dr.D.S.Guru, University of Mysore, Chief Guest, Prof. Mrityunjaya V. Latte, Principal, JSS ACADEMY OF TECHNICAL EDUCATION, Bengaluru, Dr. Naveen N.C, Professor and HoD, Dr. Prabhudev Jagadeesh, Professor, Dept. of CSE, Convener, Dr.Nagasundara K B Professor, Dept. of CSE, Co-convener of event graced and inaugurated the occasion. A total of 49 participants from various engineering colleges and companies of Karnataka have attended the program.

Valedictory
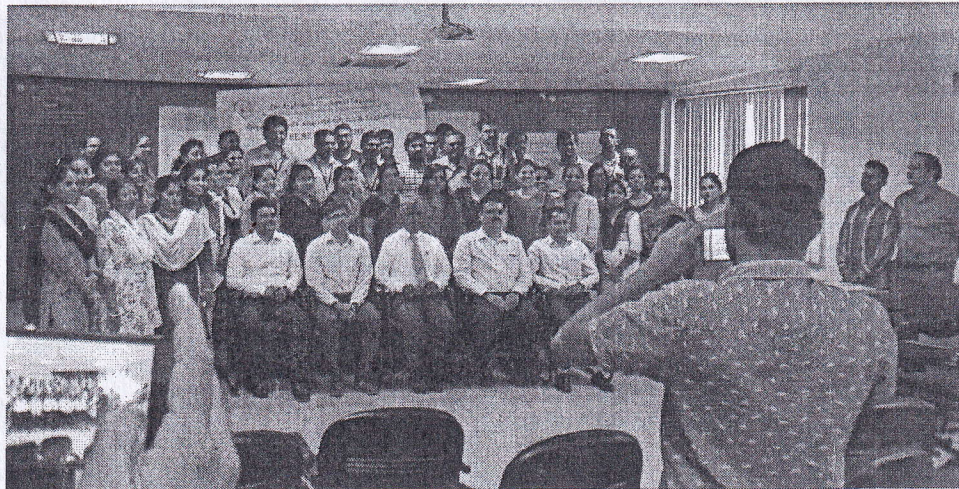
Participants

Outcomes:

- Enabled the participants to learn and conceptualize Machine Learning Algorithms
- Enabled the participants to represent and analyze big data sets.
- Encouraged the participants to do research on Machine Learning.

Dr.B.Surekha

Professor

Dept. of ECE,

K.S. Institute of Technology

JSS Mahavidyapeetha

JSS Academy of Technical Education, Bengaluru

Department of Computer Science & Engineering

Faculty Development Programme
on
Machine Learning: Techniques and Tools

Event Schedule

	9.30 – 11.00	11.00 – 11.15	11.15 – 12.45	12.45 – 1.30	1.30 – 2.45	2.45 – 3.00	3.00 – 4.30
Day 1 17 – 12 – 2018 Monday	Registration + Inauguration	Tea Break	Overview of Machine Learning and Data Understanding Dr. D S Guru University of Mysore	Lunch	Scalable fuzzy clustering technique for Big Data Classification with an Application to Genome Classification Dr. Neha Bharill IIT Dharwad	Tea Break	Feature Engineering Vinay Kumar N Samsung Technologies
Day 2 18 – 12 – 2018 Tuesday	Bayesian classifiers Dr. P.B. Mallikarjuna JSSATE, Bengaluru	Tea Break	k- Nearest Neighbor & Decision Tree based Classification Dr. Nagasundara K B JSSATE, Bengaluru	Lunch	Support Vector Machines Dr. B. H. Shekar Mangalore University	Tea Break	Dimensionality Reduction Techniques Dr. Veerabhadrappa Mangalore University
Day 3 19 – 12 – 2018 Wednesday	Data Clustering Dr. Harish B. S. JSSSTU, Mysuru	Tea Break	Gaussian Mixture Models Dr. Manjunath Aradhya V. N JSSSTU, Mysuru	Lunch	Markov Random Fields Dr. Manjunath Aradhya V. N JSSSTU, Mysuru	Tea Break	Ensemble Learning Dr. Mohammad Imran Eiyle Technologies
Day 4 20 – 12 – 2018 Thursday	Speech Processing using Deep Learning Dr. Mahadev Prasanna IIT Dharwad	Tea Break	Reinforcement Learning Dr. Naveen N. C. JSSATE, Bengaluru	Lunch	Regression Techniques Dr. Punitha P IBM Technologies	Tea Break	Applications of Machine Learning Dr. Naveen Onkarappa Herman International India Pvt. Ltd.
Day 5 21 – 12 – 2018 Friday	Introduction to Neural Networks Dr. Dinesh R Samsung Technologies	Tea Break	Deep Learning Dr. Dinesh R Samsung Technologies	Lunch	Recurrent Neural Network and its Applications Dr. Manjunath S Samsung Technologies	Tea Break	Valedictory Function & Certificate Distribution

JSS Mahavidyapeetha

JSS Academy of Technical Education

Dr. Vishnuvardhan Road, Bengaluru - 560060

(Affiliated to VTU, Belagavi, Approved By AICTE, New Delhi, All UG Programs are Accredited by NBA, New Delhi)

Department of Computer Science & Engineering

Five Days Faculty Development Programme on

Machine Learning: *Techniques and Tools*

This is to certify that Dr./ Mr./ Mrs./ Ms. _Surekha Bossa_

KSIT, Bangalore has particip

in Five Days Faculty Development Programme on **Machine Learning:** *Techniques and Tools* held at JSSATE, Bengaluru from 17th to 21

December 2018.

r. Nagasundara K B
Co-Convenor

Dr. Naveen N C
Convenor

Dr.Mrityunjaya V. L

K.S.INSITITUTE OF TECHNOLOGY

Department of Electronics and Communication Engineering

Report on

Five DayWorkshopon Partial Differential Equations

Using Mat Lab- 10th to 14th June 2019

DEPARTMENT: Department of Mathematics

COLLEGE: BNM Institute of Technology, Bangalore.

NAME OF THE EVENT: Workshop on Computational methods for Partial Differential Equations using Mat Lab

DURATION OF WORKSHOP: 05 Days.

TECHNICAL RESOURCE PERSON /COORDINATOR:

1. Dr. G. D. VeerappaGowda, Professor in Mathematics, TIFR, Center for Applicable Mathematics, Bangalore.
2. Mr. Ganesh Vaidya (Lab sessions) Research scholar, TIFR, Center for Applicable Mathematics, Bangalore.

ABOUT THE WORKSHOP:

This workshop enhanced the computational skills in solving the Partial Differential Equations (PDEs), which is one of the key-stone for today's ever-growing research work and industrial applications. Ubiquitous nature of PDE in developing the mathematical models of practical engineering problems and complexity in finding the solutions, demands a computational approach. One can find the application of PDE in almost all engineering fields, Civil, Mechanical, Bio-Tech, Electrical, Electronics and communications engineering and so on. A paradigm for modern applied mathematics is the synergy between analysis, modeling and computation. Most PDEs of interest do not have analytical solutions so a numerical procedure must be used to find an approximate solution. This course is an introduction to the numerical analysis of PDEs which is designed to emphasize the interaction between mathematical theory and numerical methods in solving engineering problems. The course also introduces the participants to MATLAB tool to solve PDEs.

OBJECTIVE OF WORKSHOP:

During the course the participants were able to recognize

- Heat equation, wave equation, Transverse vibration equation and have knowledge of their solution, stability and applicability.
- Use computational tools to solve problems and applications of Partial Differential Equations.
- Classify the fundamental principles of partial differential equations (PDEs).
- Model free and forced mechanical oscillations and design heating and cooling chambers.
- Wave equations in acoustics and solve the same.

The details of session in 5 day Workshop is as follows:

Day-01

General Introduction to Partial differential equations (PDE) and their applications. Introduction to MATLAB to solve PDE by using numerical methods.

Day-02

Wave equation, Numerical methods and stability analysis, Lab session using MATLAB to solve wave equation.

Day-03

Heat equation, Numerical methods and stability analysis, Lab session using MATLAB to solve heat equation.
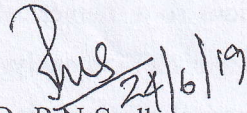
Day-04

Laplace equation, Numerical methods and their convergence, Lab session using MATLAB to solve Laplace equation.

Day-05

Non-linear hyperbolic conservation Laws, Numerical methods to solve Non -linear hyperbolic conservation Laws, Lab session using MATLAB to solve conservation laws.

Saleem S Tevaramani
Asst Prof, ECE

Dr.P N Sudha 24/6/19
HOD, ECE

B. N. M. Institute of Technology

BITES

Approved by AICTE, Affiliated to VTU and Accredited as grade A Institution by NAAC.
All UG branches - CSE, ECE, EEE, ISE & Mech. E accredited by NBA for academic years 2018-19 to 2020-21 & valid upto 30.06.2021
27ᵗʰ Cross, 12ᵗʰ Main, Banashankari 2ⁿᵈ Stage, Bengaluru - 560 070, INDIA
Ph: 91-80-26711780/81/82 E-mail: principal@bnmit.in, www.bnmit.org

Certificate

This is to certify that Mr. / Mrs. / Ms. ___**Saleem S. Tevaramani**___ of

___**K. S. Institute of Technology**___ has participated in a workshop

on *"Computational Methods for Partial Differential Equations using MATLAB"* organised by Department of Mathematics, B.N.M. Institute of Technology, Bengaluru in association with **BITES** during June 10 - 14, 2019.

Prof. K. N. Balasubramanya Murthy	Prof. T. J. Rama Murthy	Dr. Krishnamurthy G. N.	Dr. S. Marjunath
Chairman	Director	Principal	Prof. & Head, Mathematics
BITES, Bengaluru	BNMIT, Bengaluru	BNMIT, Bengaluru	BNMIT, Bengaluru

K S Institute of Technology, Bengaluru – 560 109

Department of Electronics and Communication Engineering

A Report on

Five days Faculty development program on Analog VLSI design

The program was organized by the Department of Electronics and Communication Engineering, DSCE, Bengaluru from 24th June to 28th June 2019.

VLSI is the current trend of manufacturing electronic integrated circuits. As we know that there are two divisions of electronic circuits (analog and digital). An IC (Integrated Circuit) consisting of a large number of transistors, usually in the range of around 10 K to 1 Billion is called a VLSI circuit. The invention of Planar Technology for fabrication of transistors on a silicon wafer made VLSI circuits possible today. The fabrication techniques are improving every year minimizing process steps, leakage and shrinking transistor size even further. All these help in building power efficient, fast and reliable electronic circuits. So in order to understand this fabrication technology there is a need of learning basics, designing and implementation of VLSI circuits using. Cadence tool.

The Five days Program gave lots of deep insights into the field of VLSI including cadence tool details which includes challenges faced in the designing and implementation aspects,. The information provided enriched the minds of young researchers like us. There were also three hands on sessions provided.

The details of the speakers are enclosed along with their resource materials.

Day 1: Monday 24/6/19:

Learnt about Fundamentals of Digital IC Design, VLSI Design flow Overview Semicustom IC Design – Requirements, focus on ASIC Design flow, RTL Synthesis of HDL – Synthesis guidelines, Synthesis and Simulation Mismatches, Gate Level Netlist – Concepts and key terminologies.

Day 2: Tuesday 25/6/19:

Learnt about Physical Design flow in vlsi, Introduction of Physical Design, Interpreting the Design Specifications, Physical Design flow – Getting Started with Physical Design, P Netlist and floor planning, Physical Design flow – Power Planning.

Day3: Wednesday 26/6/19:

Learnt about Physical Design flow – Placement, Physical Design flow – Clock Tree Synthesis (CTS), Physical Design flow – Routing. Performed hands on session on Physical Verification – Design Rule Check (DRC) and Layout Versus Schematic (LVS) checks using cadence tool.

DAY 4 & 5: Thursday 27/6/19 & Friday 28/6/19:

Practice of Lab Sessions (using Cadence Tool) of all VTU & autonomous colleges with interactive lecture series followed by a QUIZ & a valedictory function with the distribution of certificates, prizes & goodies. All the above

Submitted By

Aruna rao B P

Assistant professor

Dept of ECE,KSIT

Shilpa V

Assistant professor

Dept of ECE,KSIT

HOD,ECE 23/7/19

Principal 23.7.19

DAYANANDA SAGAR COLLEGE
OF ENGINEERING
BANGALORE-78, KARNATAKA
(An Autonomous Institution affiliated to VTU Belagavi & AICTE)
NAAC Accredited with 'A' Grade, NBA Accredited, NIRF Rated & ISO 9001:2008

(AVLSID-2019)

5-Day Faculty Development Programme (FDP)

ANALOG VLSI DESIGN
(Using Cadence Tool)

Certificate of Participation / Appreciation

is to certify that Dr. / Mr. / Mrs. / Ms. / Prof. _____ Aruna Rao B. P

_____ of _____ KSIT _____ has attended / participated in the 5-Day Fa

lopment Programme (FDP) on "ANALOG VLSI DESIGN" (Using Cadence Tool), Sponsored by

ple Technologies, Bangalore & the FDP being held in the ECE Dept. of DSCE from 24ᵗʰ of June 2019 t

e 2019.

Roopa	Dr. Dinesha P	Shashi Raj K	Dhruva Kumar S	Dr. T.C. Manjunath	Dr. CPS Prak
ECE,	Prof., ECE,	Asst. Prof., ECE,	Asst. Prof., ECE,	Prof. & HOD, ECE,	Principal
onvener	Chief Convener	Co-Convener	Co-Convener	DSCE-08	

DAYANANDA SAGAR COLLEGE OF ENGINEERING
BANGALORE-78, KARNATAKA
(An Autonomous Institution affiliated to VTU Belagavi & AICTE)
NAAC Accredited with 'A' Grade, NBA Accredited, NIRF Rated & ISO 9001:2008

Dayananda Sagar
College of Engineering

ENTUPLE
TECHNOLOGIES

(AVLSID-2019)

5-Day Faculty Development Programme (FDP)
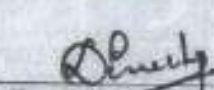
ANALOG VLSI DESIGN
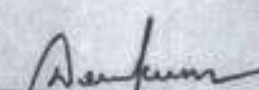
(Using Cadence Tool)

Certificate of Participation / Appreciation

is to certify that Dr. / Mr. / Mrs. / Ms. / Prof. _____SHILPA V_____

_____ of _____KSIT_____ has attended / participated in the 5-Day F

lopment Programme (FDP) on "ANALOG VLSI DESIGN" (Using Cadence Tool), Sponsored
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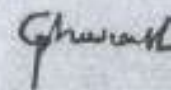
M. Roopa	Dr. Dinesha P.	Shashi Raj K	Dhruva Kumar S.	Dr. T.C.Manjunath	Dr. CPS Pra
f., ECE,	Prof., ECE,	Asst. Prof., ECE,	Asst. Prof., ECE,	Prof & HOD, ECE,	Principal
Convener	Chief Convener	Co-Convener	Co-Convener	DSCE, OS	DSCE

K S INSITITUTE OF TECHNOLOGY
Department of Telecommunication Engineering

Report on

2018-19.

Five Day FDP on Advanced Research Trends in Speech and Image Processing – 21st to 25th January 2019

DEPARTMENT: Electronics and Communication Engineering

COLLEGE: MVJ College of Engineering, Bangalore.

NAME OF THE EVENT: FDP on Advanced Research Trends in Speech and Image Processing

DURATION OF WORKSHOP: 05 Days.

TECHNICAL RESOURCE PERSONS :

1. Dr. S. Mohamed Mansoor Roomi, Professor, ECE Dept., Thiagarajar College of Engineering, Madurai .

2. Dr. D K Ravish, Professor, Dr. Ambedakar Institute of Technology, Bangalore.

3. Dr. R. Harikumar, Professor, ECE Dept., Bannari Amman Institute of Technology, Sathyamangalam

4. Mr. Ramachandra Hebbar, Scientist Regional Remote centre, ISRO, Bangalore.

5. Dr. Mohanraj.V, Data Scientist & CEO, HCL Technologies, Chennai.

ABOUT THE WORKSHOP:

Speech and Image Processing are those areas where in constant inventions and innovations are been carried on. Most of the researchers are gaining interest in these fields and many tools are been designed for simulation of their ideas. Also existing tools and libraries are been updated to aid the process of research.

CONTENT OF WORKSHOP:

1. Introduction to Image Processing
2. Biomedical Signal Processing
3. Speech Processing Techniques
4. Applications of Image processing
5. Geospatial Remote Sensing , GIS and GPS
6. Scope & Research avenues in Image Processing
7. Machine Learning and Deep Learning
8. Implementation of Research Papers using Image Processing tools

DAY 1 TO DAY 5:

The objective of the 5 day Faculty Development Program was to familiarize the participants with the state of the art simulation tools. It started from the basics of image processing and covered all major components and process involved in Image processing and also throwing light on Speech processing. Human Visual System (HVS) was explained in detail. Ample of example were given from the resource person and the session was made very interesting. Image sensing, acquisition, segmentation and other processing were elaborated and explained very clearly.

K-means clustering was explained in detail in comparison with Sobel and Canny Edge detection. Topics on Singular Value Decomposition (SVD), Edge detection problems, clusters and edges were elaborated. Image quality measurement using PSNR, Average Difference, Structural Content, Normalized Cross Correlation, Image Fidelity and Structural similarity Index were discussed.

Support Vector Machine (SVM) Tool was explained. Also denoising Algorithms were detailed. Machine Learning Algorithms and Artificial Intelligence was explained using live demos to detect similarity between face images.

After that the tutorial moved toward some more complex applications including image processing. Hands on Sessions were also helpful in knowing the tools and gaining knowledge.
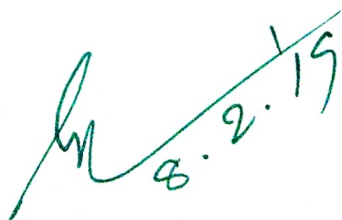
OUTCOME:

1. To get the in-depth knowledge in Speech and Image processing
2. To know in detail about edge detection problems.
3. To expose the delegates to the depth of coverage as per research interests.
4. Design and analysis the security algorithms using Machine Learning concepts and Compare different algorithms.
5. Accurate and scalable simulation brings down cost and time of development, thus accelerating pace of research in that area.
6. Effective way of defining problems, dealing with the solutions to the defined problems.

TARGETED AUDIENCE:

1. Academicians
2. UG/PG students
3. Research Scholars

Srividya.R

Prof. Chanda. V. Reddy
HOD

Engineered for Tomorrow

mvj COLLEGE OF ENGINEERING
Established in 1982

Certificate

This is to certify that   Ms. Srividya R

of K S Institute of Technology, Bangalore

has attended Five- Day Faculty Development Program on "Advanced Research Trends in

Speech and Image Processing" organized by Department of Electronics & Communication

Engineering, MVJ College of Engineering, Bangalore from 21st Jan, 2019 to 25th Jan, 2019.

Vice Principal

(Prof.M Brindha)

Principal

(Dr.Nagaraj Sitaram)

K.S.INSITITUTE OF TECHNOLOGY

Department of Telecommunication Engineering

Report on

Five Day Workshop on Partial Differential Equations

Using Mat Lab- 10th to 14th June 2019

DEPARTMENT: Department of Mathematics

COLLEGE: BNM Institute of Technology, Bangalore.

NAME OF THE EVENT: Workshop on Computational methods for Partial Differential Equations using Mat Lab

DURATION OF WORKSHOP: 05 Days.

TECHNICAL RESOURCE PERSON /COORDINATOR:

1. Dr. G. D. VeerappaGowda, Professor in Mathematics, TIFR, Center for Applicable Mathematics, Bangalore.
2. Mr. Ganesh Vaidya (Lab sessions) Research scholar, TIFR, Center for Applicable Mathematics, Bangalore.

ABOUT THE WORKSHOP:

This workshop enhanced the computational skills in solving the Partial Differential Equations (PDEs), which is one of the key-stone for today's ever-growing research work and industrial applications. Ubiquitous nature of PDE in developing the mathematical models of practical engineering problems and complexity in finding the solutions demands a computational approach. One can find the application of PDE in almost all engineering fields, Civil, Mechanical, Bio-Tech, Electrical, Electronics and communications engineering and so on. A paradigm for modern applied mathematics is the synergy between analysis, modeling and computation. Most PDEs of interest do not have analytical solutions so a numerical procedure must be used to find an approximate solution. This course is a introduction to the numerical analysis of PDEs which is designed to emphasize the interaction between mathematical theory and numerical methods in solving engineering problems. The course also introduces the participants t MATLAB tool to solve PDEs.

OBJECTIVE OF WORKSHOP:

During the course the participants were able to recognize

- Heat equation, wave equation, Transverse vibration equation and have knowledge of their solution, stability and applicability.

- Use computational tools to solve problems and applications of Partial Differential Equations.
- Classify the fundamental principles of partial differential equations (PDEs).
- Model free and forced mechanical oscillations and design heating and cooling chambers.
- Wave equations in acoustics and solve the same.

The details of session in 5 day Workshop is as follows:

Day-01

Gene General Introduction to Partial differential equations (PDE) and their applications. Introduction to MATLAB to solve PDE by using numerical methods.

Day-02

Ge Wave equation, Numerical methods and stability analysis, Lab session using MATLAB to solve wave equation.

Day-03

Heat equation, Numerical methods and stability analysis, Lab session using MATLAB to solve heat equation.

Day-04

Laplace equation, Numerical methods and their convergence, Lab session using MATLAB to solve Laplace equation.

Day-05

Non-linear hyperbolic conservation Laws, Numerical methods to solve Non -linear hyperbolic conservation Laws, Lab session using MATLAB to solve conservation laws.
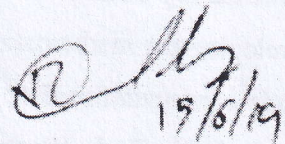
Participants

Rekha.N

Srividya.R

15/6/19

Dr. Chanda. V. Reddy
HOD

B. N. M. Institute of Technology

BITES

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27ᵗʰ Cross, 12ᵗʰ Main, Banashankari 2ⁿᵈ Stage, Bengaluru – 560 070, INDIA
Ph: 91-80-26711780/81/82   E-mail: principal@bnmit.in, www.bnmit.org

Certificate

This is to certify that Mr. / Mrs. / Ms. _____**Rekha N.**_____ of
_____**K. S. Institute of Technology**_____ has participated in a workshop
on **"Computational Methods for Partial Differential Equations using MATLAB"** organised by Department of Mathematics, B.N.M. Institute of Technology, Bengaluru in association with **BITES** during June 10 - 14, 2019.

Prof. K. N. Balasubramanya Murthy
Chairman
BITES, Bengaluru

Prof. T.J. Rama Murthy
Director
BNMIT, Bengaluru

Dr. Krishnamurthy G. N.
Principal
BNMIT, Bengaluru

Dr. S. Manjunath
Prof. & Head, Mathematics
BNMIT, Bengaluru

K S Institute of Technology Bangalore – 109

Department of Electronics and Communication Engineering

A Report on
Faculty Development Program on "Machine Learning for IoT Applications"
Date: 28th January to 1st February 2019
Five Day workshop

Five Day workshop was organized at BMSIT, Yelahanka, Bangalore on 28-01-2019 to 01-02-2019 on the topic **"Machine Learning for IoT Applications"** by the Department of ISE,CSE & TCE.

Objectives of the Workshop:

1. To provide an introduction to Artificial Intelligence.

2. To provide an introduction to the Machine Learning.

3. To provide an introduction to the Machine Learning curriculum for the 8th Semester Elective Subject.

The day started with the inauguration by Lighting tha LAMP, in the presence of various Resource persons **Prof. G.Debashish Banerjee**, GMR Tech., Bangalore. **Dr. Vijay Mishra** Centre for Nanoscience & Engg.Indian Institute of Science, Bangalore, **Mr.Arun** (Nihon Communications Solutions Ltd.), **Mr. Vishwa kiran S** (BMSIT & M), **Dr. Manjunath T N** (BMSIT & M), **Mr. Gireesh Babu C N** (BMSIT&M), **Dr. Mala C S** (BMSIT&M), **Mr. Chandrashekara T** (BMSIT&M), **Dr. Usha B A** (BMSIT&M), **Mrs. Vinutha K** (BMSIT&M), **Dr. Anupama H S** (BMSIT&M), **Mr. Harinath** (Technical Staff, BMSIT&M).

DAY-1(28-01-19)

SESSION 1
The first session was started with Registration and introduction to AI (Artificial Intelligence) by **Prof. G.Debashish Banerjee**, GMR Tech, Bangalore. He explained about the Overview of the AI used for the Machine Learning, Industrial Aspects of it.

SESSION 2: The second session was started by, **Dr. Manjunath T N On "Machine Learning for IoT & Applications with Case Study"**

SESSION 3: The Third session was started by Mr. Vishwakiran S On " Introduction to Raspberry **Pi & Configuration of Raspberry Pi"**

SESSION 4: The Fourth session was started by **Mr. Vishwakiran S** about **"Raspberry Pi with different programming languages & Applications of Raspberry Pi"**
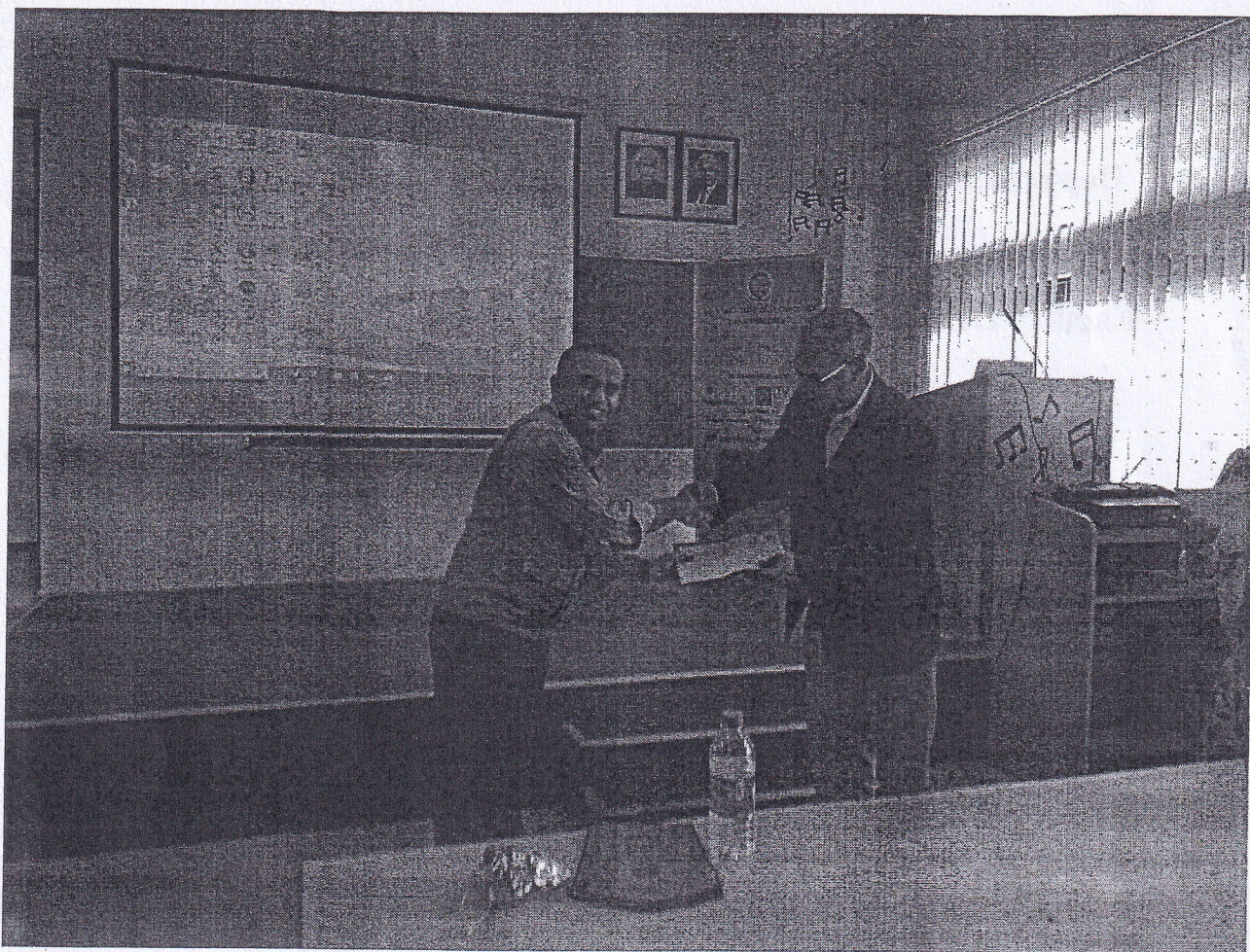
DAY-2(29-01-19)

SESSION 1: The first session was started with Mr. Arun about **"Introduction to IoT and its IoT Architectures"**

SESSION 2: The second session was started by **Mr. Arun on "Sensors for IoT"**

SESSION 3: The Third session was started by **Mr. Arun Hands on Raspberry Pi.**

SESSION 4: The Fourth session was started by **Mr. Arun on "Cloud Connectivity"**

DAY-3 (30-01-19)

SESSION 1: The first session was started with Dr. Mala C S & Mr. Harinath about **"Installation of IDE for Arduino"**

SESSION 2: The second session was started by Dr. Mala C S & Mr. Harinath about "Hands On Aurdino"

SESSION 3: The Third session was started by **Dr. Usha B on "A Security Issues for Machine Learning with IoT Data"**

SESSION 4: The Fourth session was started by Mrs. Vinutha K On **"Introduction to python Simple Python Exercise"**

DAY-4 (31-01-19)

SESSION 1: The first session was started with **Mr.Chandrashakara T** about "**Weather Prediction using Naive Bayes Algorithm**".

SESSION 2: The second session was started by **Mrs. Vinutha K On "K Means Algorithms for Crime Detection**".

SESSION 3: The Third session was started by **Mr. Gireesh Babu C N On "KNN for Iris Data Set**".

SESSION 4: The Fourth session was started by **Mr. Chandrashakara T On "Weather Prediction of Random Forest Algorithms**".
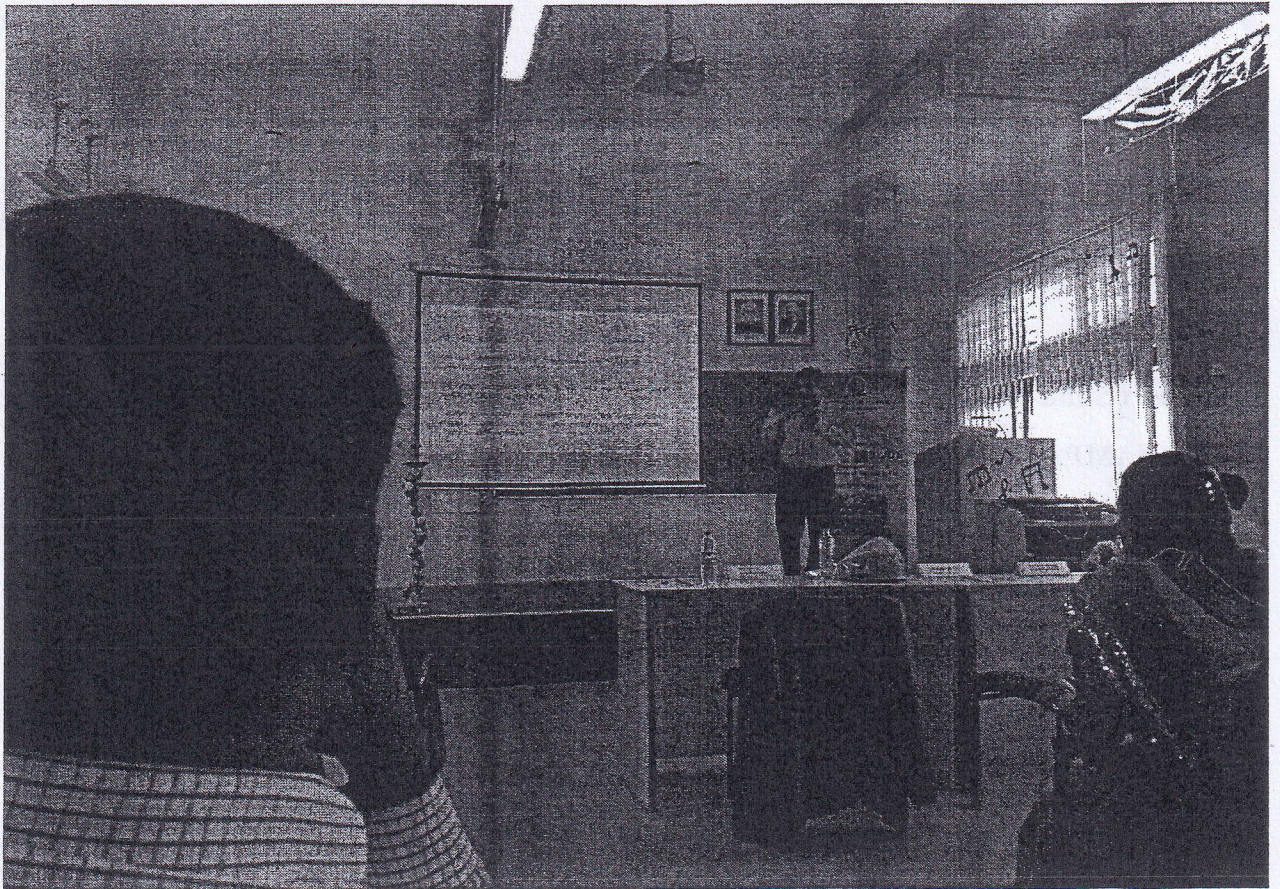
DAY-5 (01-02-19)

SESSION 1: The first session was started with **Dr.**Anupama H S On "**ANN and Backpropagation Algorithms**".

SESSION 2: The second session was started by **Dr.Vijay Mishra On "Research Issues on IOT".**

SESSION 3: The Third session was started by **Assessment of the FDP by the participants.**

SESSION 4: The Fourth session was closed by valedictory function.

The resource persons were effective in knowledge sharing through their inspiring talks and demonstrations.

OUTCOME

The knowledge acquired in the workshop help the participants to Overview of the Artificial Intelligence, Machine Learning & different Algorithms used in the industry, Applications of the ML.

Resource Persons:
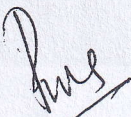
1. **Prof. G.Debashish Banerjee**, GMR Tech., Bangalore.

2. **Dr. Vijay Mishra** Centre for Nanoscience & Engg.Indian Institute of Science, Bangalore.

3. **Mr.Arun** (Nihon Communications Solutions Ltd.), Bangalore.

Report Submitted By:

Mr. SAMPATH KUMAR.S.

Assistant professor

ECE Dept, KSIT,Bangalore.
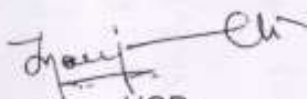
HOD

14.2.19

Principal

BMS INSTITUTE OF TECHNOLOGY & MGMT
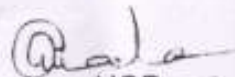## YELAHANKA, BANGALORE – 560064

National Level Five Day Faculty Development Programme on
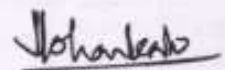### Machine Learning for IoT Applications

Certificate Of Participation

This is to certify that Mr. / Mrs. / Ms./Dr. ....SAMPATHKUMAR..S..KSIT/ECE......

BENGALURU...-has participated in national level five day faculty development programme

on "Machine Learning for IoT Applications" held from 28th January to 1st February 2019

organized by Departments of ISE, CSE and TCE, BMSIT&M, Bengaluru in association with

CSI Student Chapter.

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