

REPORT
Of
ONE WEEK FACULTY DEVELOPMENT PROGRAM
On
**INTELLIGENT ELECTRONIC SYSTEM DESIGN USING
BIO INSPIRED ALGORITHMS**

28th OCT – 2nd NOV, 2017

Jointly Organized by



E&ICT ACADEMY
NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL – 506004, TELANGANA STATE – INDIA

&

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



KKR & KSR INSTITUTE OF TECHNOLOGY & SCIENCES
VINJANAMPADU, GUNTUR, AP-522017

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FDP Report

DATE: 28th OCT – 2nd NOV, 2017

TIME: 9.00 AM to 5.00 PM

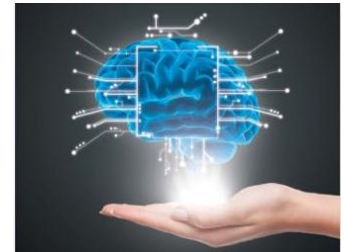
VENUE: Seminar Hall, KITS Guntur

ORGANIZED BY: E.C.E Dept. of KITS & E&ICT ACADEMY, NITW

Coordinators:

Dr. M. Siva Ganga Prasad, HOD ECE Dept., KITS Guntur

Dr. J. Ravi Kumar, Asst. Prof, ECE Dept., NITW



EVENT DESCRIPTION:

The ECE department of KITS and **E&ICT ACADEMY NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL** conducted a one week Faculty Development Program on **“INTELLIGENT ELECTRONIC SYSTEM DESIGN USING BIO INSPIRED ALGORITHMS”** on 28th OCT – 2nd NOV, 2017 from 9.00 AM to 5.00 PM in the Seminar Hall. **Prof. P.Siddaiah, Dean, ANU College of Engineering & Technology** is the chief Guest for this FDP.



ABOUT PROGRAM:

Bio inspired intelligent algorithm (BIA) is a kind of intelligent computing method, which is with a more lifelike biological working mechanism than other types. BIA's has made significant progress in both understanding of the neuroscience and biological systems and applying to various fields.

Emerging and evolving systems are integrating intelligent attributes to enable the thrust towards making technology adaptive and functional as an aid to improve existing

designs. Intelligent system integrates different techniques of genetic algorithms, artificial immune systems, particle swarm optimization, and hybrid models to solve many real-world problems. Now a day's main challenge in data driven problem is getting optimal solutions in time, which can be overcome by application of bio-inspired algorithms. Bio-inspired algorithms are always research topics in artificial intelligence communities. This FDP provides theoretical and practical knowledge on the design and implementation of intelligent systems related to areas of electronic systems, communication, computer vision, mechanical systems, soft computing and related issues.

ABOUT E&ICT ACADEMY:

Coming to **Electronics & ICT academy** is being set up at NIT WARANGAL with financial assistance from Deity,MCIT,GOL. The jurisdiction of this academy in *Telangana,Andhra Pradesh,Kartanataka and Puducherry, Andaman & Nicobar islands and Lakshadweep UTs*. This academy role is to offer faculty development programmers in standardized courses and emerging areas of electronics, information communication technologies; Training & consultancy services for industry; curriculum development for industry; CEP for working professionals; Advice and support for technical incubation and entrepreneurial activities.

SESSION ACTIVITIES:

Day 01 (28.10.2017)



As per the given instructions by the Dr. Siva Ganga Prasad, HOD ECE dept., the faculty in charges made proper arrangements for the Faculty Development Program. Between 9.00AM to 9.45 AM the registration process for participants was completed. Registrations were done by the **Ms.T.Revathi & Mrs.T.Bhavani** .

As a mark of our tradition and culture, the dignitaries lighted Lamp. The workshop was started with opening remarks of **Dr. Siva Ganga Prasad** . Later **Miss. P.Jwalitha** of ECE

Department shared the few words about the chief guest **Prof. P.Siddaiah, Dean, ANU College of Engineering & Technology.**

It was followed by delivering a few messages by the HOD, Vice Principal, Secretary, Chairman, Dr. J. Ravikumar and the chief Guest. After the message of **Prof. P.Siddaiah, Dean, ANU College of Engineering & Technology** he was honored by the chairman sir with a Shalv and Memento.



The first resource person in this FDP was **Dr. J. Ravi Kumar, Asst. Prof, ECE Dept.** NITW started his discussion with the very basic idea of concept. He started Genetic Algorithm and Particle Swarm Optimization. He started Genetic algorithm with the description of Population, Selection, Cross over, Mutations and termination along with examples. He explained Adaptive Algorithm about system identification with examples. In the afternoon session he explain Channel equalization using PSO. Next a lab session was conducted.

Day 02 (29.10.2017)

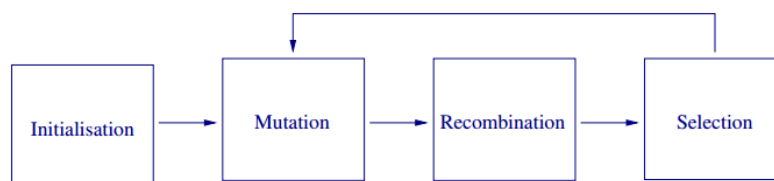
An informative lecture on “**Teaching-Learning-Based Optimization (TLBO) Algorithm**” was discussed by **Dr. J. Ravi Kumar, Asst. Prof, ECE Dept.**. He said “Teaching-learning-based optimization (TLBO) is a population-based algorithm which simulates the teaching-learning process of the class room. This algorithm requires only the common control parameters such as the population size and the number of generations and does not require any algorithm-specific control parameters” In this session participants were learned the step by step procedure and different phases regarding TLBO.

The working of TLBO is divided into two parts,

- Teacher phase
- Learner phase

Day 03 (30.10.2017)

Prof. Swagatam Das, ISI, Kolkata, has illuminated on “Differential Evolution (DE)”. In this session participants were gained with the knowledge of the on Optimization.



He explained

- The Basics of Differential Evolution
- Why use Differential Evolution?
- Evolutionary Algorithms
- Initialization
- Mutation
- Mutation
- Recombination
- Selection

He explained DE with one problem statement, Minimization fitness of function. He inspired the participants to work on real time Technology and also gave some guidelines for this.



Day 04 (31.10.2017)

Prof. Swagatam Das, ISI, Kolkata, has delivered note on “benchmarking of optimization Algorithms on day 04.38 Participants Actively participated in the session. In the afternoon session he explained how to publish papers in Reputed SCI journals. At the end of the session the speaker was honored by the HOD sir with a Shalv and Memento.



Day 05 (01.11.2017)

On 5th day **Dr. J. Ravi Kumar, Asst. Prof, ECE Dept** explained Jaya Algorithm. He explained that JAYA is a simple and new optimization algorithm for solving constrained and unconstrained optimization problems. He said that this algorithm is based on the concept that the solution obtained for a given problem should move towards the best solution and should avoid the worst solution. This algorithm requires only the common control parameters and does not require any algorithm-specific control parameters. He explained Demonstration of the working of Jaya algorithm, Flowchart of Jaya algorithm, The multi-objective Jaya algorithm and Flowchart of MO -Jaya algorithm.

In the second Session **Dr. M. Siva Ganga Prasad, HOD ECE Dept., KITS Guntur,** explained **Outcome based Education.** The Session received good response from researchers, and faculty members.

Day 06 (02.11.2017)

The last day of the FDP was started with the lecture of **Prof. N.V.S.N Sarma, NITW.** He said in earlier optimization is only present in one parameter, But the present day requires Optimization in all parameters this is called Multi Parameter Optimization. He gave a suggestion to the participants to think from electronic engineer to General engineer. He explained **Biogeography based Optimization (BBO).** In the second session he explained **“Interference Reduction Using Adaptive Antenna”**



At the end of the session the speaker was honored by the HOD sir with a Shalv and Memento. After the feedback from the participants, The Vote of Thanks was delivered by **Mr. K. Raju,** Associate Professor of ECE. On behalf of the department of Electronics and communication engineering, the hosting department, He extended her gratitude to the College Management, Principal, Vice Principal, in charge HOD, Delegates and Organizing Committee. The FDP came to end with the National Anthem.

EENADU 29-10-2017

అధ్యాపకులకు పరిశోధనలు కీలకం

విజనంపాడు(వట్టిచెరుకూరు)స్కూల్నుండి : అధ్యాపకులు విద్యార్థులకు పాఠ్యాంశాల బోధన చేయడంతో పాటు పరిశోధనలూ చేయాలని ఆచార్య నాగార్జునా విశ్వవిద్యాలయం ఇంజనీరింగ్ కళాశాల డీన్ సిద్ధయ్య అన్నారు. శనివారం వట్టిచెరుకూరు మండలంలోని విజనంపాడు కీచ్ ఇంజనీరింగ్ కళాశాలలో ఆచార్యులకు జాతీయ స్థాయిలో ఇంజనీరింగ్ ఎలక్ట్రానిక్ సిస్టమ్స్ డిప్లొమీపై వరంగల్ ఎన్ఐఐటీ వారం రోజులు పాటు నిర్వహించే తలపెట్టిన శిక్షణ తరగతులకు ఆయన ముఖ్యఅతిథిగా ప్రారంభించి ప్రసంగించారు. కొత్త ఆంశాలపై నిర్వహించే పరిశోధనలు సమాజానికి, విద్యార్థులకు ఉపయోగ పడతాయని చెప్పారు.



శిక్షణ తరగతులను ప్రారంభిస్తున్న సిద్ధయ్య, పక్కన సుబ్బారావు

కళాశాలలో పరిశోధనలు చేసే వారిని ప్రభుత్వం ప్రోత్సహిస్తుందని చెప్పారు. తాజాగా చేసిన పరిశోధనల ఫలితంగా వర్షా కాలంలో పీడుగులు పడే ప్రాంతాల్ని 30 నిమిషాల్లో గుర్తించి, ఇదే ప్రాంతం వారికి సెల్ఫోన్ ద్వారా సమాచారం అందచేయడం జరుగుతుందని

చెప్పారు. కొత్త పరిశోధనలు నిర్వహించే వారు రాష్ట్ర ప్రభుత్వం దృష్టికి తీసుకెళ్లే విధులు మంజూరు చేస్తుందని చెప్పారు. ఎన్ఐఐటీ వరంగల్ ఆచార్యులు రవికుమార్, కీచ్ వైట్నీ కోయి సుబ్బారావు, కార్యదర్శి కోయి శేఖర్, ఇన్చార్జ్ ప్రెసిడెంట్ కమండ్ర్ కృష్ణ, ఈసీఈ విభాగాధిపతి శివగంగ ప్రసాద్లు పాల్గొని మాట్లాడారు.

SAKSHI 29-10-2017

జాతీయ స్థాయి ఫ్యాకల్టీ డెవలప్ మెంట్ ప్రోగ్రాం

విజనంపాడు(వట్టిచెరుకూరు): మండల పరిధిలోని విజనంపాడు గ్రామ సమీపంలోని కీచ్ ఇంజనీరింగ్ కళాశాలలో 8 రోజుల పాటు నిర్వహించనున్న జాతీయ స్థాయి ఫ్యాకల్టీ డెవలప్ మెంట్ ప్రోగ్రాంను వరంగల్ ఎన్ఐఐటీ, ఇన్ఐటీ ఆకాడమీ సౌజన్యంతో నిర్వహించారు. ఈ కార్యక్రమ ప్రారంభోత్సవ కార్యక్రమానికి ఆచార్య నాగార్జున యూనివర్సిటీ డీన్ వీ.సిద్ధయ్య ముఖ్య అతిథిగా విచ్చేసి మాట్లాడారు. అధ్యాపకులు విద్యార్థులకు విద్య, కమ్యూనికేషన్ స్ఫూర్తిపై ఆచరణాత్మక కల్పించాలన్నారు. ఎన్ఐఐటీ వరంగల్ ఆన్లైన్ ప్రాఫెసర్ రవికుమార్ మాట్లాడుతూ అధ్యాపకుల్లో దాగిఉన్న సృజనాత్మకతను చెలికితీసి ఉద్యోగంలో వర్తించేవారు నిర్వహిస్తున్నట్లు తెలిపారు. కార్యక్రమంలో కీచ్

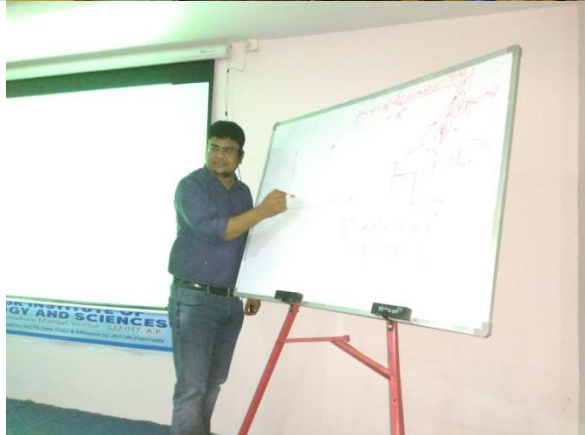


మాట్లాడుతున్న విజనంపాడు డీన్ వీ.సిద్ధయ్య

కళాశాల చైర్మన్ కోయి సుబ్బారావు, సెక్రటరీ కోయి శేఖర్, ఇన్చార్జ్ ప్రెసిడెంట్ ఎం.రవీంద్రకృష్ణ, ఈసీఈ విభాగాధిపతి శివగంగ ప్రసాద్, వివిధ విభాగాల అధిపతులు, అధ్యాపకులు పాల్గొన్నారు.

Gallery





FACULTY DEVELOPMENT PROGRAMME (FDP)
ON
**INTELLIGENT ELECTRONIC
SYSTEMS DESIGN**
USING BIO INSPIRED ALGORITHMS

Speakers


Dr. J. RAVI KUMAR,
Asst.Prof,Dept of.ECE, NITW


Dr. SWAGATAM DAS
Asst.Prof, ISI, Kolkata


Dr. KOTA SOLOMON RAJU
Principal Scientist, CSIR-CEERI


Prof. N.V.S.N SARMA
Professor, Dept. of ECE, NITW

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