

CHAIRMAN'S DESK





Dear Members,

Wishing our CSI Tiruchirappalli Members & their families a Happy New Year 2020.

Very happy to meet all of you through our CSI Tiruchirappalli E Newsletter.

It is a great pleasure for me to appreciate that the editorial team of CSI-Tiruchirappalli Chapter in bringing out the fourth issue for this financial year 2019-2020 by taking lot of initiatives with the Emerging Technologies Technical programmes.

In association with The Institution of Engineers (India), Tiruchirappalli Local Centre, we have carried out 4 Lecture programmes with K. Ramakrishna College of Engineering 3 programmes, with MAM College of Engineering a major programme, with Jamal Mohammed College a programme, with Mount Zion College of Engineering 4 programmes and with MIET Engineering College one programme. My special appreciation to our past Chairman Dr. S. Ravimaran for taking the responsibility and conducting the CSI Young IT Professional Award 2020 on 7th January 2020 in an excellent way, consecutively.

CSI Tiruchirappalli Chapter in association with Bharathidasan University Technology Park (BUTP), Tiruchirappalli and with UCE, BIT Campus, Anna University, Tiruchirappalli conducted a one-day workshop on "BIOINFORMATICS USING PERL" successfully on 6th March 2020 at BUTP Seminar hall. More than 100 students & Faculty from Tamil Nadu participated & got benefitted. It is a milestone for our chapter for bringing an Emerging Topic. My Appreciations are for Dr. G. Annapoorani & her team from Anna University, our Office Bearers, Committee Members and our members for making this workshop useful to our academic Community.

We are planning to cover many emerging CS & IT Topics in the forthcoming months. I request all the members to attend the forth coming technical programs & get benefitted. Our CSI Tiruchirappalli Chapter is an active one. I request all the members to participate & disseminate the same to all the relevant institutions & get benefitted. I request all our members to motivate your friends & colleagues to attend our technical programmes.

I request all our members to motivate new members to join our CSI to increase our strength.

We are requesting, expediting & trying to motivate all the engineering colleges, Arts Colleges and polytechnics in our zone to establish student chapters. We solicit your support to make our Chapter to be the best to disseminate the Computer Science and Information Technology to this part of our country.

With Best Wishes.

R. Sug

Er. R. Selvaraj Chairman CSI Tiruchirappalli



EDITORIAL

In this fourth Quarter, the Editorial Team is happy to announce CSI Trichy jointly with IEI-TLC organized events like Big Data Analytics, Digital Image processing applications in NDT, Petrol Depo Automation etc. Integrated Terminal Automation System, besides efficiency brings in transparency in the entire operation. Lecture delivered on basic image processing applications in NDE, particularly in radiographic applications.

In Jan-2020, The Regional YITP Awards competition 2020 was conducted at MAMCE, Trichy. Dr. S. Ravimaran, Principal MAMCE - Convener's role is laudable.

The CSI workshop on Bioinformatics using Perl was held on 06th March 2020 at Bharathidasan University Technology Park (BUTP) in association with Bharathidasan University and University College of Engineering, BIT Campus, Anna University, Trichy.

The one-day workshop covered two primary focus areas in Bioinformatics: the central dogma of molecular biology and Bioinformatics using Perl programming. Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding very complex biological data such as genetic codes. About 85 faculty members, research scholars and students from different Engineering, Arts & Science Colleges participated in the workshop.

Notably, many College Student chapters have organized seminars on cloud computing, talk on career planning & Development, IT Quiz, Hackathon, Code battle, Hand on Android Training, Workshop on Block-chain technologies etc.

The event Organizers efforts in conducting these programmes smoothly deserves a special mention. It is happy to note the Healthy competition among the participants & Knowledge dissemination happened through-out these events.

Congratulations to the entire team CSI Trichy for achieving this feat.

With Regards
Editorial Team
CSI Tiruchirappalli Chapter.



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VENUE:

- ❖ IEI-TLC-Institute of Engineers (Opp. to bldg.79, BHEL Tiruchirappalli)
- * MAMCE-MAM College of Engineering, Siruganur, Tiruchirappalli.
- ❖ MZCET-Mount Zion College of Engineering & Technology, Pudukkottai.
- ❖ JMC-Jamal Mohamed College, Trichy
- * KRCE-K. Ramakrishna College of Engineering, Trichy
- * BUTP-Bharathidasan University Technical Park, Khajamalai Campus, Trichy

RECENT

LECTURES

Big Data Analytics



Er. M.J. Divya, Deputy Manager, IT Solutions & Systems, BHEL, Trichy

On 14th January 2020, organised a free lecture programme on "Big Data Analytics".

Wiki states that 'Big data is a field that treats ways to analyse, systematically extract information from, or otherwise deal with data sets that are too large or complex to be dealt with by traditional data-processing application software'.



Er. K.Ramdoss, Former GM, BHEL is presenting the Gift Cover to the Speaker in the presence of Er. R.Selvaraj, Chairman, CSI Tiruchirappalli Chapter and Er. GRK.Raju, Former CEO of Ponmalai Railway Workshop, Ponmalai,



CSI Young IT Professional Award-2020 - YITPA 2020 Report

The National competition for young IT professionals instituted by CSI in the year 1999 is conducted every year to encourage the Researchers, IT professionals, Academicians, Consultants, Entrepreneurs and IT Practitioners in an Organization, or as individuals in service/ support/training function in the field of Information Technology. The competition aims at involving young IT professionals with a quest of innovation in IT and provides them an opportunity to demonstrate their knowledge, professional prowess and excellence in their profession.

YITP Award 2020, Regional Round for Region VII was well organized by the Tiruchirappalli chapter, at M.A.M. College of Engineering, Siruganur, Tiruchirappalli on 07th Jan 2020. Twelve (12) Nominations from academicians, professionals and consultants were received for the YITP award 2020, Out of which 7 nominations were selected.

The Regional YITP Awards 2020 was inaugurated with the lighting of lamp by the chief guest Mr.N. Rajasekaran, Vice Chairman CSI Tiruchirappalli Chapter. Dr. S. Ravimaran Convener, YITP 2020 welcomed the gathering and delivered a brief note on YITP Award contest. Mr.N. Rajasekaran, in his key note address was proud of the events conducted by the Tiruchirappalli CSI Host Chapter and winning many awards as best host chapter. He also expressed his desire that more number of participants take part in this contest in the future and contributing to the field of research for the welfare of our society. While addressing the gathering he insisted on innovation in teaching. The key note address by the chief guest was followed by the presentation by YITP 2020 nominees. D.Senthil Kumar Secretary CSI Trichy appreciated the winners of the event at end.









The jury members of YITP Award 2020 were Mr.N. Raja Sekaran, Vice Chairman, Mr. D. Senthil Kumar, Secretary, Mr.R. Siva Kumar, Treasurer and Dr. S. Ravimaran, Chairman – Nomination Committee of CSI Trichy Chapter. The Winner of the contest is Mr. Sudhakar M, Technical Architect, Tata Consultancy Service, Chennai, and the runner is Mr. D. Boopathy, Research Scholar, Bharathiyar University, Coimbatore and the special mention award was given to V. Abhiraman, P. Rohit Samuel and David Samuel from DMI College of Engineering, Chennai. The Trophy, Cash Awards and Certificates were given to the Winner, Runner and the Special mention category by Dr.M.A. Mohamed Nizam, Secretary and correspondent of M.A.M. College of Engineering. Mr. Sudhakar M, Technical Architect, TCS is nominated for the final round of YITP 2020 (National Round) to be held at Bhubaneshwar on16/01/2020. The YITP award 2020 came to an end with vote of thanks proposed by Dr. S. Ravimaran, YITP Convenor, Region VII.

Workshop on Bioinformatics using Perl

The chapter has conducted a "Workshop on Bioinformatics using Perl" was held on 06th March 2020 at Bharathidasan University Technology Park (BUTP) in association with Bharathidasan University and University College of Engineering, BIT Campus, Anna University, Trichy.

Dr. Gopinath Ganapathy, Registrar, Bharathidasan University inaugurated the workshop and briefed the need of such workshop in the current scenario. In addition to that he briefed about the humanoid, digital universe, automation, robotics, skin replacement therapy, human parts production and electronic tree growth.

Mr. N. Gopalaswamy, Director, Dalmia Bharat Limited addressed the gathering and advised the delegates to sharpen their skills by attending such workshops. In addition to that he insisted the participants to utilize the advancement of the technology to be harnessed in a positive manner.

Mr. R. Selvaraj, CSI Trichy Chapter Chairman, presided over the function. During his talk, he touched upon the activities of National and Regional level events of CSI chapter activities. He informed that the CSI Trichy chapter is continuously receiving Best Chapter Award and Best Electronic Newsletter Award from 2014 onwards to till date. He also conveyed that the CSI, Trichy chapter is conducting technical lecture programmes every second Tuesday of the month at BHEL premises.

The one-day workshop covered two primary focus areas in Bioinformatics: the central dogma of molecular biology and Bioinformatics using Perl programming. Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding very complex biological data such as genetic codes. As an interdisciplinary field of science, bioinformatics combines biology, computer science, information engineering, mathematics and statistics to analyse and interpret the biological data.

Developments in these fields have direct implications on key issues related to health care, medicine, genetic disorders, development of agricultural products, renewable energy, environmental protection, etc.











Currently, Bioinformatics research community requires Bioinformatics programmers to develop inter-disciplinary software. The goal of this workshop is to create awareness about Bioinformatics domain and debate on the opportunities and the challenges that arise.



Dr. G. Annapoorani, Head of Computer Science and Engg., department, University College of Engineering briefed about the workshop.



Dr. S Ravimaran, Principal MAMCE welcomed the gathering and Mr. D Senthilkumar, Hon. Secretary of the chapter proposed the vote of thanks.

Dr. G. Annapoorani delivered a lecture on the central dogma of molecular biology. Dr. K. Uma Maheswari, gave hands-on training on Perl Programming. Mr. T. Jaison Vimalraj, gave hands-on training on basic bioinformatics programs.



Prof. R. Kavitha gave hands-on training on advanced bioinformatics programs. About 85 faculty members, research scholars and students from different Engineering, Arts & Science Colleges participated in the workshop. In the valedictory function, Er. N. Rajasekaran, Vice chairman, CSI Trichy chapter delivered the valedictory address. Er. R. SivaKumar, Hon. Treasurer, CSI Trichy chapter proposed the vote of thanks. Dr Annapoorani, MC member coordinated the event. Thanks to her.









Digital Image Processing Applications in NDT



On 4th February 2020, the centre organised a free lecture programme on "Digital Image Processing Applications in NDT".

Digital image processing techniques are well known in a wide range of applications such as medical, low enforcement, space research, defence etc. However, in the case of conventional NDE for industrial applications, there has been only a sluggish shift towards the application of these technologies.

Er V. Deepesh, Senior Manager, NDE Department, BHEL, Tiruchirappalli is addressing the Audience.



Er S. Lakshmanan, Nomination Committee MC member is organising the event with the Audience



Automation in Thermal power plant



On 11th February 2020, the centre organised a free lecture programme on "Automation in Thermal Power plant".

Integrated Terminal Automation System/Depot Automation System provides monitoring, control and management of the entire product handling process, right from receiving to storage and distribution.

Mr. Mohammed Ghouse, General Manager, Micromax System Pvt.Ltd, Trichy delivered this lecture.



Er. R. Siva Kumar, Treasurer, Computer Society of India, Trichy is presenting a Memento to the speaker in amidst of Er. R. Selvaraj Chairman CSI Trichy and Er. S. Samidas, former GM, BHEL.



MC Meeting

The Business Session of the MC Meeting of the Computer Society of India, Tiruchirappalli Chapter was held on *Thursday 13th February 2020* at 7.00 p.m. in the BUTP Hall, Khajamalai, Tiruchirappalli – 23.











Petrol Depot Automation



Er. Thenmozhi Varman, Additional General Manager SSTP, BHEL, Tiruchirappalli delivered this lecture.

On 10th March 2020, the centre organised a free lecture programme on "Petrol Depot Automation".

Integrated Terminal Automation System/Depot Automation System provides monitoring, control and management of the entire product handling process, right from receiving to storage and distribution.



The speaker was Honoured with the Memento by Er. R. Selvaraj Chairman CSI Trichy in the presence of Dr. N. Kumaresan, FIE, NITT



Special Lecture Programme



Mr. S.N. SIRAJ MOHIDEEN, Software Engineering Principal, Cummins Inc., USA, delivering a talk on "Cloud Computing" held on 07-01-2020 at IT Seminar Hall of Jamal College Trichy.



Mr. SRINIVASAN THANUKRISHNAN, Founder & CEO, Glossy Technology Solutions Pvt. Ltd, Chennai, delivering a talk on "Career Planning and Development" held on 30-01-2020 at Computer Science Seminar Hall of Jamal College Trichy.



IT Quiz

A quiz on IT was conducted by the MZCET with the support of the chapter on 5th January 2020. More than 100 participants attended the quiz. Prizes were distributed to the winners



Pydroid



The Student chapter @ KRCE organised a two hands on workshop on "IoT Using Raspberry Pi" in association with the chapter at the college premises for the students of CSE. 36 participants attended the event conducted during 22nd and 23rd January 2020.

Internal Hackathon

The Student chapter @ KRCE organised a two-day internal Hackathon in association with the chapter. 26 participants attended the event conducted during 22nd and 23rd January 2020.



VARIT- 2K20



The chapter co-hosted the VARIT 2k20, the flagship event of Department of Computer Science of JMC along with the JMC student chapter on 30th January 2020.



VARIT 2k20 was filled with various events like Debugging, Code Shuffling, Web Design, Word Hunt, Paper Presentation, Dumb Charades, Stress Management, Ad zap, Etc. for the budding professionals. The Holy Cross College (Autonomous), Trichy emerged as the overall winner in the event in which 266 students from 25 colleges participated.

Dr. S. Ismail Mohideen, Principal, JMC, presided over the function. The Chief Guest Mr. Srinivasan Thanukrishnan, Founder & CEO, Glossy Technology Solutions Pvt. Ltd., Chennai, who is an illustrious alumnus, inaugurated the function. Dr. T. Abdul Razak, Co-ordinator and our immediate past chairman introduced the chief guest and also welcomed the gathering. Mr. K. Ishaq Ahamed (III B.C.A), Secretary, VarIT-2k20 proposed a vote of thanks.





Mr. Srinivasan Thanukrishnan, in his inaugural address, mentioned that the students should be able to convert the learned knowledge into practical skills.

The valedictory function was held at 5.30 p.m. in the N.B. Abdul Gafoor A/c Auditorium. Prof. K. Syed Kousar Niasi, Vice-President (CS & IT Association) welcomed the gathering. Dr. S. Ismail Mohideen, Principal, presided over the function and Hajee M. J. Jamal Mohamed Sahib, Treasurer of JMC spoke on the occasion. Dr A. Mohamed Ibraheem Vice-principal and Additional Vice-Principal Dr. M. Mohamed Sihabudeen graced the occasion.

Dr. A. K. Khaja Nazeemudeen D.Litt. (USA), Secretary and Correspondent, Jamal Mohamed College (Autonomous), Tiruchirappalli was the chief guest and delivered the valedictory address. Mr. M. Abdul Rahman (III B.Sc. IT), Vice-Chairman, VarIT-2k20 proposed a vote of thanks. The prizes and merit certificates were distributed to the first and second place winners.



Presentation Day

113 students attended the Presentation day for 3rd year CSE students of KRCE conducted by the student chapter of KRCE in association with the chapter and the dept. of CSE of the college. The event was conducted on 6th February 2020.

Hands on Training on Android Application

One Day Hands on Training on Android Application was organised by MZCET student chapter in association with our chapter on 06th February 2020. 50 participants attended the event.

Workshop on Block Chain Technologies



Dr. M. Joseph Paramasivam, Associate Professor, Bishop Heber College, Trichy enlightened the participants about block chain technologies in the workshop organised by the MIET students' chapter in association with Department of CSE and our chapter on 14th February 2020.

Code Battle

An event on Code Battle was organised by MZCET student chapter in association with our chapter on 19th February 2020. 75 participants attended the event.

TECHQUEST' 19

A technical symposium titled as Techquest 2019" was organised on 06th March 2020 by MZCET student chapter in association with our chapter on 19th February 2020. 75 participants attended the event and got benefitted by the lectures and other events.



TECHNICAL ARTICLES

Big Data Analytics

Er. M. J. Divya, BHEL

Definition of Big Data:

Wiki states that 'Big data is a field that treats ways to analyse, systematically extract information from, or otherwise deal with data sets that are too large or complex to be dealt with by traditional data-processing application software'.

Types of Data:

- ❖ Relational Data (Tables/Transaction/Legacy Data)
- ❖ Text Data (Web)
- ❖ Semi-structured Data (XML)
- Graph Data
 - ➤ Social Network, Semantic Web, ...
- Streaming Data
 - > You can only scan the data once

Six V's of Big Data:

The six Vs of big data

Big data is a collection of data from various sources, often characterized by what's become known as the 3Vs: volume, variety and velocity.

Over time, other Vs have been added to descriptions of big data:

VOLUME	VARIETY	VELOCITY	VERACITY	VALUE	VARIABILITY
The amount of data from myriad sources.	The types of data: structured, semi-structured, unstructured.	The speed at which big data is generated.	The degree to which big data can be trusted.	The business value of the data collected.	The ways in which the big data can be used and formatted.
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Big Data in Power Plants:

- ♣ The coal-fired power plant regularly produces enormous amounts of data from its sensors, control and monitoring systems
- ♣ The Volume of this data will be increasing due to widely available smart meters, Wi-Fi devices and rapidly developing IT systems
- ♣ Big data technology gives the opportunity to use such types and volumes of data and could be an adequate solution in these areas

Types of Big Data Analytics:

Descriptive Analytics - interpretation of historical data

"What happened?"

- ♦ Helps to compare and understand data from the past, for example, annual reports comparison, key performance indicators as mean time between failures or month by month upkeep costs sets
- **♣ Diagnostic Analytics** a way to determine factors and causes of a particular event.

"Why did it happen?"

- ◆ Can be used for example in fraud detection or to understand failures from historical data.
- **♣ Predictive Analytics** this type of analytics uses statistics and modelling to determine future performance.

"What can happen?"

- ◆ It can help to predict financial trends, create reliability models or foresee asset management issues
- ♣ Prescriptive Analytics simulates possible paths and gives the best option according to predicted results.

"What should we do?"

♦ Can calculate the potential economic profits from steam-boiler renovation



- **♣ Cognitive Analytics** uses advanced machine learning, cloud computing or artificial intelligence to give a real-time decision making aid
 - ◆ For example, can control in real time combustion process to achieve less nitrogen dioxide emissions

Potential Benefits of Using Big Data in Power Generation:

Asset Management

Asset management is a systematic process of developing, operating, maintaining, upgrading, and disposing of assets cost-effectively.

Performance Optimization

➤ Datasets coming from information technology systems and control systems used in the real-time analysis would constitute great feedback for operators controlling the production process.

❖ Data Analysis and Visualization

➤ Big data tools and techniques enable visualization and exploration of large volumes of data

Demand Response

➤ Gathering data from smart meters, social media, analysing consumption patterns enables us to predict the expected energy consumption.





Digital Image Processing Applications in NDT

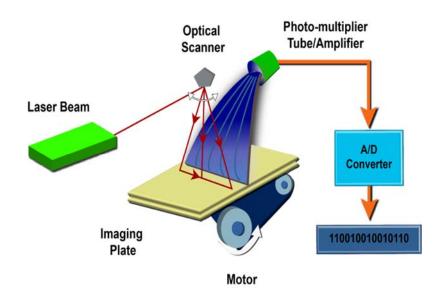
Er. V. Deepesh, BHEL

ABSTRACT:

♣ Digital image processing techniques are well known in a wide range of applications such as medical, low enforcement, space research, defence etc. However, in the case of conventional NDE for industrial applications, there has been only a sluggish shift towards the application of these technologies



- → The primary challenge has been the requirement of high sensitivity of NDE in the case of critical applications. However, the development in the field of materials, manufacturing processes, and electronics have led to the transformation of conventional NDE methods to advanced digital imaging technologies.
- ♣ These systems can significantly enhance the productivity and reliability of NDE methods by providing instantaneous and high quality digital images, which can be subjected to a wide range of operations for precise detection and characterisation of defects. However, care must be exercised to use these techniques appropriately as the wrong use may lead to severe quality issues.
- ♣ This lecture introduces the basic image processing applications in NDE, particularly in radiographic applications.



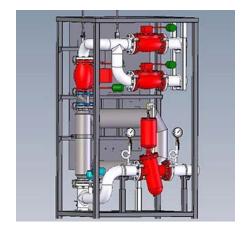


Petrol Depot Automation

Er. Thenmozhi Varman, BHEL

ABSTRACT:

Generally, Consumer vehicles are loaded from Fuel outlets with fuel like Petrol, Diesel or LPG. The Fuel outlets are loaded with Tank trucks filled through Terminal Automation System in Depot or Terminal. Fuels include Motor Spirit (MS), Diesel, Aviation Turbine Fuel (ATF), Naphtha, Superior Kerosene Oil (SKO), Furnace Oil etc.



- ♣ Integrated Terminal Automation System/Depot Automation System provides monitoring, control and management of the entire product handling process, right from receiving to storage and distribution.
- ♣ Depot Automation is a process in which a Supervisory Software System (Depot *Automation System*) automates certain manual processes in a terminal. Supervisory Software system consists of number of sub systems which perform validations in every stage from Entry to Exit of a Tank Truck (TT).

SCREENSHOTS:





PROUD MOMENTS

Awards Received at CSI Annual Convention 2020 16th to 18th January 2020 at KIIT University, Bhubaneshwar.



The best regional chapter award for the ninth time & consecutive 4th time since 2014-15



TEAM CSI TRICHY RECEIVE BEST REGIONAL CHAPTER AWARD



During the convention, our past chairman & Registrar of Bharathidasan University
Dr Gopinath Ganapathy conferred with the Honorary Fellow of CSI.



TEAM CSI TRICHY RECEIVED BEST CHAPTER
NEWSLETTER AWARD FOR THE 3rd
CONSECUTIVE TIME SINCE 2014-15



Dr. G. Annapoorani Professor, Anna University BIT Campus & CSI Trichy MC Won Best Paper Presentation - International Conference.



The Student Chapter of Mount Zion College, Pudukkottai won the Best Student Chapter Award and it was received by Mrs.Sangeetha



The chapter co-hosted the VARIT 2k20, the flagship event of Department of Computer Science of JMC along with the JMC student chapter on 30th January 2020. Dr.T. Abdul Razak Past Chairman CSI Trichy along with Management, Faculty & Students

On behalf of Computer Society of India, Tiruchirappalli Chapter, published by Er. D. Senthilkumar, Hon.Secretary, CSI, Tiruchirappalli Chapter Edited by: Er. N. Rajasekaran, Er. M.J. Divya, Er. D. Senthilkumar & Er. S. Lakshmanan. Feedback & Suggestions are welcome through E mail to: csitiruchy@gmail.com

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