

## Organizing Committee

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- Dr. R. Misra, Professor, Dept. of IT Engg, C.V. Raman College of Engg, Bhubaneswar

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### Registration fee - IUCEE Seminar Only:

Students(BTech/MCA/MSc/BSc)	Rs. 300.00
M.Tech/Research Fellow/Faculty	Rs. 500.00

### Registration fee - full Workshop:

Students(BTech/MCA/MSc/BSc)	Rs. 600.00
M.Tech/Research Fellow/Faculty	Rs.1200.00

**Please Register by 28<sup>th</sup> June 2014**

email: [nwphc2014@gmail.com](mailto:nwphc2014@gmail.com)

## National Workshop on Parallel Heterogeneous Computing Registration Form

Name:(In Block Letters)

Institute/Organization:

Designation:

Address for Correspondence:

Email and Mobile No:

Payment Details for : (Full Workshop / IUCEE Seminar Only) Please Tick

DD Number:

(DD to be made in favour of "C V Raman College of Engineering - Student BR. - CSI" payable at Bhubaneswar )

Bank Name:

Amount: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_

*Registration fee ( draft/cash) & updated  
Registration form to be sent to –*

Dr. Rachita Misra. Head, Dept of I.T,  
C.V. Raman College of Engineering, Bidyanagar,  
Janla, Mahura,Bhubaneswar-752054,.

### TECHNICAL COLLABORATORS



## NATIONAL WORKSHOP

ON

## PARALLEL HETEROGENEOUS COMPUTING

(Focus on Big Data Analytics and Machine  
Learning)

JULY 2-5, 2014



### ORGANIZED BY

CUDA Teaching Centre  
Department of Information Technology,  
C.V. Raman College of Engineering,  
Bidyanagar, Mahura, Janla,  
Bhubaneswar-752054

<http://cvrgi.edu.in>



## About C.V. Raman College of Engg.

C.V. Raman College of Engineering Bhubaneswar was established in the year of 1997 in the name of Nobel laureate Sir C.V.Raman with an objective to impart quality education and training leading to BTech, MTech, MBA and MCA. This college is an ISO 9001:2008 certified, and NAAC accredited technical institution approved by AICTE/UGC and affiliated to BPUT Odisha. It is situated in a lush green environment, 10 kms from Barmunda Bus stand, 17 kms from BBSR Railway Station & 15 kms from Biju Patnaik International Airport towards Khurda on NH-5.

## Outline and Objective of the Workshop

Despite the extraordinary advances in computing technology, scientists and engineers continue to need greater and greater computing power. High performance computing (HPC) is becoming a multidisciplinary research topic. The need for best computing power can be met through the use of Parallel Computers. Recent years has seen use of Parallel Systems with trends towards Heterogeneous Environment consisting of General-Purpose Cores and Acceleration Devices.

Heterogeneous Computing has impacted R&D work on Big Data Analytics, Data Mining and Machine Learning which are current research trends in Cloud Computing. Heterogeneous Cloud offers the potential to shift flexibly from one HPC architecture to another in a secure public or private cloud environment. This Workshop is designed to introduce the different aspects of Parallel and Heterogeneous Computing and the use of available Programming Interfaces (CUDA, Open CL). It

includes an IUCEE seminar orientated towards Cloud, Big Data Analytics and Machine Intelligence.

## IUCEE Seminar

- **Title: Parallel Heterogeneous Computing in Big Data Analytics and Machine Learning**
- **Speaker: Prof. Vemuri Venkataswara Rao.,** UCLA (University of California, Davis ), IUCEE Professor

Prof. Vemuri's research interests are in the areas of digital media, soft computing, neural networks, genetic algorithms, machine intelligence, digital communications, signal processing, simulation and modeling, data mining, and numerical methods. He is a senior member of IEEE, member of ACM, and an IUCEE professor. He has authored 4 books, edited 6 books and has authored/coauthored chapters in several books. His research paper publications in journals are more than 100. He has several honors and awards to his credit such as Meritorious Service Award for service as Editor-in-Chief of CS Press of IEEE, 1993, Cited for Best Reviewer of 1989, ACM Computing Reviews, Certificate of Appreciation for dedicated service as a member of the CS Press of IEEE Editorial Board, February 25, 1991. Among his other interests, he has won awards from Vanguri Foundation's for Creative Writing, Gopichand Award, Vamsee Art Theatres International, and Distinguished Public Service Award, University of California, Davis.

## Contacts for More Information

- **Mr. A.K.Sahoo:** 91-9861443456
- **Dr. R. Misra:** 91-94384 85177
- **email:** [nwphc2014@gmail.com](mailto:nwphc2014@gmail.com)

## Schedule of Program (2<sup>nd</sup> to 5<sup>th</sup> July 2014)

### Day-1:

- Registration: 2:00 PM
- Inauguration: 3:00 PM
- **IUCEE Seminar: ( by Prof. Vemuri, UC Davis)**

➤ Introduction to PHC

### Day-2: IUCEE Seminar Cntd.. 9 AM – 5 PM)

- Heterogeneous Computing from Multiple Perspectives.
- Introduction to Big Data, Heterogeneous Computing in Big Data Analytics
- Heterogeneous Computing Environments, Introduction to Map-Reduce/Hadoop
- Introduction to Machine Learning, Heterogeneous Computing in Machine Learning
- Discussion on Fruitful Research and Publishing results.

### Day-3: Parallel Processing using CPU-GPU

#### Architecture, CUDA Programming

( 11:00 AM to 4:00 PM)

- Introduction to General purpose computing using GPU, Introduction to CUDA C, CUDA Parallelism Model, CUDA Memory Model, Convolution, Constant Memory, and Constant Cache. GPU as Part of the PC Architecture, Data Transfer and CUDA Streams, CPU/GPU Cluster NVIDIA GPUs, An Overview of CUDA enabled NVIDIA GPUs; CUDA SDK/APIs; CUDA Toolkit & Libraries.

### Day-4: Case Studies, Performance Analysis

( 11:00 AM to 4:00 PM)

- Introduction to OpenCL, Open ACC, cloudSim, Demonstration on Parallel Processing, Performance analysis, Hands On exercises
- Closing