

This file has been cleaned of potential threats.

If you confirm that the file is coming from a trusted source, you can send the following SHA-256 hash value to your admin for the original file.

2c51df8673a1de17c7fdf07516c47f9a43284a7e1d84870bb47189a191b2d269

To view the reconstructed contents, please SCROLL DOWN to next page.

# Workshop on Embedded Controls & Software

In Technical Association with



13 - 15 May 2013



Organized by:

Advanced Technology Development Centre,  
Indian Institute of Technology, Kharagpur

## Overview of the Workshop

The workshop is intended to provide tutorial on fundamentals of embedded control and embedded software design. It will also cover the state of art in real-time systems, fault tolerant systems, model based designing, reconfigurable computing, image processing and modern control systems. Design, Analysis and Implementation of high quality, functionally accurate embedded software incorporating complex intelligent control mechanisms on Intel Atom processor based Boards using a wide range of software platforms.

Finally, the workshop will present applications of the embedded control and embedded software tools to problems in automotive, healthcare and industrial process control. This will address issues related to Performance, Power/Energy, Fault Tolerance, Real-Time Operations, and safety-Criticality. At the end of the course participants are expected to be conversant with cutting edge in embedded control and software. They will also be equipped to apply these techniques to real life problems. Several real life applications will be discussed by industry experts, professors and research scholars. After the end of the workshop the participants would be able to understand the use of this workshop in application areas such as: Transportation, Aviation, Process control, Defence and Space missions, Medical and Healthcare, Software operations, Industrial automation.

### Topics of interest include, but are not limited to:

- Principles of Embedded Control Design
- Embedded control Architecture from Theory to Practice
- Embedded Software Design
- Intel Atom Processor & Platform Architecture
- Embedded Software Validation
- Embedded Controls and Software Applications
- Fixed point implementation of Signal Processing algorithms on Embedded Platforms

To materialize above lectures there will be **Lab sessions** and **Project demos** on:

- Application of Signal and Image processing
- Intel Atom Boards
- Embedded Controls and Software Applications
- Reconfigurable Computing

## Indian Institute of Technology Kharagpur

IIT Kharagpur established by government of India in 1951 is the oldest of the IIT system. Among all IITs, IIT Kharagpur has the largest campus (2,100 acres) the most departments, the highest student enrolment and it is the most diversified of all IIT's.

As it was said by Pt. Nehru at the first convocation "Here in the place of that Hijli Detention Camp stands the fine monument of India, representing India's urges, India's future in the making. This picture seems to me symbolical of the changes that are coming to India". Driven by the same vision IIT Kharagpur strives to bring the changes to technical education. This workshop holds the same spirit of exploring new dimensions and bringing new meaning to engineering.

## **Advanced Technology Development Centre**

Advanced Technology Development Centre (ATDC), established in 1998, is an interdisciplinary research centre carrying out research in emerging areas that typically involve researchers from multiple disciplines and nice academic programmes at the postgraduate level.

Other than departments, several state-of-the-art research units of the Institute carry out research under the academic umbrella of ATDC. These include the Advanced VLSI Design Laboratory, MEMS Design Laboratory, Micro-Electronics Laboratory, Advanced Laboratory for Plant Genetic Engineering, Communication Empowerment Laboratory, Kalpana Chawla Space Technology Cell, Centre for Theoretical Studies, Microfluidics and Microscale Transport Processes Laboratory, GM CRL on ECS, P K Sinha Centre for Bio-Energy, Centre for Railway Research, etc. A large number of interdisciplinary research projects are carried out under ATDC.

### **Who Can Attend?**

Any Faculty member whose area of interest includes Embedded Systems, and any student who has completed or is in final year of his B.Tech./B.E or higher with Computer Science, Electrical or Electronics background with basic programming skills is preferable for the workshop.

### **Speakers and Lab Facilitators:**

- Prof. Amit Patra
- Prof. Aurobinda Routray
- Prof. Pallab Dasgupta
- Prof. P.P. Chakrabarti
- Prof. Rajib Mall
- Prof. S. Mukhopadhyay
- Speakers from Intel

### **Pedagogy:**

- Lectures will be delivered with the help of power point slides.
- Demos will be given by the experts followed by hands on session in Hardware and Software.

### **Number of Participants:**

30 (Thirty only), A pair consisting of one faculty member and one student will be preferable i.e. total 15 (Fifteen) pairs.

### **Course duration and Venue:**

Duration: 13<sup>th</sup> May, 2013 to 15<sup>th</sup> May, 2013

Venue: Gargi Auditorium, Vikramshila Complex, IIT Kharagpur

### **Registration fee and course materials:**

- There is **NO** course fee for participation.
- Lecture slides and Course materials (if required) will be distributed at the end of each day.

**TA:** No TA will be provided to the participants.

## **Accommodation**

Participants will be provided AC single room accommodation or AC Double room on sharing basis on payment basis (first come first serve) in Ashutosh Mukherjee Guest House/ Visveswaraya Guest House. The room tariff will be Rs. 300/- per day per person for single room and Rs. 200/- per day per person for double sharing room.

Participants will be provided food (Refreshments, lunch) during the Workshop session from 13th May to 15th May 2013. Also there are several restaurants and cafeteria on campus.

## **Important Dates:**

Last date for receiving Application: 10 April, 2013

Intimation to Participants latest by: 25 April, 2013

Confirmation by Candidates : 30 April, 2013

Starting date of the course: 13th May, 2013

Completion of the Course: 15th May, 2013

## **How to Apply?**

Interested participants have to fill an Online Form available here:

[https://docs.google.com/forms/d/1x8irsp3RUV0glWW3KVR\\_Jo0qYCxvm-ifW\\_DxzS8rE50/viewform](https://docs.google.com/forms/d/1x8irsp3RUV0glWW3KVR_Jo0qYCxvm-ifW_DxzS8rE50/viewform)

And email their Resume to the email id given in the address of correspondence.

Interested faculty members are requested to choose their own student and make pair themselves and both the participants have to fill separate application form with their Resume attached.

**Note:** Application form without Resume will not be accepted.

## **Selection Process:**

Based on your resume 30 candidates will be shortlisted for the workshop. All applicants will be intimated by email whether they are shortlisted or not. If you do not receive an email please contact us to know your status after 25th April, 2013.

All selected participants have to confirm whether they are attending the workshop by 30 April, 2013 otherwise other applicants will be given chance.

## **For any queries please contact:**

Prakhar Srivastava

Mob: +91-7407653011

Email: prakhar@atdc.iitkgp.ernet.in

Nikhil Agrawal

Mob: +91-7602087675

Email: nikhil.agrawal@atdc.iitkgp.ernet.in

Bhupendra Kharpuse

Mob: +91-9093924499

Email: bkarpuse@gmail.com

**Address for Communication:**

Dr. Pallab Dasgupta  
Professor, Computer Science & Engineering  
Indian Institute of Technology, Kharagpur, W.B.-721302

Email: [prakhar@atdc.iitkgp.ernet.in](mailto:prakhar@atdc.iitkgp.ernet.in)