

**Department of Computer Science
& Engineering
National Institute of Technology
Patna**

Proposes
A Workshop
On

**Learn to Understand, Analyze,
and Verify Large Software**

(Co-event of ACSS 2017: <http://acss.nitp.ac.in>)

Duration: 20/03/2017 to 22/03/2017

Sponsored by TEQIP II



Patron

Prof. (Dr.) Asok De
Director, NIT Patna

Workshop Coordinators:

Dr. Akshay Deepak*

Dr. Prabhat Kumar⁺

About NIT Patna

National Institute of Technology Patna is the 18th National Institute of Technology created by the Ministry of H.R.D. Government of India after rechristening the erstwhile Bihar College of Engineering Patna on 28. 01. 2004. The institute has highly qualified faculty of higher caliber in various disciplines. Institute offers B.Tech, M.Tech & Ph.D. programs in respective field of Engineering, National Institute of Technology Patna aims at setting out very high education standards and holds long record of academic excellence in Sciences and Technology with well-equipped laboratories.



**About Computer Science &
Engineering Department**

Department of Computer Science and Engineering (CSE) started in 2005 with Bachelor Course in Computer Science & Engineering. First Ph.D. enrolment was done in 2009 with two students. In 2011, M.Tech in CSE was started. Later in 2013, Department of Information Technology and Computer Science & Engineering were merged and is now known by the name of department of CSE. Currently, the Department has two B.Tech. Programs (i) B.Tech. (CSE) (ii) B.Tech. (IT), and two Master Programs, (i) M.Tech (CSE) (ii) M.Tech. (IT) and Ph.D Program.

Course Objective

To introduce a new paradigm to reason about large software and how to manage its complexity using a graph-based human-in-the loop approach.

Topics Covered

(Through lectures and lab sessions)

- An introduction to a new way of thinking about software problems.
- The practice of experiential learning – discovery, design, action, and reflection.
- The use of a graph-theoretic program analysis platform to understand and analyze large software.
- An introduction to fundamental software analysis principles and their practical use.
- An introduction to systematic problem solving using 5000-line operating system C code.
- An introduction to how a graph-theoretic program analysis unifies fundamental principles and systematic problem solving for procedural as well as object-oriented languages.
- A capstone lecture: applying the lessons learnt to a Linux verification problem.

Course Outcomes

- Theoretical understanding and practical application of graph-based human-in-the loop approach for reasoning about large software
- Usage of Atlas tool and library for visual and graph-based analysis of JAVA/C++ code.

Key Expert

Dr. Suraj C. Kothari, Richardson Professor,
Electrical & Computer Engineering
Department, Iowa State University, USA

Assisted by:

- **Payas Awadhutkar**, Ph.D. student, Electrical & Computer Engineering Department, Iowa State University, USA
- **Dr. Akshay Deepak**, NIT Patna

* Assistant Professor, Dept. of CSE, NIT Patna

⁺ HOD, Dept. of CSE, NIT Patna

Course Fees

- ₹ 2000/- for faculty and industry professionals
- ₹ 1500/- for Students and Research Scholars from other academic institutes
- ₹ 1000/- for Students and Research Scholars from NIT Patna

Fees is to be paid through demand draft payable at Patna and in the name of

The Director, NIT Patna

Participants from NIT Patna can also pay registration fees in cash.

The completed registration form along with the draft should be send to

Dr. Akshay Deepak

Asst. Professor,

Dept. of CSE, NIT Patna,

Ashok Rajpath, Mahendru

Patna -800005, Bihar

Last date of Registration

15th March 2017

Workshop Website

<https://goo.gl/uvaeXb>

(All further details will be made available on the website)

For query, contact:

Dr. Akshay Deepak (akshayd@nitp.ac.in)

Dr. Prabhat Kumar (prabhat@nitp.ac.in)

Venue: NIT Patna

How to Reach NIT Patna

The institute is situated on the south bank of holy river Ganga behind Gandhi Ghat. The Institute campus is 8 km from the Patna Junction railway station and 15 km from the Jai Prakash Narayan International Airport Patna.



Workshop on “Learn to Understand, Analyze, and Verify Large Software”

March 20th to 22nd, 2017

1. Name: _____

2. Educational Qualification: _____

3. Designation: _____

4. Name of the institute: _____

5. Address for Communication: _____

6. E-mail: _____

7. Phone: _____

8. D.D No.: _____ Date: _____

Bank name: _____

Amount (Rs.) _____

Date

Signature