SREE VIDYANIKETHAN ENGINEERING COLLEGE

(Autonomous)

Sree Sainath Nagar, Tirupati-517 102, A.P., India.

Department of Informational Technology

AICTE Sponsored Two- Week National Level Faculty Development Programme

on

Challenges and Current Solutions of Cyber Physical Systems (CCSCPS)

11th to 23rd December, 2017

A Two Week AICTE sponsored national level faculty development program(FDP) on **Challenges and Current Solutions of Cyber Physical Systems** was organized by the Department of Information Technology from 11th December to 23rd December, 2017. All the sessions were handled by eminent speakers from academia and industry. The FDP programme received an overwhelming response with 70 participants from various states like Andhra Pradesh, Telangana, and Karnataka. The FDP aimed to provide opportunities to faculty members and research scholars to enrich their teaching skill and research in the field of Cyber Physical Sytems. The programme was also planned to develop skills on simulation with advanced software in the field of Cyber Physical Systems for inculcating learning values in participants.

The two week AICTE Sponsored national level faculty development program was inaugurated by the following eminent personalities on 11th December 2017.

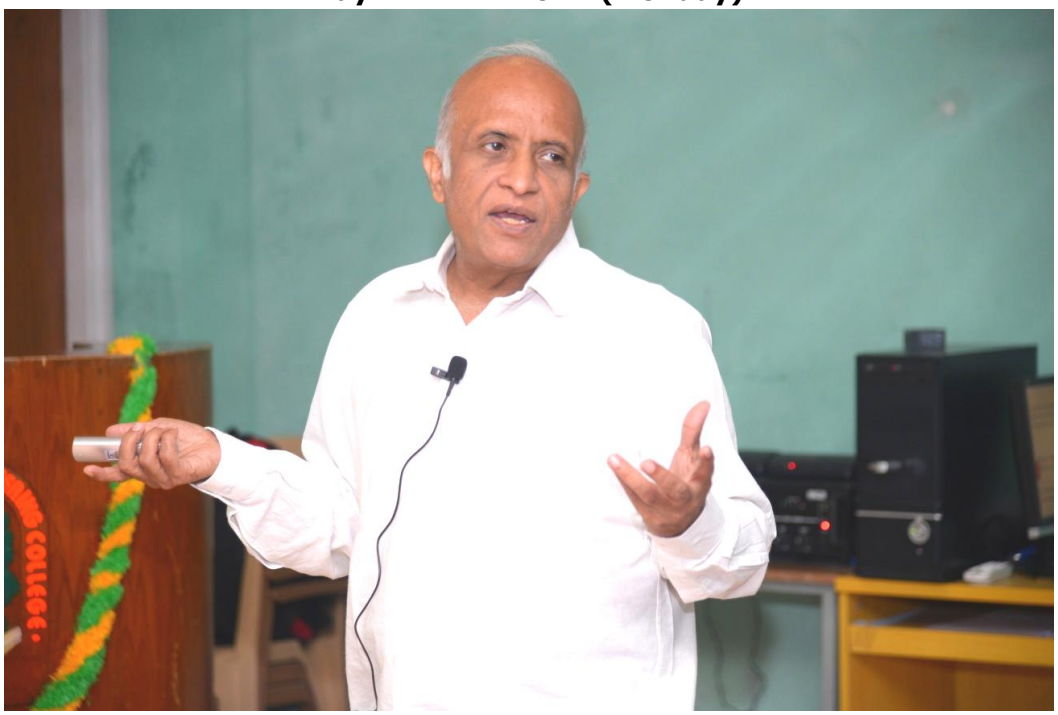
1. Prof. T. Gopala Rao, Special Officer, Sree Vidyanikethan Educational Trust.
2. Dr. I. Sudarsan kumar, Chief Operating Officer, Sree Vidyanikethan Educational Trust.
3. Dr. P.C. Krishnamachary, Principal, Sree Vidynaikethan Engineeing College.
4. Prof. C. S. R. Prabhu, Director, KMIT, Hyderabad.

Dr. K.Ramani, Coordinator of FDP welcomed all the dignitaries and participants. In the welcome speech, Prof T. Gopala Rao, Special Officer highlighted the objectives of the faculty development program and shared his views with the faculty participants. He said that, if members of faculty want to develop themselves and their students, then attending such faculty development programmes would enhance their skills of teaching concepts practically. Dr. I. Sudarsan Kumar, Chief Operating Officer stressed on the current trends in technical education and need of adaptability with the changing global

tends across the world. Mr. P.C Krishnamachary, Principal of Sree Vidyanikethan Engineering College appreciated the department of IT for organizing such a program and welcomed the enthusiastic participants. The chief guest of the inaugural program Prof. C. S. R. Prabhu, Director of KMIT, Hyderabad explained the outcomes from mismatched technical education and industry demand with the help of various examples globally. He also emphasized the benefits of such kind of ingenious activity.

Dignitaries on the Dias during Inauguration

Date wise brief Report of Technical Sessions
Day-1:11-12-2017 (Monday)



Prof. C. S. R Prabhu Director, KMIT, Hyderabad delivered a lecture on 'Introduction to Cyber Physical Systems and System Design Methodologies for Cloud-assisted Large-Scale Cyber Physical Systems' and 'Fog Computing in Internet of Things'. He inspired the participants to work on real time and also gave some guidelines for it.

Dr. S. Selvakumar, Professor, NIT, Trichy, delivered a lecture on 'Security Challenges and Solutions in Cyber Physical Systems'.

Dr. K. Kanchana, Associate Professor, SSN College of Engineering, Chennai, delivered a lecture on 'Cyber Physical Systems and IoT for Smart Governance'.

Dr. K. Ramani, Professor & Head of IT department, SVEC, Tirupati, delivered a session on 'Case studies of Cyber Physical Systems'. The interactive session was very informative. Participants were enlightened with the most widely used advance tools and technologies.

Day-2:12-12-2017(Tuesday)

Dr. Krishna moorthy, Professor, VIT University, Vellore, delivered lecture on 'Theoretical Foundations of Monitoring of IoT-based Cyber Physical Systems' and did practical demo on 'How Internet of Things Works'.

Dr. K. Khaja Baseer, Associate Professor, Department of IT, SVEC, took a session on 'Industrial Internet of Things' and 'IoT based Industrial Applications'.

Day-3:13-12-2017(Wednesday)

Dr. V. Saritha, Professor, Department of CSE, SVEC, Tirupati, handled a session on 'Understanding Principles of Cyber Physical Systems'**.**

Dr. N. M. G. Kumar, Professor of EEE Department, SVEC, Tirupati, delivered a lecture on 'Cyber Challenges in Smart Energy Meters'**.**

Mr. A. Srinivasulu, Associate Professor of IT Department, SVEC, Tirupati handled a session on 'Big Data Applications for Cyber Physical Systems'.

Day-4:14-12-2017(Thursday)

Dr. S. Magesh, Professor, Saveetha University, Chennai, delivered a session on 'Cyber Physical Systems – Scope of Research'.

Dr. K. C. Vara Prasad, Professor of ME Department, SVEC, Tirupati, delivered a lecture on 'Industry 4.0 and Software Defined Industrial Systems-Protocols'.

Day-5:15-12-2017(Friday)

Mr. T. Sivarama Krishna, Assistant Professor, JNTUK, Vizayanagaram, delivered a session on 'Introduction to IoT Eco System and its Components'.

Dr. K. C. Vara Prasad, Professor of ME, SVEC, Tirupati, handled a session on 'Software Defined Industrial Systems – Automation and Security for IIoT'.

Day-6:16-12-2017(Saturday)

Mr. T. Sivarama Krishna, Assistant Professor, JNTUK, Vijayanagaram delivered a session on 'IoT Security – Challenges and Research Ideas, Working with Raspberry Pi-3 (Hands-on Session)'.

Dr. K. Sarulatha, Professor of CSE, Pondicherry Engineering College, Puduchery, delivered a lecture on 'Cyber Physical systems using Machine Learning Technologies.'

Mr. G Hemanth Kumar, Assistant Professor of EIE, SVEC, Tirupati, handled a session on 'Sensor Technology and Automotive Applications'.

Day-7: 18-12-2017(Monday)

Mr. G Hemanth Kumar, Assistant Professor of EIE, SVEC, Tirupati, delivered a lecture on 'Device to Device Communication in IoT and Protocols in IoT'. He also demonstrated two IoT based Real Time projects.

Dr. O. Obulesu, Associate Professor of IT Department, SVEC, Tirupati delivered a session on 'Big Data Applications for Cyber Physical Systems'.

Day-8: 19-12-2017(Tuesday)

Dr. M. Rajasekhara Babu, Associate Professor, VIT University, Vellore, delivered a lecture on 'Energy Aware Internet of Things'.

Dr. L. D. Dhinesh Babu, Associate Professor, VIT University, Vellore. delivered a session on 'Big Data Analytics for Cyber Physical Systems' and 'Open Source Tools with Case Studies'.

Dr. V. Madhu Viswanatham, Associate Professor, VIT University, Vellore, handled a session on 'IoT Security and Cyber Security – Block Chain'.

Dr. Narendra Kumar Rao, Professor and Head of CSSE, SVEC, Tirupati delivered a lecture on 'Software Platforms for Cyber Physical Systems**'.**

Day-9: 20-12-2017(Wednesday)

Dr. Mohammad Zafar Ali Khan, Professor of ECE, IIT, Hyderabad delivered a lecture on 'Communication Challenges in CPS'. He shared his knowledge with participant using various techniques. These techniques created interest among the participants and also made the subject matter easily comprehensible.

Dr. Venkata Krishna, Professor of School of Sciences from SPMVV, Tirupati, handled a session on 'Cyber-Physical Applications to Healthcare, Big Data Analytics for CPS'.

Day-10: 21-12-2017(Thursday)

Mr. Srinivasa Kongara, Infosys, Bangalore, delivered a lecture on 'Microsoft Azure for IoT, IoT Hub Device Provisioning Service'.

Dr. Noor Mohammad, Assistant Professor of CSE**,** IIIT, Kanchipuram, delivered a lecture on 'Machine Learning Experimentation, Practical Session'.

Day-11: 22-12-2017(Friday)

Mr. Vegesna Siva Mani Srinivasa Varma, Dept. of CSE**,** IIIT, Kanchipuram delivered a lecture on 'Security Threats, Vulnerability and Physical Realization of IDs Systems**'**.

Dr. Noor Mohammad, Assistant Professor of CSE**,** IIIT, Kanchipuram delivered a lecture on 'Cyber-Physical Applications to Energy & Environment.

Day-12: 23-12-2017(Saturday)

Dr. Srinivasa Reddy Professor of CSE**,** JNTUH, Hyderabad, delivered a session on 'Sensing Technology with Cloud and Mobile, Cyber Security Challenges'**.** In this session he gave assignment to all members of faculty. All members of faculty responded well to this assignment.

Mr.Rajesh Ekkaladevi, Asst. Professor, Centre for Cyber Forensics & Information Security at JNTUH, Hyderabad, delivered a lecture on 'Cyber Security in CPS and Validation in Cyber Physical Systems'. He also explained the simulation of IoT applications with various IoT kits.

Valedictory Function

The honorable personalities present in the velidictory of FDP were Dr. Srinivasa Reddy Professor of CSE, JNTUH, Rajesh Ekkaladevi, Cyber Forensics & Information Security at JNTUH, Dr. D.V.S Bhagavanulu, Director of SVEC.

The Coordinator of the FDP Dr. K. Ramani concluded the program with closing remarks and summarized the program. All the dignitaries present on the occasion appreciated the department for organizing the FDP. Certificates and course material were distributed to all participants. Finally the participants were asked to come on the dias and share their experience of the whole program. The program was ended on a happy note.

Dr. K.Ramani, Coordinator, delievering the closing remarks.

Mr. S.Suresh Babu participant from NBKR College, AP expressing his gratitude to the organizers for providing content rich sessions.

Mr. P.Sivaraman participant from SVECT, Chittoor, AP, apprecing the organizers for conducting such programs.

Dr.N.Padmaja, participant from SVEC during feedback session.

The following feedback was received from the participants:

1. 95% of the participants felt that delivery and presentation of the resource persons were good.
2. 90% of the participants were of the opinion that the FDP brought practical knowledge of the subject.
3. 90% of the participants felt that the FDP was coordinated very well.
4. Participants felt that such FDP should be organized for other subjects in the field of Computer Science and Information Technology.
5. More than 75% participants rated the FDP Excellent and 25% rated it Very good.
6. Someone mentioned it as a motivation for the development of CPS based projects.
7. Participants felt that the boarding and lodging facilities were highly satisfactory.
8. Some participants felt that more activity based sessions could be included.

9. One participant expressed that a few more case studies should have been included.

Certificate Distribution to Participants.

Outcomes:

All the sessions were very informative. This FDP helped in equipping the participants with knowledge and skills in Cyber Physical Systems. The discussed areas are of great benefit for the participants as the topics match with the current working domain. Participants were enlightened with the most widely used advanced technologies in this domain. This in turn will help in research activity. The content knowledge of the given participants in

the respective domains is updated. The participants were also given some exercises regarding the lecture of program. Last but not the least when the house was open for questions the participants were keen to ask and with the same level of enthusiasm they were justifiably answered by the expert speakers. This FDP will not only helped the participants in their curriculum and but also helped them to upgrade their knowledge and skills in the area of Cyber Physical Systems to motivate and guide students for development of CPS based projects.

Group Photo

Participants of CCSCPS

We are thankful to all participants, speakers, who have attended this FDP enthusiastically without them our FDP couldn't be successful. We are thankful to AICTE for sanctioning the amount to conduct such programme. We extend our thanks to management, teaching and non teaching staff who helped us to make this event a grand success.