



NEWSLETTER

Contents:

- Editor's Note
- A Talk with our HOD
- Creative Space
- Interns' Experiences
- Sensors '14 Report
- Our New Mission and Vision
- Tech Talk- Smartphones
- Interest Groups' report
- The Yokogawa addition



Editor's Note

It is with great pride, we present you the third edition of ICEA's Newsletter which also happens to be the first this academic year. The ICEA will kick start its activities with the inauguration in September, in the presence of eminent personalities. ICEA's vision was to stand out from others with varied activities benefiting students all around the year. Last year ICEA had done a commendable job in initiating many innovative activities & successfully organizing the department's mega symposium "Sensors". A brief report on Sensors 2014 is documented in this edition. Entering into the second year of ICEA Newsletter, We are looking forward to bring you all, the best this year. This year, our team has planned a series of interviews with our esteemed professors of department. First in this series is the interview with our Head of Department, Mr. Sivakumaran. We have penned down his interview for you all in this edition. Our department students have done interesting & coveted internships in diverse fields. In this edition we bring you out the intern experience, which we strongly believe will be a guide to many of our juniors. ICEA last year was able to make an impact on the student community & was applauded with rich accolades from the faculty. We had solicited a well-known professor, who was pro-active in the nation mission for education, for delivering the much applauded guest lecture. ICEA then moved out to fulfilling its mission, reaching out to the student community of the department in a composed & informal way. To boost up the morale of the students & increase the confidence levels of the students who want to move right on to jobs after graduation, we came up with an innovative initiative "Interns Speak". This brainchild of ICEA was aimed at mingling seniors with prior industry experience & those seniors who secured internships on-campus with juniors in a bid to clear their doubts on varying topics & give them a sneak-peak of what lies ahead for them. This initiative which was met with an overwhelming positive response will be continued this year along with a plethora of other innovative & useful activities including the trademark workshops & seminars.



Updates on latest technologies are included in this edition. One of the new additions this year is the student's corner in which anything can be put up. We strongly believe creativity has no boundaries & we encourage it. We are satisfied with the progress till date but limiting ourselves to certain things undermines the capabilities of the ever-energetic students of ICE Department. Therefore, we will take forward the activities from last year with renewed energy & focus with a new team. ICEA takes this opportunity to thank all the students of ICE, who helped them in all the activities & patronized the events till now & we seek your unflinching co-operation in the future as well. In the same breath, we request the continued support of our wonderful faculty to take forward our activities.

I end this note thanking Mr. Sivakumaran, H.O.D of ICE for his kind words and Mr. Goldin R Bennet, Associate Professor, ICE for his constant encouragement. I would take this opportunity to introduce the office – bearers of ICEA 2014 in this edition & I wish them all luck for their endeavors. Entering into second year of our newsletter, I had a tough task of putting together a team. After seeing their efforts, I am proud to have such wonderful people as colleagues. I thank the entire newsletter team. We will be back soon with the next edition. Comments, Suggestions, Reviews are highly appreciated. We are open to all of them.

-JAYANTH PARCHURI

A talk with our HOD



Q1: Sir, The academic year 2014-15 has just started. What is your message to the first year students and to ICE students, in particular?

Ans: First of all, I welcome all the first year students to the family of NIT, Trichy. Hopefully, these four years of their lives will be cherishable to each one of them. In this increasingly industrializing nation, it is imperative that the budding engineers align themselves towards industrial needs. At the same time, make it a point to take part in many activities to transform your personalities greatly.

Q2. There has been a perception that the academic curriculum from this year onwards is going to be substantially revamped. Can you throw some light on that?

Ans: That such a revamp is work-in-progress cannot be denied. All the suggestions by the passed out students and a careful analysis undertaken by Industrial advisors culminated into concerted efforts on the part of the administration to kick-start the process.

Q3. Ever since the birth of ICE Association, it has been acting as a cohesive force between alumni, students and the teaching staff. How has been your association with ICEA? Any suggestions to improve upon grey areas regarding the functioning of ICEA?

Ans: My Association with ICEA dates back to its very inception. It has nothing been short of an engaging and memorable association. ICEA has been able to galvanize all the stakeholders, namely the alumni, students and the teaching staff. The ICEA deserves special appreciation for carrying out various activities. That having said, I believe ICEA needs to conduct many more events. I reiterate it would a commendable job on the part of ICEA if it would ensure students align themselves towards surging industrial needs.

Q4. ICE department, from the outset, has seemingly undergone a drastic change. What are the improvements in the infrastructure and lab equipment, if any, that have transpired of late?

Ans: It is true that a remarkable change has transpired of late. Worthy of mentioning is the induction of a new YOKOGAWA DCS into the Industrial Automation lab.

Q5. Sensors, the annual technical fest of ICE department, has been increasingly grabbing the spotlight. Sensors-2014 has, arguably, been a great success. Having said that, can you suggest ways to improvise from the existing financial constraints to make the future editions of sensors fare better?

Ans: It is a matter of immense pride and jubilation that sensors-2014 has been a great success. All those who made it an enviable fest deserve a pat on their shoulders. The financial assistance, I believe, is going to grow with each successful edition. The Sensors team needs to learn from experience to improvise from the financial constraints. However, I would personally like addition of more guest lectures to sensors schedule.

Q6. A debate has been kick started regarding departmental versus global electives. What is your personal take on that?

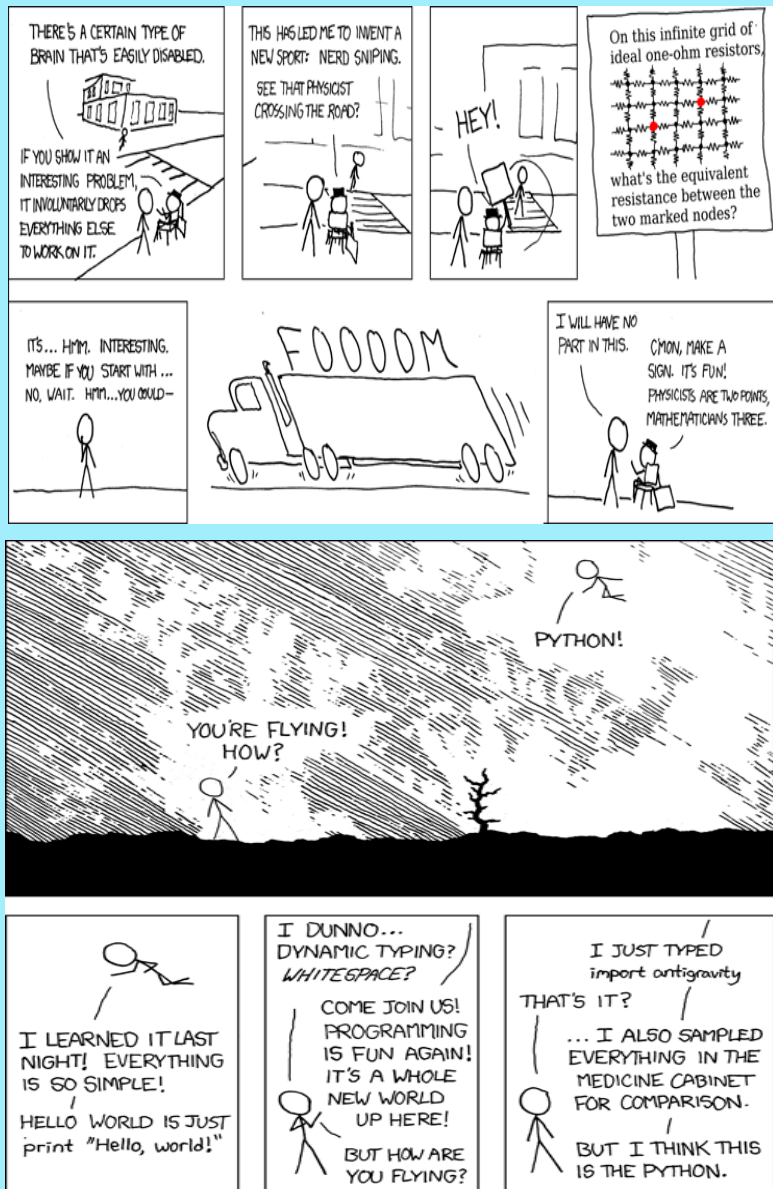
Ans: An interesting question, I must admit. I personally prefer global electives over the departmental ones as global electives enable students to gain a wider knowledge and aid them in being skillful apart from the core curriculum.

Q7. What are the main challenges that confront you as the HOD of ICE? What do you resort to during such situations?

Ans: As a matter of fact, it is extremely challenging and a daunting task to hold the positions of responsibilities, namely both as HOD of ICE department and TEQIP. I enjoy being pushed to the edge. I work with commitment. My desire to relentlessly work for the welfare of ICE department propels me to run that extra mile. I shall always work earnestly and to the best of my abilities strive for the welfare of ICE department.

**-DINESH JADAV WITH
DR.N.SIVAKUMARAN**

Creative Space



-VENKITACHALAM R

It was raining heavily; the sun was hidden behind the fiery clouds. The train stopped. It was a short ride, two hours travel from the station I boarded. I settled down in an almost empty compartment. Seated facing me was a well-dressed gentleman. The weather was insane. Even as I got up to close the windows, the gentleman asked me in a gentle tone, "what do the rains mean to you?". A change of weather maybe, more chillness & nice to get drenched but it brings with it the common cold. Various thoughts were traversing my mind, when he spoke, "It means Music, and it means a dance of nature in a lyrical way". Music? "This guy must be stupid & crazy", I spoke to myself. "I may be stupid, but not crazy", he chuckled. I stood frozen. This guy must have supernatural hearing powers. He looked out of the window & went on "Do you see that tree outside? Let me explain you a bit. The cloud conceives the rain drop, the pain is similar to what our mother's went through to give us birth. The drop travels long, falls down, collecting whispers & secrets of the god's & humans' alike. It strikes the topmost leaf, making its first kiss. That my friend, is the first lyric of bliss. It drips down through the branches without seeping in the wood, that sound my friend is the drum beat of character & resilience. The drop reaches down to the bottommost leaf, it encircles it one time, signifying the lyrics of its last stage, then the leaf bows down a little giving the drop to the thirsty bird, that sound is the beat of the ultimate sacrifice, the lyric of you fading away for helping someone needy. The nature gives us such wonderful gifts, I love the rain, one of its best gifts", he concluded before covering himself & drifting into sleep. I was processing the information while the coldness made me draw up my blanket & I too drifted into sleep.

Two hours later I woke up to the sound of someone whispering. My station was approaching; the weird guy had a companion. The companion wrapped up his friends things & was helping him walk. This guy smiled & gently withdrew his hand. He drew up his walking stick & started walking towards the door firmly tapping his way with his stick. The rain stopped, but his music stayed with me.

-JAYANTH PARCHURI

A letter to MITACS Aspirants



“Hello there!”

Before you read through this, let me give a brief introduction about Mitacs and myself, so that it will be easier for you to click a connection. There it goes: Mitacs is a non-profit organization that facilitates research opportunities for foreign students (from its partner countries) in Canada. Globalink is one of its many programmes that funds undergraduates in pre-final year to work on projects of choice in Canadian universities. To tell a few words about myself, I applied for Mitacs Globalinks' Summer14 internship last year and got the opportunity to work on Wireless Sensor Networks and Cold Weather Monitoring at Memorial University of Newfoundland-St. John's, under the mentorship of Dr. Lihong Zhang. Now, as an alumna of Mitacs, I want to share my knowledge and experience gained from the other side of the world.

I believe you are aware that Globalink has opened its portal for Summer15; Hasten the process of filling out the application, as the (extended) deadline is September 29. To make this letter as concise as possible, I am going to restrain myself from getting into the technical details, because you can find them anytime on their website. So, what I am going to do now is take you on a quick walk through the memory lane of my 3 months stay at St. John's, Canada.

The Journey

After completing the end semester exams in early May, I had just three days time to shop and pack my luggage. My biggest challenge was to find winter clothing during summer, as Google said St. John's was still frozen. With much anxiety about keeping my passport and belongings safe, I began a 27 hours long journey with 2 transits. The sinking feeling of leaving home and homeland was gripping me, too. But to my surprise, the entire journey from Chennai to St. John's, via Frankfurt and Toronto was as smooth as it could be for a first time traveler.

The biggest mistake that I did was to step out of St. John's Airport without winter apparels, when the temperature was a shuddering sub-zero digit.

The Work

The atmosphere there was relaxed and motivating. I used to have weekly meetings with the professor and his team of PhD students. The students' diligence and capacity for research inspired me and made me much more dedicated towards my work. My project instructor himself was an active person; never have I seen him consume even a second of time for what was not purposeful.



Interns'
Experiences-
MITACS Globalink

The Friends

I didn't expect to meet these amazing people when I began my journey. We were a group of five, who would meet in the communal kitchen during supper time and share cultural knowledge from all over the world. Brazil, Canada and Germany are three other countries that I am familiar with, apart from my own India. Together, we explored the hills, thickets, creeks and trails of St. John's; grocery shopping and cooking made us feel like a family.

And, I was lucky to meet a lot of people from various other countries, too. Chit chats with them gave me an insight into the lives of people in different communities of the world; finding similarities and differences gave me a better understanding of my own culture.

Now, I will be listing out things that you can do and that you shouldn't do when you are abroad for an internship, Canada especially.



Do's and Don'ts

1. First of all, get your passport and Visa ready well ahead in time to avoid any last minute hassle. Do them systematically when you get thumbs up from Mitacs.
2. Connect with other interns who will be going to the same university; networking and info sharing helps.
3. Buy adequate amounts of Indian masalas and snacks, because you will definitely start craving for Indian food.
4. After you reach, be accommodative to the cultural and language differences. Trust me; it wouldn't take more than a week to reconcile with the culture shock.
5. You earn in dollars, you spend in dollars. So, there is absolutely no necessity to convert CAD to INR for buying essentials.
6. Gain experience through experiments; explore the city and enjoy the multiculturalism.
7. Adhere to the rules and restrictions laid by Mitacs and your host university; avoid trouble.
8. Work hard, show perseverance—who would not like to be in the good books of the professor!
9. Stay connected with your project mentor, senior research students and friends even after the internship period ends. Networking always has its advantages.

Sensors '14 report



Sensors 2014 was a three day mega event inaugurated on March 14, 2014. It was organized between March 14, 2014 to March 16, 2014. It was a stupendous success with footfalls from over 50 colleges & the number of registration crossing an unprecedented & staggering number of 1000. Sensors – 2014 saw many events, workshops & guest lectures organized over the three days.

The four workshops were a major success. A brief sneak peak of them:

Flight Instrumentation

> Demonstration

1. Servo mechanism (Control surface actuation)
2. Gyro (Mechanical and electronic)
3. Receiver Transmitter (Working)
4. Electronics (Brush less motor, ESC connections and working)

Robotics Self Balancing BOT

> Development of Robot model, based on requirement of real world problems.

Material selection (Robustness) and stability analysis.

>Introduction to AT MEGA 328 Board:

Power Management - voltage and current regulation.

Interfacing some of the Advanced sensors with ATMEGA 328 Board:

- Potentiometers and servos
- Distance measurement sensor
- PIR motion sensor
- 9-axis orientation sensor
- Brush-less DC motor with ESC
- Motors speed measurement
- GPRS module

Bio-Medical Instrumentation

> Introduction

Sensors and transducers used for diagnosis.

- ECG
- EEG

MRI

PCB Designing Workshop.

> Installation and Program Start

- Individual EAGLE Setup
- The Concept of the EAGLE User Interface
- Using Libraries
- Drawing a Schematic
- Designing a PC Board
- Designing a Board without a Schematic
- Auto router, Routing Manually
- Output of Drawings and Manufacturing Data
- Script Files

Apart from that Sensors saw many competitions & interactive events apart from paper presentations & guest lectures from eminent personalities. The workshops were solicited with huge response & accolades were poured on the entire team of Sensors 2014.

Our New Mission

To constantly strive to make this department a world class school in Instrumentation and Control Engineering

Our New Vision

- To provide high quality education which inspire the students to realize their aspiration and potential.
- To enhance knowledge, create passion for learning, foster innovation and nurture talents towards serving the society and the country.
- To encourage faculty members to update their knowledge and carryout advanced research in cutting edge technologies
- To exhibit excellence in research projects and consultancy services, for the benefit of the global community

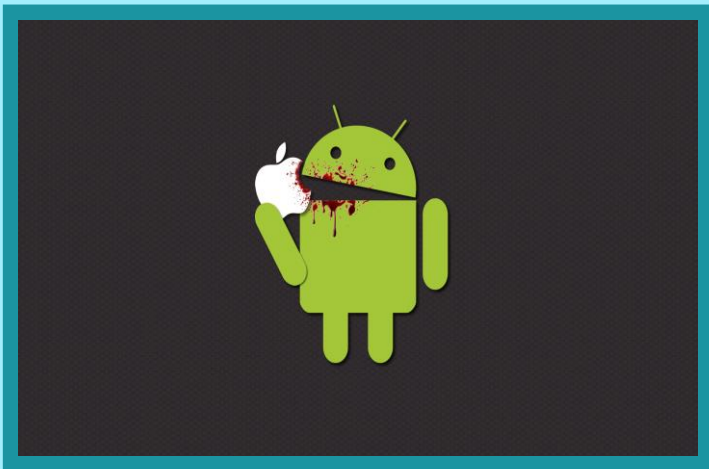
Smartphone Talk

Battle of the Operating Systems

Who doesn't love smartphones? They are a vital part of the life of every person today, but most importantly, they're really cool. And with the astronomical boom in the smartphone industry over the last decade, almost everybody wants one, or even has one. The demand for smartphones seems unrelenting, it keep rising as long as companies keep manufacturing them, and as the demand rises, more aggressive is the technology advancement. This cycle is what fuels the smartphone industry and is expected to fuel it for a long time to come.

As people's interest and demand surged, more and more companies began noticing the opportunity to come up with their own phones and even their own operating systems. Today, three major operating systems exist: iOS, Android and Windows Phone. As expected, iOS and Windows Phone are proprietary softwares belonging to tech giants Apple and Microsoft respectively. On the other hand, Android is designed and developed by Google, but it is free to individual developer alterations. That's why we see different versions of it on Samsung's Galaxy series, HTC's One series and Sony's Xperia series.

The smartphone as we know it today was first introduced by Apple, with the iPhone. Since then, many companies have joined Apple in the quest to create the perfect smartphone, the most notable ones being Google and Microsoft.



A chocolate bar over an expensive fruit?

With the introduction of Android 4.4 'KitKat' and the so called 'Material Design', with the Android L developer preview, Google leapfrogged Apple's iOS and took the smartphone industry by storm. Microsoft proved that it is not far behind either by releasing Windows Phone 8.1, which introduced Cortana, a voice assistant that rivaled the likes of Siri and Google Now. And now Apple is the one that is struggling to keep up as the introduction of the new iOS 8 couldn't reach the expectations.

Amazon, the retail giant, made its very own foray into the smartphone industry recently, by announcing the Amazon Fire Phone with its so called unique Fire OS, but it later turned out that the Fire OS was just a modification (a blatant rip-off if you will) of Android. Although the phone had some cool features, like 24/7 customer support directly from Amazon, it couldn't stand up to the likes of the HTC One M8 and the Nexus 5.

So where does the future of the smartphone lie? Modular smartphones are the talk of the town nowadays. Smartphones, of which each part, such as the battery, the display, the camera, almost everything, can be customized or replaced to the owner's liking. Will it be a huge success? Or will it belie expectations like the Amazon Fire Phone? Only time will tell.

-K.HEMANTH

The Interest Group Association

The interest group association of the youngest department of NIT Trichy is the first of its kind. It is a not-for-profit students' association intended to promote the interests of the students in the field of instrumentation and control on broad domains of engineering. With the persistent support of the director, Dr.S.Sundarrajan, the HOD of ICE department, Dr.N.Sivakumaran and other faculty members who are proactively involved in aiding the students to realize their untapped potential, the association has already made commendable strides since its inception in 2013. The association distributed itself into 9 distinct interest groups, identifying the common interests of pre-final and final year students who have, supposedly, recognized their potential on technical grounds. Primarily, the interest group association seeks to ideate, innovate and inspire the students by organizing different activities, guest lectures, workshops, exhibitions and competitions. Currently, the following interest groups, each headed by a final year student each are carrying out various activities.

The association believes that such a system of student formation shall contribute immensely in creating a platform to improve knowledge and provide experience to sustain the technical interests of ICE students also in other fields of engineering. This has been increasingly proving to be a boon for budding engineers.

- Avionics/Aeronautics/Aerospace
- Robotics/Labview Nlyantra
- Automobile Engineering
- MS Preparation
- Advanced control systems
- Graph theory/Programming
- RADAR Technology/Analog Electronics
- Signal Processing systems and design
- Financial Practices



The Much Awaited Yokogawa Unit

The much awaited Yokogawa Distributed Control System (DCS) powered by centum VP processor unit has grabbed its place on the ground floor of the instrumentation and control department building of NIT Trichy. Sponsored by the DST-FIST programme, the cost of this newly installed system amounts to around 24 lakhs. The system supports upto 8 analog and 32 digital input/output configurations. The DCS comprising of 2 separate units, HIS and FCS, stands in a fully air-conditioned laboratory where it is used for the automation of the following processes in the industry- modelled equipments also present in the same lab.

- Complex Control Systems
- pH processes
- Hybrid Control Tank system
- Heat Exchanger
- Multi Process Trainer
-

Currently, experimentation and research are going on for the control of the above-mentioned processes by the final year and post graduate students of the department.

-Radhika



Team ICEA '14-'15



Bharath VS
Overall
Coordinator



Andrew Abraham,
Treasurer



Gaurav Prakash,
Organizing Head



Aparna Latha V,
Head of Public
Relations



G Gopinath,
Workshop Head



Hemanth K,
Events Head



Kaushik Gokul
Vice President

Rahul Srivastava,
President



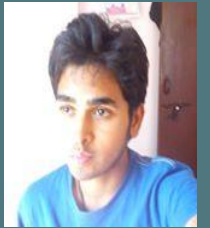
Venkitachalam R,
Design
Head



Lakshminarasimhan,
Head of Public
Relations



Dinesh Jadhav,
Publicity



Gopi Krishna,
CSG Head



Divyansh
General Secretary



