



**SALESIAN
COLLEGE**
SILIGURI & SONADA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

MAY 2017



1 Trends in Science & Technology (TIST) 2017

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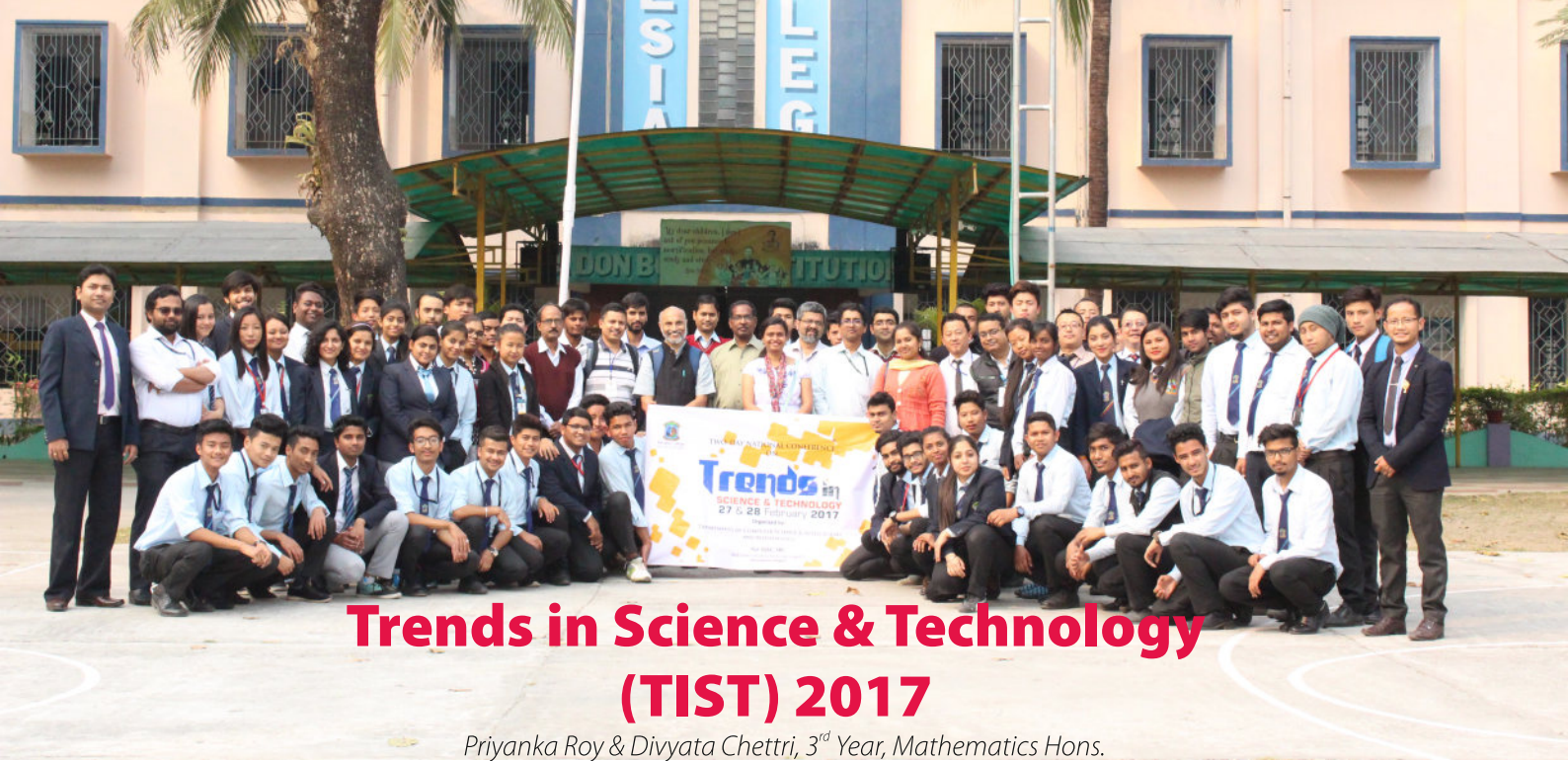
2 Field trip to Neora River

Neora River originates in the mountains between Sikkim and Bhutan and flows through Kalimpong where the gorgeous valley has been developed by the Government of West Bengal as a tourist destination. The same river flows down to the plains into the district of Jalpaiguri...

3 Social Outreach Program

Under the social outreach program of the Salesian College (a Don Bosco Institution) the faculties and students of the Department of Computer Science and Application visited Siliguri Girls High School, Collegepara, and Siliguri Borodakanto Vidyapith, Rathkhola (led by Mr. Tanay Bhadra...





Trends in Science & Technology (TIST) 2017

Priyanka Roy & Divyata Chettri, 3rd Year, Mathematics Hons.

A two day National level Conference on "Trends in Science and Technology" was organised by the Department of Computer Science and Applications in collaboration with the Department of Mathematics, Salesian College, Siliguri Campus on 27th and 28th February with the following objectives:

"The Salesian Research Institute has been publishing the Salesian Journal of Humanities and Social Sciences since 2010. As commitment towards academic excellence, the Science departments of the College have decided to bring out a Science Journal annually. Towards this endeavour, the institution desires to encourage participation from various personnel qualified in their respective domains to present the fruits of their investigations in the Conference / Seminar. The works will be evaluated by a panel of experts and will be selected for publication in the Science Journal. Dates have been chosen to culminate on the National Science Day which is the 28th February. Further, it is an endeavour to encourage the talent from North Bengal and surrounding regions to connect with resource personnel/ experts associated with institutions/ organizations of National importance."



The conference was attended by eminent academicians, faculty members and students from different parts of the country. The program was inaugurated with opening prayer by Fr. (Dr.) Mathew Pulingathil, Rector, Salesian college, Siliguri Campus, followed by the welcome speech by Dr. S. C. Das, Registrar of Salesian College Siliguri. Fr. (Dr.) George Thadathil, Principal of

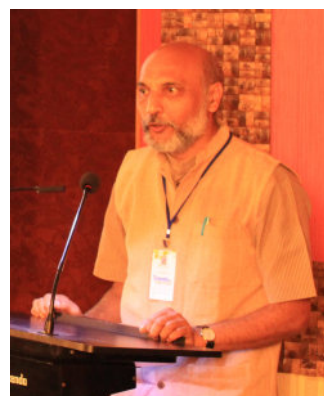


Salesian College, introduced the speakers to the gathering and addressed a few words to the audience.



The first day of the seminar began with the key-note lecture by Professor Chacko Jacob, Department of Material science, IIT Kharagpur on "Nanotechnology -Hype, Hope and Reality." During his lecture he spoke about

hype cycle of innovation in regard to technology and material. He also spoke about the role of size in fundamental measurements. Moving on to the technical session, there were four plenary speakers giving talks on various fields of science. The first plenary speaker was Professor C. S Aravinda, TIFR CAM, Bangalore who spoke on "Geodesic Conjugacies of Surfaces." Mr. Amrit Chettri, Principal IT Security Consultant with Rosefinch Consultancy Services Pvt. Ltd., Siliguri, delivered the third lecture focusing on the "Endpoint security solutions." The fourth lecture by Ms. Indrani Mukherjee, research scholar, Visva Bharati University, Shantiniketan, was delivered on "Estimation of PDF and CDF of Lindley distribution." The next lecture by Mr. Mohan B. Subba, Assistant Professor, Department of Mathematics, Salesian College, Siliguri campus, was on "Supernova Remnants in view of x ray and gamma rays."



The second plenary speaker, Prof. Sudhanshu S. Maiti, Department of Statistics, Visva Bharti University, Shantiniketan, spoke in depth about "Lindley distribution and data analysis." Prof. D. P. Dutta, retired Professor, Department of Mathematics, University of North

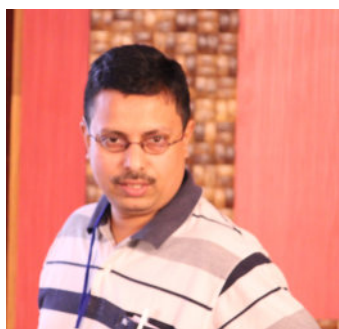


Bengal, delivered the next lecture on the topic "Simple to complex: fascinating journey from Newton to Mandelbrot." Mr. Subhajit Bose, Department of Computer Science and Applications, Salesian College, Siliguri on "OTP"

emphasised on the improvised OTP generation algorithm using Rubik's Cube. Mr. Sukanto Pramanik, faculty, Department of Statistics, Siliguri College, spoke on "Odds generalized exponential Weibull distribution." Mr. Tanay Bhadra, faculty, Department of Computer Science and Application, Salesian College, Siliguri Campus, on "An approach with Ant Colony Optimisation and graph colouring algorithm."

The second day of the Conference also happened to be the National Science Day 2017. Program was begun by introductory words of welcome by Mr. Dhirodatta Subba, Head, Dept. of Computer Science & Applications, Salesian College, Siliguri campus. Fr. (Dr.) Mathew Pulingathil, Rector, Siliguri campus, offered the opening prayer. Progressing on to the rest of the day's event, a special lecture on National Science Day was given by Prof. C. S Aravinda, T.I.F.R campus Bengaluru, as to why this day is celebrated. He shared a lot of information about Prof. C.V. Raman, his work and discoveries and the contribution of some notable personalities towards the field of science. The main message of this talk was the dispositions of different minds towards knowledge and their joint contribution towards the development of Humanity. This talk was followed by a biography of Prof C.S Aravinda by Mr Subhajit Paul, Head, Dept. of Mathematics, Salesian College, Siliguri campus.

Subsequently, the latest issue of College journal was released, followed by some words of wisdom by Fr. Aju Kurian, Vice Principal, Siliguri campus. Next, a biography of



Dr. Chiranjib Mitra, Scientist, IISER, Kolkata was given by Prof. S. C. Das, Registrar, Salesian College, Siliguri Campus.

The first plenary talk of the day was given by Dr. Chiranjib Mitra on "Quantum information

processing" where he gave introduction to quantum mechanics and its application in computers and why is it needed. He gave introduction to some basic definitions needed to study the application of quantum mechanics, followed by explanations on qubits and multiple qubits.

This talk was followed by another paper presentation on "Expected time to extinction of predator in an eco-epidemiological system" and few statistical measures on the distribution of the data and deterministic model based on population of different events by Mr. Anish Darnal, faculty, Department of Statistics, Salesian College, Siliguri campus. The next speaker was Mr. Debdut Sengupta, faculty, Department of Mathematics, Salesian college, Siliguri campus. He gave a brief discussion on " μ -Cauchy sequence and outer measurable sets", few theorems and arguments as a consequence of the topic. The last speaker of the first round of Technical session was Ms. Snigdha Roy, faculty of Dept. of Mathematics, Salesian College, Siliguri campus and her talk was based on "Hausdorff dimension and its applications", some theorems and arguments based on it.

The second Technical session was started by the plenary speaker Dr. Manoranjan Singha, Head, Dept. of Mathematics, University of North Bengal. He spoke on "Convergence of Sets in Topological Spaces". This was followed by another paper presentation by Mr. Anish



Chakraborty, faculty, Department of Physics, Salesian college, Siliguri campus which was based on the topic "Hockey-stick shaped mesogens - an interesting class of liquid crystalline materials." He spoke about the different orders of liquid crystals, different techniques about the new hockey-stick shaped mesogens and X-Ray diffraction patterns. The next presentation was by Mr. Amrit Chettri, Principal IT Security Consultant with Rosefinch Consultancy Services Pvt Ltd, Siliguri who talked about "Business innovation with Big Data Machine Learning, Artificial Intelligence and Deep Learning" which was based on few topics like Big Data Analysis platforms and Big Data being a joint outcome of Science and Human ideas. It was followed by another talk by Mr. Samar Thapa, whose paper presentation was based on "Thermal comfort Studies in the two College Campuses of Salesian College in - Sonada and Siliguri" which was based on the Thermal responses, Indoor environmental conditions, Clothing insulation and Thermal neutrality. The last part of the technical session consisted of two talks. The first presentation was given by the students of the Department of Computer Science and Applications of the host college where they talked about the "Blue Brain", its

applications and few projects which is currently being conducted in various places. It was followed by another talk by Prof. Prabhat Mukhia Titus, St. Joseph College, Darjeeling and his paper presentation was on "Advance Technology or Ultimate Deception and Theological Approach".

With this we came to an end of technical presentations. This was then followed by Memento Distribution to the resource personnel from various Institutions. Next, there was Certificate Distributions to the participants. The conference was concluded by the vote of thanks from Mr Dhirodatta Subba, Head, Department of Computer Science & Applications.



In Love with a machine...

Phudem Bhutia, BCA 2nd Semester

Artificial intelligence has come a long way through the ages. Indeed the growth and the rate at which artificial intelligence has evolved gives rise to a question that doesn't seem as outlandish now as it would have seemed even twenty years ago – "Will human and machine romance be possible?"

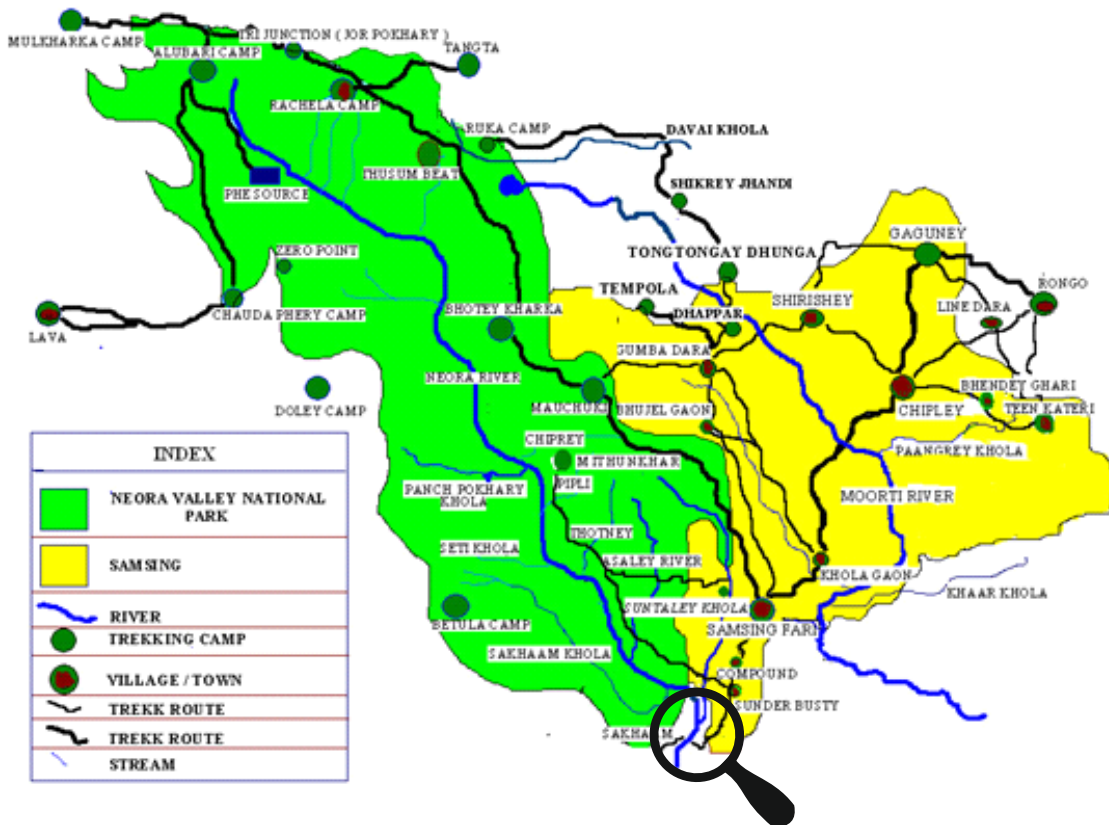
With the introduction of the Logic Theorist, Artificial Intelligence exploded onto the computer scene with a bang – a program in 1955 that could solve and prove 38 of the 52 theorems in the Principia Mathematica. Over the years, Artificial Intelligence has improved by leaps and bounds culminating in an incident in 2015, where a chatbot on Tinder named Ava convinced a number of users that she was a cute 25 year old woman eager to strike up a romantic relationship.

In many ways, Ava was playing a simplified form of Alan Turing's famous "imitation game" by trying to convince human conversational partners that it was human or at least enough to get Tinder users to watch a trailer for a movie. In one conversational exchange captured by Adweek, Ava used a typical chatbot tactic – keeping a

human off-balance by asking questions not expected from a computer – "Have you ever been in love?" and "What makes you human?"

Where things could take off is when new technologies give computers the ability to interact with humans in radically new ways that go way beyond just holding intellectual conversations. An AI-powered computer could learn to analyse your facial expressions or look into your eyes to sense your mood could theoretically simulate the type of emotional responses and triggers that we typically associate with a human. One thing is clear – technology is already changing the way we view relationships whether via simple means such as texting or more complex concepts such as artificial intelligence and virtual reality.

Love knows no boundaries. This age old adage may now come under pressure it has never seen before as human and machine / robot romance rises as a viable and increasingly likely alternative to conventional types of romance.



Field trip to Neora River

Neora River originates in the mountains between Sikkim and Bhutan and flows through Kalimpong where the gorgeous valley has been developed by the Government of West Bengal as a tourist destination. The same river flows down to the plains into the district of Jalpaiguri.

Department of Computer Science and Applications conducted a picnic cum EVS field trip for the students on 8th of April 2017. The spot chosen was close to the small Hydro Power project at Sakhaam Basti, Kalimpong district, West Bengal, India, developed by Neora Hydro Limited (NHL). It produces 3 MW electricity.

The place is reachable via Gorubathan or Samsing Tea estate via Chalsa. First route is about 80 Km and second route is about 90 Km distance from Siliguri.

On the way, we stopped at Bagrakot junction for breakfast. This was the same place where we stopped by last year also...just because the food is too good... what we call value for money. Then proceeded via Chalsa- Samsing route to the destination. We reached there around 11:30 am. Being a fairly hot day, all of us immediately headed for the river.



Fortunately, we had our accountant Mr. Manoj Tirkey, who hails from the same place with us as our local guide. With his help we got permission to visit the mini hydro project nearby. Most of us, leaving out a few who didn't want to leave the waters, had the opportunity to check the machines - though they were not operational at the time due to maintenance going on.

Then we headed for a small trek to the source of the water that feeds the power plant. Locally, this place is known as "intake". On the way there were noticeable flora and fauna.



We started the trip with prayer and blessings by Fr. (Dr.) C. J. George, Vice Principal, Siliguri Campus.



The cook we had taken along prepared very good food for us. Post lunch, boys who were not satisfied with swimming in the shallow river were informed that they could move to the "intake" where water was 8 feet deep at places. They enjoyed the most. However, for the girls, there was some disappointment as the sound system had some technical problem. Nevertheless, they compensated by going on a second round of trekking to nearby places. Faculties enjoyed equally... being in the lap of nature, away from

the demanding daily works, having fun with students, leaning together with students about nature, working of hydro power, treks and the bus rides. It was indeed a fun filled day of outing and learning!

We thank the College management who encourage us and support us in every event. Along with many academic and co-curricular activities that fill our calendar, we are given space for outing and fun also.





Social Outreach Program

Reported by Phudem Bhutia & Nikhil Pradhan, BCA, 2nd Semester

Under the social outreach program of the Salesian College (a Don Bosco Institution) the faculties and students of the



Department of Computer Science and Application visited Siliguri Girls High School, Collegepara, and Siliguri Borodakanto Vidyapith, Rathkhola (led by Mr. Tanay Bhadra and Mr. Subhajit Bose), and Salugara High School, Salugara (led by Mr. Abhijit Dey, Ms. Yadika Prasad & Mr. Dhirodatta Subba) undertaking Information Technology awareness program. The visiting faculty members and students interacted with the students and tried to

understand how and to what extent they are familiar with information & technology. It was a general observation that a voluminous amount of technology is what today's children are dependent on, but they are still unaware of its ill effects. Mr. Tanay Bhadra shared: "this is our social responsibility: we cannot just sit back and watch our children unintentionally getting indulged into unexpected events. The world is totally different today. We must help those who are unaware." Response from the visited schools was very encouraging as the students as well as the management have expressed the view that events of this kind are to be organized more often. With Bengali medium students at Salugara High School

This event is one of the many kinds which the department conducts regularly for the schools of North Bengal; for example, Compumathix – encouraging participation in knowledge driven competitions, Cyber Security workshops, etc. The members of the faculty hope to conduct these visits in other educational institutes in the near future.





I dream of a Digital India where
cyber security becomes an integral
part of our National Security.

— Narendra Modi —

AZ QUOTES

One Day Workshop on Cyber Security

Reported by Bishek Thapa and Sabina Pun, BCA 4th Semester

29th April, 2017

To enhance the students' knowledge about cyber security and its related issues, a one day workshop was organized by the Department of Computer Science and Application in partnership with Rosefinch Consultancy Services, Pvt. Ltd. Primary objective behind conducting workshop was to disseminate knowledge and conduct an awareness campaign on cyber security among college and school students to further explore the field.

The workshop was inaugurated by Fr. (Dr.) Mathew Pulingathil, Rector, Salesian College (Siliguri Campus) by



welcoming the guests and all participants.

It was attended by the students of Army Public School (Bengadubi), Sacred Heart School (Matigara), Salesian College (Siliguri Campus) and a faculty each from Sacred Heart School and Salesian College (Department of Computer Science and Application). Total number of attendees was 10.

Resource person

Mr. Rohan Chhettri, BCA from Sikkim Manipal University. He is presently working as a trainer for CEH (Certified Ethical Hacker) and CSCU (Certified Secure Computer User) at Rosefinch Consultancy Services, Pvt. Ltd, Siliguri.

About the workshop

Cyber Attacks have been on the rise around the globe,

with hackers and other criminals targeting small and large businesses to steal valuable information or bring computer networks to a halt.

Mr. Rohan firstly explained the definition of cyber security and its importance in today's life. He explained about the vulnerabilities in networking, details about economic vitality and cyber incident response. He mentioned that Cyber security professionals often thrive in an informal atmosphere, unconventional working hours, and shifting work responsibilities aimed at keeping knowledge fresh and work exciting.

He demonstrated the following:

- Installation of Kali Linux using pen drive and in VMware.
- How the malicious file is attached with pdf, app, or with software and how we can verify it.
- How to open a block website using zend2.com and its advantages.
- Recent attack on one of the reputed hospital in Siliguri with dharm ransom ware attack.
- Demonstration of how sniffing attack is done in the Kali Linux using Wireshark tool.
- How a user is able to see the user login id and password when the user is connected in one internet.

In conclusion he gave the guidelines regarding safe and secure usage of internet.

