GURUKUL VĀRTĀ

IIT GOA NEWSLETTER

AUG 2020 - NOV 2020

IIT GOA

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IIT GOA NOW a HPC NODAL Center

*by **Mr Neeraj Krishnan,** Student Reporter*

IIT Goa has been selected to host the Nodal Center for Training in HPC and AI under the National Supercomputing Mission (NSM), spearheaded by Center for Development of Advanced Supercomputing (C-DAC), under the Ministry of Electronics & Information Technology, Govt. of India (MeitY, GoI). The initiative is aimed at training students, researchers and faculty in High-Performance Computing (HPC), particularly on two diverse aspects: Architecture and Applications and Artificial Intelligence (AI). To achieve the same, workshops, seminars and guest lectures are slated to be conducted by the center via a series of online and offline events in the coming year. In addition to these programs, the center will also conduct hackathons and specialized programs for HPC and AI users in various application domains. The Center is currently supported by industry giants like **Intel Parallel Computing Labs, ARM** and **Nvidia** and is expected to gather more support from the industry with time. IIT Goa has been awarded this center along with IIT Madras, IIT Kharagpur and IIT Palakkad. The IIT Goa HPC Nodal Center is coordinated by **Dr Sharad Sinha** (Asst. Prof., SMCS).

The NSM Nodal Centers were inaugurated by **Shri Sanjay Dhotre,** the Hon'ble Minister of State for Education, Electronics and Information Technology, in an online ceremony held on **October 12, 2020**. In this respect an MoU was signed by Dr B. K. Mishra, Director, IIT Goa and Mr Hemant Darbari, Director General, C-DAC on this day.

As of now, the IIT Goa HPC Nodal Center has hosted three talks under the **HPC-AI Talk Series**, which kickstarted on **August 7, 2020**, and is currently coordinating **HPC Shiksha: Basics of High Performance Computing** (an online course) which has been jointly launched by the four nodal centers and C-DAC. The 13-week course that focuses on enhancing basic skills relevant to high performance computing was inaugurated by Dr B. K. Mishra, Director, IIT Goa, on **November 6, 2020** through an online ceremony. The course, which began on **November 9, 2020**, has had an overwhelming response with around 800 students from all over the country having registered for it. The center has also planned talks by industry experts as a part of this course, the first among which was a webinar on **Arm HPC Architecture and Software Tools** by **Ms Juan Gao,** Senior Applications Engineering Manager, Arm, Cambridge, UK.

HPC Facilities at IIT Goa

Within its space constraints, IIT Goa is in the process of finalising the setup of the following HPC facilities:

Central HPC Facility

It has 16 CPU nodes and 1 GPU node. Each CPU node consists of 2 processors with 20 cores each. This facility is, therefore, CPU dominated. It has a peak performance of ~20 Teraflops. This facility may be made available to those outside the IIT Goa Community at an affordable fee.

NSM Nodal Center

It has 2 CPU nodes and 2 GPU nodes, of which one GPU node is optimised for HPC applications like CFD, while the other is optimised for AI. This facility will be free and remotely accessible to people across India under the National Super-computing Mission.

Users can also write parallel programs in languages familiar to them like C, C++, FORTRAN etc., with the help of HPC Packages like OpenFoam, OpenMP, OpenMPI installed on our machines. To those of whom it may be of interest, our machines run CentOS, which is a flavour of Linux.

With direct access to these facilities, the IIT Goa HPC-AI Nodal Center will be no doubt beneficial to the faculty and students in Goan educational institutions and to students and researchers across the country via Remote Access. HPC will be the real game changer when the simulation is of a gargantuan scale or makes use of parallel programming, say involving terabytes or peta-bytes of data. “Think of a simulation involving how millions of atoms would interact with each other”, says Dr Sharad Sinha. Suitable applica-tions of HPC include weather study, compu-tational fluid dynamics, proteomics, among others. The architectural aspects of working at this scale will be of interest to those intrigued by Computer Science, while the ability to run simulations at this scale will be an advantage to researchers from other domains. IIT Goa is also planning to establish a bigger HPC facility once more space becomes available.

HPC-AI Talk Series

Towards Parallelization of Deep Learning Recommender Systems (*Optimizing Facebook’s DLRM Training on CPU Clusters*)

NSM NATIONAL SUPERCOMPUTING MISSION

Organized by IIT Goa HPC Nodal Center, Supported by School of Mathematics and Computer Science, IIT Goa

Date: August 11, 2020 **Time**: 11 AM

Speakers:
Bharat Kaul, *Director, Parallel Computing Lab, Intel Labs India*
(https://sites.google.com/view/bharat-kaul-intel-labs-pcl/home

Dhiraj Kalamkar, *Research Scientist, Parallel Computing Lab, Intel Labs India*

Host: Dr. Sharad Sinha, Computer Science & Engineering, IIT Goa

Biography: Bharat is Director for Intel Labs/Parallel Computing Labs (India). In his ~2-decade career at Intel, Bharat has held several technical and management leadership positions within product development groups and has been leading the research lab for more than decade. As part of Intel Labs, Bharat’s research focuses on Application driven Architectural Performance leadership for Intel for multi-core/many architectures with special focus on Artificial Intelligence and High-Performance Computing. Under his leadership, the lab has had significant contributions to Intel’s product roadmap both in High Performance Computing and Large Scale AI, 50+ papers in Tier-1 computing conferences and contributions to India’s National AI Strategy. The lab works in close collaboration with leading academic and industry partners across the globe with significant engagement with government.

Biography: Dhiraj is a research scientist in Intel's Parallel Computing Lab in Bangalore. His research interests include parallel computer architecture, GPGPU architectures, hardware specific single node and distributed performance scaling optimizations. Recently, he is working on analyzing and optimizing deep learning workloads, frameworks and libraries for Intel Xeon and GPU architectures. Dhiraj led the early efforts to demonstrate superiority of BFloat16 over INT16 for training DL workloads helping set directions for low-precision Xeon roadmap for future generations. He has co-authored over 15 peer reviewed publications and holds 4 patents.
Dhiraj Joined Intel in 2006 as an RCG. Before joining Intel he has completed Bachelor of Engineering from Government engineering college, Aurangabad, Maharashtra, India and earned an M. Tech. from IIT Kanpur.

Abstract:
During the last two years, the goal of many researchers has been to squeeze the last bit of performance out of HPC system for AI tasks. Often this discussion is held in the context of how fast ResNet50 can be trained. Unfortunately, ResNet50 is no longer a representative workload in 2020. Thus, we focus on Recommender Systems which account for most of the AI cycles in cloud computing centers. More specifically, we focus on Facebook’s DLRM benchmark. By enabling it to run on latest CPU hardware and software tailored for HPC, we are able to achieve up to two-orders of magnitude improvement in performance on a single socket compared to the reference CPU implementation, and high scaling efficiency up to 64 sockets, while fitting ultra-large datasets which cannot be hold in single node’s memory. Therefore, this work discusses and analyzes novel optimization and parallelization techniques for the various operators in DLRM. Several optimizations (e.g. tensor-contraction accelerated MLPs, framework MPI progression, BFLOAT16 training with up to 1.8× speed-up) are general and transferable to many other deep learning topologies.

PARAM SHAKTI (1.3 PF) and PARAM Brahma (650 TF) Supercomputers
Images Courtesy: C-DAC, Pune

MoUs and Collaborations

MoU with GOA SHIPYARD LTD

In keeping with the spirit of the Atma-Nirbharta Week celebrations, IIT Goa took a strong step towards the goal of a self-reliant India by signing an MoU with Goa Shipyard Ltd on **August 14, 2020**. The MoU covers AI, ML, IoT, CFD and other areas for cooperation towards indigenous technology development. The MoU exchange ceremony, held at Goa Shipyard Ltd, Vasco da Gama, was witnessed by Hon'ble Defence Minister Shri Rajnath Singh through video conference.

MoU signing ceremony

MoU with MeFy CARE PVT LTD

In an agreement to engage in collaborative research related to sophisticated application-based technologies in the field of healthcare, IIT Goa signed an MoU with MeFy Care Pvt Ltd on **September 22, 2020**.

MoU with SIEMENS LTD

With the purpose of collaborating on mechanical power systems and Computer Science based projects in the distribution automation domain, IIT Goa signed a MoU with Siemens Ltd on **September 23, 2020**. In this regard, IIT Goa shall act as the host institution to conduct internships and jointly work with Siemens on areas detailed as per the MoU.

MoU with C-DAC

Under the National Computing Mission, IIT Goa entered into a Memorandum of Understanding with the Center for Development of Advanced Computing (C-DAC) on **October 12, 2020** to host a NSM Nodal Center for Training in High Performance Computing (HPC) and Artificial Intelligence. The MoU, signed in the presence of Hon'ble Minister of State for Education, Communications and Electronics and Information Technology, **Shri Sanjay Dhotre**, renders IIT Goa the ability to train and build manpower in HPC and AI. The center will be led by Dr Sharad Sinha (Asst. Prof., SMCS).

Representatives of IIT Goa and C-DAC during the MoU signing ceremony

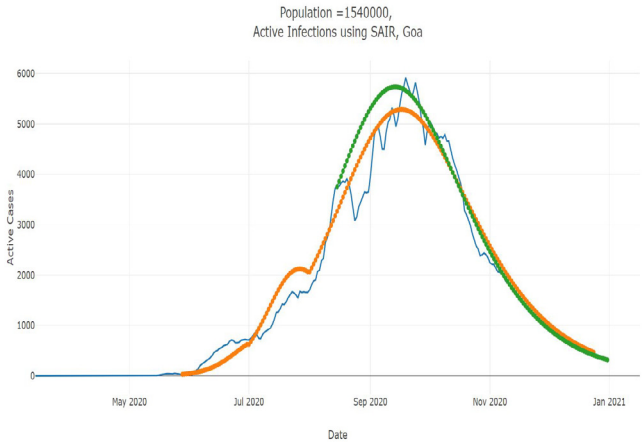
R&D HIGHLIGHTS

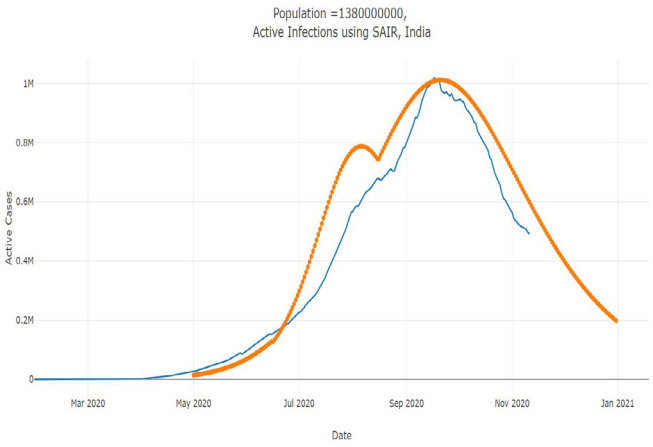
IN FOCUS

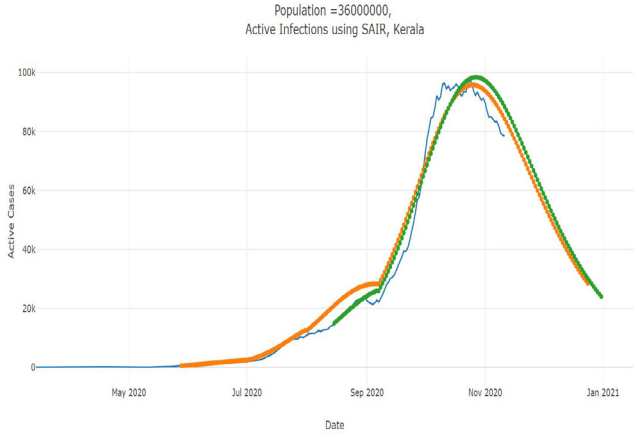
IIT Goa Team Joins Hands with DST to Track the Progression of COVID-19 in India

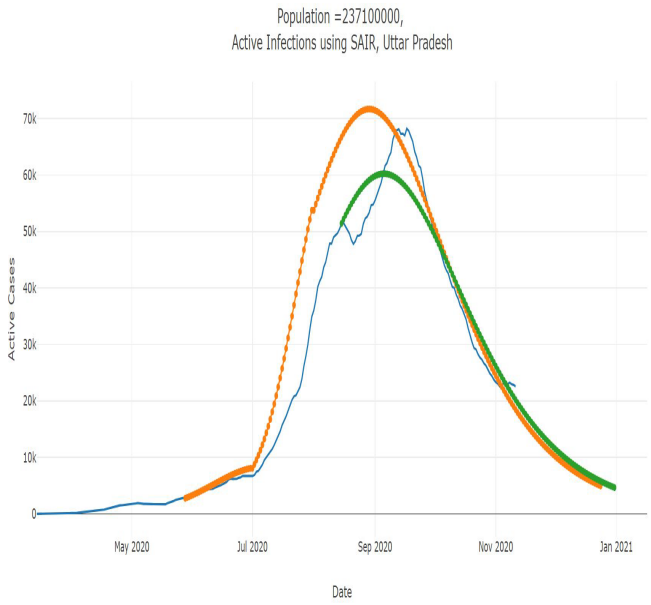
Computer Science and Engineering (CSE) faculty **Dr Somenath Biswas, Dr Clint P. George, and Dr Sreejith AV**, along with graduate students, **Mr Rajat Singh** (IIyr, M.Tech) and **Mr Vaibhav Rai** (IIyr, M.Tech), teamed up with the **Department of Science and Technology** (DST), Govt. of India to build an interface for the **National Supermodel for the Progression of COVID-19** pandemic across various states of India.

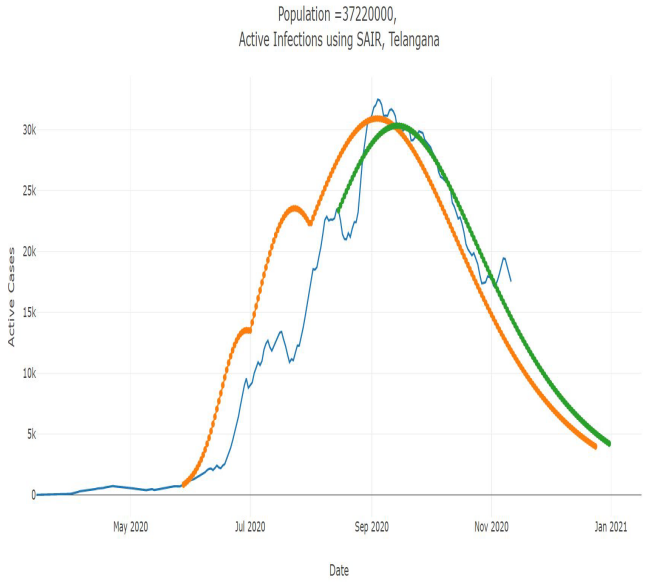
The existing modeling of COVID-19 using popular epidemic models such as SIR and its variations, which uses compartmentalization of the population into Susceptible (S), Infectious (I), Recovered/Diseased (R) and some mathematical principles - is not effective due to disease dynamics unique to COVID-19. For example, it is impossible to know if a person falls into the Susceptible compartment since an infected person can stay asymptomatic for a certain time and then move onto the Recovered or Infectious compartment and then follow dynamics similar to SIR. The DST team proposed a supermodel for the country, capturing different aspects of the existing models, disease dynamics specific to the COVID-19 pandemic and the administrative interventions that took place. As can be seen from the graphs below, this new model captures the progression of the pandemic at hand much more effectively, and also reflects the different phases that relate to lockdowns and other critical events that unfolded in various Indian states.











List of Sponsored R&D Projects

August, 2020 - November, 2020

NAME OF THE FACULTY	SCHOOL	SPONSORING AGENCY	PROJECT TITLE	DURATION
Dr Sreenath Balakrishnan	School of Mechanical Sciences	Science and Engineering Research Board	Micro-mechanism for Biaxial Stretching of Biological Cell	2 years
Dr Harpreet Singh	School of Mechanical Sciences	Science and Engineering Research Board	Composite Structures Under Shock and High Velocity Impac	2 years
Dr Thaseem Thajudeen	School of Mechanical Sciences	Science and Engineering Research Board	Machine Learning based Algorithmfor Predicting Three -Dimensional Fractal Structure of Aggregated Nanoparticles from Microscopy based Image and Application in Characteriz-ation of Ultrafine Particle Matters	3 years
Dr Sharad Sinha	School of Mathematics and Computer Sciences	Ministry of Electronics & IT, Govt. of India	NSM Nodal Center for Training in HPC and AI	2 years

INSTITUTE EVENTS

IN FOCUS

HINDI PAKHWADA

*by **Mr Shubham Garg,***
Student Reporter

Hindi Diwas is celebrated on **September 14** every year since 1953 to commemorate the adoption of the Hindi language, written in Devanagari script, as one of the two official languages of the Republic of India by the Constituent Assembly of India. Keeping with this annual tradition, IIT Goa observed **Hindi Pakhwada** (Hindi Fortnight) online from **September 4-14, 2020**. The Pakhwada was kickstarted with a one-day workshop on **Knowledge and Training of E-Resources for Working in Hindi in Office** by **Dr Rakesh Sharma,** Hindi Officer, National Oceanography Institute Goa as the invited speaker. In the days that followed, various competitions, namely translation, essay writing, short story writing and Kavi Sammelan were organised for faculty, staff and students by the IIT Goa Hindi Cell.

The Pakhwada culminated with the celebration of **Hindi Diwas** on **September 14**. The occasion was graced by eminent poet and novelist **Dr Anamika** (Assoc. Prof. of English, Sarawati College, Delhi University). She delivered a passionate lecture on 'आपकी नसों में बहती कविता' (Poetry Flowing in Your Veins), in which she stressed upon the important role that poetry plays in our lives. Dr Anamika also motivated the participants to read and write poetry and her critical comments on various entries submitted for short story and poetry recitation competitions were a huge boost to the amateur poets of IIT Goa. The event concluded with the announcement of the results of the various competitions held during the fortnight.

The results of the various competitions are as follows:

STAFF

Translation competition (Non-Hindi Speaking)

	NAME	DESIGNATION
Winner	Mr Akshay Kumar Patil	(Transport Unit and Recruitment Cell)
First Runner Up	Mr Jitendra Karna	(Internal Audit Section)
Second Runner Up	Mr Hrishikesh Kalita and Mr Sajish Kumar P.V	(Internal Audit Section) (Registrar Office)

Translation competition (Hindi Speaking)

	NAME	DESIGNATION
Winner	Mr Ramesh Kumar	(Academic Section)
First Runner Up	Mr Anoop Kumar	(Estate Management Department)
Second Runner Up	Mr Mohammed Shamim Siddiqui Mr Devendrakumar Pasi	(F&A) (R&D)

Essay Writing Competition (Hindi Speaking)

	NAME	DESIGNATION
Winner	Mr Anoop Kumar	(Estate Management Department)
First Runner Up	Mr Ramesh Kumar	(Academic Section)
Second Runner Up	Mr Mohammed Shamim Siddiqui	(F&A)

Essay Writing Competition (Non-Hindi Speaking)

	NAME	DESIGNATION
Winner	Mr Ronnie Singha	(Academic Section)
First Runner Up	Mr Jitendra Karna	(Internal Audit Section)
Second Runner Up	Mr Akshay Kumar Patil	(Transport Unit and Recruitment Cell)

FACULTY

Essay Writing Competition (Non-Hindi Speaking)

	NAME	DESIGNATION
Winner	Dr Raja Mitra	Asst. Prof., SCMS

STUDENTS

Short Story Writing Competition

	NAME	DESIGNATION
Winner	Mr Hrithik Agarwal	(IVyr UG, ME)
First Runner Up	Ms Anushka Gupta	(Ph.D., EE)
Second Runner Up	Mr Shubham Garg	(IIyr UG, EE)

Essay Writing Competition (Hindi Speaking)

	NAME	DESIGNATION
Winner	Mr Ashish Kumar	(UG-Alumni, 2016 batch)
First Runner Up	Mr Akshay Kumar	(IVyr UG, EE)
Second Runner Up	Mr Shubham Garg	(IIyr UG, EE)

74th INDEPENDENCE DAY

Link : https://www.youtube.com/watch?v=XkY14-juWfs&t=186s

The IIT Goa community celebrated the **74th Independence Day** of the nation with much aplomb on **August 15, 2020**. While deans, faculty coordinators and section in-charges attended the celebration in person (adhering to appropriate social-distancing norms), the rest of the faculty, staff members and students joined the function digitally, through YouTube Live. Dr B. K. Mishra, Director, IIT Goa, unfurled the national flag and the national anthem was sung by the students, faculty and staff who had congregated to celebrate the day. Following this, Dr Mishra addressed the gathering. The live broadcast of the event concluded with the playing of a pre-recorded rendition of 'Vande Mataram' by the students.

ENGINEERS' DAY

IIT Goa celebrated Engineer's Day on **September 15, 2020**, by organising a lecture titled **"Engineering": A Robust Higher Education System: Pandemic, Policy and Polity** by **Prof. L. M. Patnaik,** Adjunct Professor and INSA Senior Scientist. On this occasion, Dr B. K. Mishra, Director, IIT Goa, was awarded the Eminent Eng-ineer Award 2020 by The Institution of Engineers (India). The award was conferred on Dr Mishra by the Chairman of IEI, Goa State Center and the Honorary Secretary of IEI, Goa State Center.

Dr B. K. Mishra being conferred the Eminent Engineer Award 2020

GANDHI JAYANTI

IIT Goa celebrated the 151st birth anniversary of Mahatma Gandhi with much fervour on **October 2, 2020**, by holding an online gathering. While the guest of honour for the occasion, Gandhian scholar **Dr Dhanada Kanta Mishra** delivered a **lecture**, the student community commemorated the ideals of the Father of the Nation through various forms of cultural expression such as dance, music and poetry recitals. As part of the celebration, IIT Goa had also organized various student-level competitions (in online mode) - a debate and a quiz respectively - to recognize the Mahatma's principles of truth, non-violence, tolerance, civil resistance etc., the results of which were announced during the event.

JAN ANDOLAN CAMPAIGN

In keeping with the Government of India's 'Jan Andolan Campaign', a pledge drive to promote adherence to COVID-19 protocols was organised online by IIT Goa on **October 12, 2020**. By swearing to observe the prescribed norms of personal and public conduct, the staff and faculty at the institute expressed their solidarity with the government's initiative to ensure citizens' safety and well-being.

8th SENATE MEETING

IIT Goa held its 8th Senate Meeting via video conferencing on **October 27, 2020**. The meeting, convened under the chairmanship of Dr B. K. Mishra, Director, IIT Goa, was attended by nominated members of the Senate, special invitees and student repr-esentatives.

RASHTRIYA EKTA DIWAS & VIGILANCE AWARENESS WEEK

In observance of the Rashtriya Ekta Diwas (National Unity Day) commemorating the birth anniversary of Sardar Vallabhbhai Patel, the IIT Goa community took the pledge with the rest of India on **October 31, 2020** at 12.00pm. The occasion and the accompanying pledge was aimed at re-affirming the inherent strength and resilience of the nation to withstand the actual and potential threats to its unity, integrity and security.

Sardar Patel's birthday week is also observed as the **Vigilance Awareness Week (VAW)** by the Central Vigilance Commission. This year, VAW was observed from **October 27 - November 2, 2020** with the theme 'Vigilant India, Prosperous India - *Satark Bharat, Samarth Bharat*'. To mark the occasion, IIT Goa organised an essay writing competition on the topic 'Corruption as an Enabler of Socio-economic Inequality in India'.

IIT GOA HOSTS VIRTUAL ROADSHOW in COLLABORATION with the MINISTRY of DEFENCE and IDEX, DIO

Indian Institute of Technology Goa, along with the Ministry of Defence and IDEX, hosted a virtual roadshow on DISC (Defence India Start-Up Challenge) on **November 4, 2020**. The fourth edition of DISC, which focuses on meeting the needs of the armed forces, is underway. Echoing several other initiatives by the Government of India, such as Make in India and Start-up India, DISC too aims to stabilize and build the Indian defence ecosystem. DISC 4 also allows various stakeholders to tap into Goa's potential for establishing itself at the helm of research in defence technologies and defence manufacturing especially related to the Navy, the possibility of which was affirmed by the chief guest for the event, **Shri Shripad Naik, the Hon'ble Minister of State for Defence**.

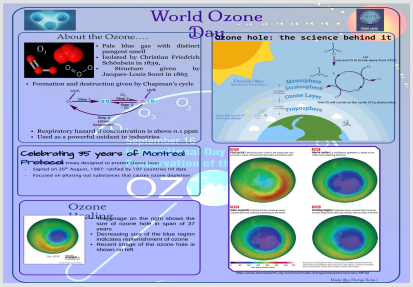
Addressing the attendees consisting of several other dignitaries, including Mr Sanjay Jaju, Additional Secretary Department of Defence Production, Ministry of Defence and representatives of Air Force, Navy and Army, innovators, faculty and the student community, the Minister noted how the access to shipyards and MSMEs dealing with the manufacturing of the shipping components equip the state to transform itself into a premier defence hub and a foremost partner incubator for IDEX DIO. Shri Naik noted that IIT Goa's role in these projections is crucial. He lauded:

"IIT Goa and the local MSMEs' efforts to create jobs and technologies for the future", which he said "would subsequently help build this region as well lay the foundations for a stronger sustainable nation".

Adding to the minister's words, Dr B. K. Mishra, Director, IIT Goa, noted how IIT Goa with its manpower and infrastructure would be the right place for the IDEX-proposed start-up incubation hub to be set up. Outlining the various MoUs signed in the recent past within the local ecosystem and with industries, including Kineco Kaman Composites, Goa Shipyard and Siemens Ltd., Dr Mishra described how the Institute's activities - research as well as academic - have been aligned with the state's interest in transfo-rming Goa into a sustainable technological hub. He also added that the IIT community "is hopeful that our engagement with R&D is going to go a long way to establish one incubation hub here. Our students are quite active and participating in national level hackathons and are building a start-up ecosystem."

WORLD OZONE DAY

The International Day For Preservation of Ozone Layer is normally observed on **September 16** every year. However, due to the pandemic, several educational institutions in India organised various events in the month of October to raise awareness among the public of the necessity to protect the Ozone layer and to seek solutions to preserve it. IIT Goa too organised a poster making and painting competition for its students in the last week of October, the results of which were announced on **October 30, 2020**. The events were coordinated online by **Dr Thaseem Thajudeen** (Asst. Prof., SMS) and **Dr Raja Mitra** (Asst. Prof., SCMS).



Winning entry by Ms Shriya Saha

NSM HPC Shiksha Course

Dr B. K. Mishra, Director, IIT Goa inaugurated the Pan-India NSM HPC Shiksha Course on **November 6, 2020**. The online course **HPC Shiksha: Basics of High-Performance Computing** is one of the initiatives of the newly inaugurated NSM Nodal Center and is held in collaboration with CDAC and the nodal Centers at IIT Madras, IIT Palakkad and IIT Kharagpur. The course is focused on enhancing basic skills relevant to high performance computing. Talks by industry experts are also planned as part of this course.

IIT GOA CELEBRATES NATIONAL EDUCATION DAY

In accordance with the order issued by the Ministry of Education, in celebration of National Education Day, IIT Goa Students Cultural Council organized a debate and an essay writing competition with themes centered on the New Education Policy 2020. Celebrated every year on **November 11**, National Education Day commemorates the birth anniversary of Maulana Abul Kalam Azad, the first Minister of Education of independent India. Ms Manasi Rawat (IIyr, UG, SMS) secured first place in the essay writing competition and Mr Saksham Goyal (IIyr, UG, SMS) won the debate competition.

ORIENTATION DAY

IIT Goa held an orientation programme for its fresher batch on **November 11, 2020**. Held online, various members of the faculty and the present student community interacted with the new entrants, welcoming them to IIT Goa. The event was aimed at offering the entrants a window into the prospective academic life at the institute. To initiate the new students to campus life, an orientation week which focused on the various student bodies was also organized by the IIT Goa Student Council from **November 18-25, 2020**.

IIT GOA CONDUCTS AICTE ATAL FACULTY DEVELOPMENT PROGRAM

IIT Goa conducted the **AICTE ATAL Faculty Development Program** on the **Internet of Things** from **November 14-18, 2020**. The program, inaugurated by Dr B. K. Mishra, Director, IIT Goa, on November 14, was attended by around 200 faculty members from AICTE-recognized engineering colleges from all over the country. While Dr S. Biswas (PIC, Faculty Affairs) spoke about the role of faculty members in an academic institution, Dr B. Subudhi (Dean, R&D) delivered a talk on 'IoT Scope and Challenges'. The FDP included both theory and hands-on sessions and featured invited speakers from reputed institutes such as **Mr Ashish Kuvelkar** (CDAC)**, Mr Bhupendra Pratap Singh** (Bliss Health)**, Dr Vivek Chaturvedi** (IIT Palakkad)**, Dr Alok Prakash** (Nanyang Technological University, Singapore)**, Mrs Apurva Varma and Mr Ish Dham** (Arm) as well as members of IIT Goa's CSE faculty - Dr Clint P George, Dr Neha Karanjkar and Dr Ravi Mittal**. Mr Ish Dham**, Distinguished Engineer, Arm was the keynote speaker for the valedictory function. A session on yoga and meditation was also organized for the participants, conducted by **Mr Manmohan Sewda** (Junior Assistant, Administration, IIT Goa). The FDP was conducted online and coordinated by Dr Sharad Sinha (Asst. Prof., SMCS).

CONSTITUTION DAY

To commemorate the adoption of the Constitution of India, IIT Goa, in accordance with the directive from the Government of India, organized a 'Reading of Preamble' event at 11.00 AM on **November 26, 2020** through video conferencing. The 'Reading of Preamble' was led by Dr B. K. Misra, Director, IIT Goa. The institute also organized a talk on **Values and Fundamental Principle of the Indian Constitution** by **Mr Sidharth Chauhan, Asst. Prof., NALSAR Hyderabad,** to celebrate the occasion.

COLLOQUIA

The first talk in the **HPC-AI Talk Series** organized by IIT Goa NSM Nodal Center for Training in HPC and AI was held on **August 7, 2020**. The talk, titled **Accelerating Science and AI Using GPU**, was delivered by **Mr Bharatkumar Sharma,** NVIDIA.

IIT Goa Central Library, in collaboration with **Balani Infotech**, organized a **webinar** on **Online Awareness Session on SIAM eJournals** on **August 10, 2020**. The speaker for the event was **Mr Sandesh Ghate**, Training Manager, Balani Infotech.

IIT Goa NSM Nodal Center for Training in HPC and AI organized a talk on **Optimizing Facebook's DLRM Training on CPU Clusters** on **August 11, 2020**. This was the second talk in the **HPC-AI Talk Series** and was jointly delivered by **Mr Bharat Kaul,** Intel Parallel Computing Labs, Intel Labs, India and **Mr Dhiraj Kalamkar,** Intel Parallel Computing Labs.

Under the **HPC-AI Talk Series**, a **webinar**-based training on **Intel HPC Tools and Open VINO Toolkit** was organized by IIT Goa NSM Nodal Center for Training in HPC and AI on **August 17, 2020**. The speaker for the event was **Kiran Kannappan,** HPC Technical Consultant, Aditech ICT Pvt Ltd .

IIT Goa Central Library, in collaboration with **Pearson**, held a **webinar** on **Tools To Improve Communications Skills & Increase Employability of Students** on **September 8, 2020**. The speaker for the event was **Mr Mritunjay Singh**, Training Manager, Pearson.

IIT Goa Central Library, in collaboration with **GIST**, conducted a **Two-Day National Workshop on Getting Aligned to the Publishing Process** from **August 25-28, 2020**. The speaker for the event was **Mr Vishal Gupta**, Customer Consultant (South Asia), Elsevier.

IIT Goa organized an **Institute Level Training** session on Prevention of Sexual Harassment at Workplace (PoSH). The session was conducted by NPC INDIA on August 27, 2020.

IIT Goa Central Library, in collaboration with **Knimbus Online Pvt Ltd**, conducted an **online training session** on **Effective Utilization of Online Resources Through Knimbus Remote Access & Mobile App** on **October 27, 2020**. **Mr Venkatesh**, Client Engagement Manager, Knimbus Online Pvt. Ltd. was the speaker for the event.

As part of the I**nstitute Lecture Series**, a talk titled **Exploring Cross-Platform Solutions for Health-Data Analytics** by **Prof. Anu Bourgeois,** Associate Professor, Department of Computer Sciences, Georgia State University was organized by IIT Goa on **November 20, 2020**.

As part of the **Health Talk Series**, IIT Goa organized a talk titled **Care for your Health** on **November 30, 2020**. The talk was delivered by **Dr Biswajit Mohapatra,** Senior Consultant Laparoscopic Surgeon, Jaiprakash Hospital & Research Center Pvt Ltd, Rourkela, Odisha**.**

AT THE SCHOOLS

A webinar by **Prof. Lakshmi Subramanian**, Visiting Professor, BITS Goa, titled 'Creative Pasts: Why Study History?' was organised by the **School of Humanities and Social Sciences** on **August 8, 2020.**

An online seminar by **Dr Victor Roy,** NISER, Bhubaneswar, titled " Extreme-Matter Under the Strongest Magnetic Fields in the Universe" was organised by the School of Physical Sciences on **August 14, 2020**.

A webinar by **Dr Subodh M. Joshi,** Research Fellow, University of Michigan, Ann Arbor, titled "Reducing Computing Costs while Retain-ing Higher-Order Numerical Accuracy: A Multi-level Approach" was organized by the **School of Mechanical Sciences** on **September 4, 2020**.

A webinar by **Dr Keval S. Ramani,** Post-Doctoral Researcher, IMB and INRIA Bordeaux Sud-Ouest Research Center, France, titled "Advanc-ing 3D Printing using Control Theory" was organized by the **School of Mechanical Sciences** on **September 25, 2020**.

A webinar by **Prof. S R M Prasanna,** Professor, Dean R&D and Faculty Welfares, IIT Dharwad, titled "Machine Learning for Signal Processing, and Vice Versa" was organised by the **School of Electrical Sciences** on **October 10, 2020**.

A webinar by **Dr Indranil Chaterjee,** Asst. Prof., Department of Chemistry, IIT Ropar, titled "Radical Reactivity of Nitrosoarene" was conducted by the **School of Chemical and Materials Sciences** on **November 6, 2020**.

A webinar by **Mr Mandeep Singh,** Founder, Nanatom Technologies on "Multirole (small-scale) Mechanical Characterization" was organized by the **School of Mechanical Sciences** on **November 20, 2020**.

A webinar by **Dr Tapomayukh Bhattacharjee,** Asst. Prof., Cornell University, titled "Building Caregiving Robots that Can Touch, Sense, and Feed People" was organized by the **School of Mechanical Sciences** on **November 23, 2020**.

INSTITUTE INNOVATION COUNCIL

Institute Innovation Council (IIC), IIT Goa, aims to establish an innovation culture by providing students with relevant exposure, education and skills to solve real world problems. In this respect, student-led clubs supported by the IIC, such as the E-Cell, Innovation Team, Events and Engagements Team, Team Creativity (the outreach team), are tasked to identify and conduct student driven events, talk series and competitions which would help nurture systematic innovation and entrepreneurial skills. They also work to provide students with a platform to interact with experienced entrepreneurs and innovators from various domains by organizing events to this effect. Apart from conducting these events, the teams are currently in the process of building learning repositories for students interested in entrepreneurship, setting up the IIC website and creating engaging content for social media.

The IIC has been quite active from August '20 - November '20. The list of events is given below.

DATE	TITLE OF THE TALK	NAME OF THE SPEAKERS
August 24, 2020	Intellectual Property Rights and Filing of Patents (webinar)	Adv. Shalini Menezes, Founder, Director, SimSim Advisory & IPR expert IIC, IIT Goa
October 10, 2020	IIC and E-Cell Introductory Event and Brainstorming Session	Student coordinators and the team members, IIC, IIT Goa
September 30, 2020	Blockchain and Cryptocurrency (webinar)	Mr Siddharth Menon, COO Founder Wazirx
October 28, 2020 – November 3, 2020	Know Your IPR Rights (IPR quiz series)	Innovation Team, IPR and Projects Team and Outreach Team, IIC, IIT Goa
November 15, 2020	Entrepreneurship and Innovation Series-Session I	Mrs Mugdha Hedaoo, Founder, GoPlayCosmetics
November 26, 2020	Entrepreneurship and Innovation Series- Session II	Mr Kumar Anshu, Founder, Brains 'n Bots

FACULTY ACCOLADES

AWARDS, HONOURS, AND RECOGNITION

Dr B. K. Mishra, Director, IIT Goa, has been conferred The Institution of Engineers (India) **Eminent Engineer Award 2020**. The award was presented to him by the Chairman, IEI, Goa State Centre & Honorary Secretary IEI, Goa State Centre on behalf of IEI, Durgapur Chapter.

Dr B. K. Mishra, Director IIT Goa, has been ranked as high as 11th in the world for his research in the field in mining and metallurgy by Standford University, USA. Along with him, **Dr Dhirendra Bahadur** (Prof., SCMS) and **Dr Bidyadhar Subudhi** (Prof., SES) have also made it to the list.

Dr Raja Mitra (Asst. Prof., SCBS) has been chosen by the editorial boards of *Synlett*, *Synthesis*, and *Synfacts* as one of their **Thieme Chemistry Journal Awardees** for 2021. Individuals in this category are promising professors at the beginning of their career, and every year they pick a few of them to receive free print and electronic subscriptions of all three journals as a gesture of encouragement.

Dr Bidyadhar Subudi (Prof., SES) has been elected as Vice-President, Automatic Control & Dynamic Optimization Society (ACDOS) w.e.f. October, 2020.

SCHOOL OF CHEMICAL AND MATERIALS SCIENCES

Publications

"Catalytic Enantiocontrol Over a Non-Classical Carbocation" Properzi, R.; Kaib, S. J. P.; Leutzsch, M.; Pupo, G.; **Mitra, R.**; De, K. C.; Song, L; Schreiner, R. P.; List, B.* *Nat. Chem.* ***2020***. 12, 1174–1179.

"Chemical Tools for Illumination of Tuberculosis Biology, Virulence Mechanisms and Diagnosis" Kumar, G.; **Narayan, R.**; Kapoor, *S. J. Med. Chem* 2020. Accepted.

SCHOOL OF ELECTRICAL SCIENCES

Publications

Naresh Mandal, Victor Pakira, Nirmalya Samanta, Naren Das, Suman Chakraborty, **Bidhan Pramanick**, Chirasree Roy Chaudhuri, "PSA Detection Using Label Free Graphene FET with Coplanar Electrodes based Microfluidic Point of Care Diagnostic Device", *Talanta,* Vol. 222, 2021.

R. T. Arumalla, **S. Figarado** and N. Harischandrappa, "Dodecagonal Voltage Space Vector Based PWM Techniques for Switching Loss Reduction in a Dual Inverter Fed Induction Motor Drive," *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, Vol. 1, No. 2, pp. 182-191, Oct. 2020, doi: 10.1109/JESTIE.2020.2999583.

Ravi Teja Arumalla, **S. Figarado**, Nagendrappa Harishchandrappa, " Analysis and Experimental Investigation of Double Switching Active Vector Sequences in Dodecagonal Space Vector Structure" presented in *IECON 2020 - 46th Annual Conference of the IEEE Industrial Electronics Society*, Singapore, October 18- 21, 2020.

Aayush Suri, John Leo V., Saquib Khan, **Shakthi Prasad D.**,"Signal Processing Technique for AC Corona Pulses and Charge Computation", presented at *2020 IEEE IAS Annual Meeting*, October 10- 16, 2020.

Shakthi Prasad D., Prasoon Vishwakarma, "Impact of Lightning Channel Base Current (CBC) Function Modelling on Computed Lightning Induced Overvoltage Waveshapes", presented in *2020 IEEE IAS Annual Meeting*, October 10- 16, 2020.

S. Baka, **S. Sashidhar** and B. G. Fernandes, "Design of an Energy Efficient Line-Start Two-Pole Ferrite Assisted Synchronous Reluctance Motor for Water Pumps", *IEEE Transactions on Energy Conversion*, Vol.PP, No.PP, pp. 1-10 (Early access).

N. Nambath, R. Ashok, S. Manikandan, N. B. Thaker, M. Anghan, R. Kamran, S. Anmadwar, and S. Gupta, "All-Analog Adaptive Equalizer for Coherent Data Center Interconnects," *IEEE/OSA Journal of Lightwave Technology,* November 2020.

Mithu Sarkar and **B. Subudhi**, "Unified Smith Predictor based Loop Shaping H Damping Controller for Mitigating Inter-Area Oscillations in Power", *IET Cyber-Physical Systems: Theory & Applications,* 0.1049/iet-cps.2020.0030.

P. K. Ray, S. K. Dash, **B. Subudhi** and Suratsavadee K. Korkua, "Mitigtation of Power Quality Issues by UPQC", *Intl. Journal of Emerging Electrical Power System.* (Accepted)

D. Mahapatra and **B. Subudhi**, "Weighted Majority Rule Ensemble Classifier for Sensor Fault classification for Plasma Position Control in Tokamaks", *Fusion Engineering and Design (Elsevier).* (Accepted)

S. Jagdev, **B. Subudhi** and A.Naskar, "Robust TDF H Control Design for a TRMS with External Disturbances and Model Uncertainties", *Journal of Systems and Control Engineering, IMechE(UK)* DOI:10.1177/0959651820954969.

D. Dey and **B. Subudhi**, Design, Simulation and Economic Evaluation of 90 kW Grid Connected Photovoltaic System, *Energy Reports(Elsevier*), vol.6,pp.1778–1787, 2020.

K. S. Lochan, B. K. Roy, **B. Subudhi** and Jai Prakash, "Adaptive Global Super-twisting Sliding Mode Control Based Filter for Trajectory Synchronisation of Two-link Flexible Manipulators", *Intl. Journal of Systems Science,* doi.org/10.1080/00207721.2020.1795947.

B. Subudhi, Neelakandan R. and B. Rath, " Intelligent Navigation and Adaptive Controller for AUV–A Hybrid Approach with KF-CS and Deep Learning in NARMAX Model", *Intl. Marine Science & Technology Week*, 12-16 Oct 2020, France.

Invited Talks/Seminars/Workshops/Webinars

Dr Neelakandan R., "Massive MIMO and Millimeter Wave Technologies for 5G Networks", AICTE Sponsored FDP on *Signal Processing in Wave Massive MIMO - A Compressed Sensing Perspective,* August 18-29, 2020.(Invited Talk)

Dr Nandakumar Nambath, "How Can We Do VLSI Design Using Open Source Software?", TEQIP - III Sponsored Faculty Development Program on *Emerging Tools and Techniques in Communication Systems (ETTCS-2020),* September 14-18, 2020, SKIT, Jaipur, Rajasthan.

Dr Neelakandan R., "Massive MIMO in 5G - Spatial Multiplexing and Beamforming", AICTE Sponsored FDP on *AI and 5G Communication Technology*, October 26- 31, 2020.

Dr Shakti Prasad D., " Understanding Electromagnetics", GMIT Bharathinagar, Karnataka, November 9, 2020.

SCHOOL OF MATHEMATICS AND COMPUTER SCIENCE

Publications

Jieru Zhao, Tingyuan Liang, Liang Feng, Wenchao Ding, **Sharad Sinha**, Wei Zhang and Shaojie Shen, "FP-Stereo: Hardware-Efficient Stereo Vision for Embedded Applications," *30th International Conference on Field-Programmable Logic and Applications (FPL 2020),* Gothenburg, Sweden, August 2020, pp. 269-276.

Julien Roth and **Abhitosh Upadhyay**, " Anisotropic Eigenvalues Upper Bounds for Hypersurfaces in Weighted Euclidean Spaces", *Differential Geometry and its Applications*, Accepted on September 30, 2020.

Invited Talks/ Seminars/ Workshops/ Webinars

Dr Amaldev Manuel,"Introduction to Evidence-Based Learning Strategies", IIT Goa, August 25, 2020.

Dr Lok Pati Tripathi, "An Efficient Finite Element Method for Pricing European Style Options", *International Conference on Computational Sciences-Modelling, Computing* and Soft Computing, National Institute of Technology Calicut, Kerala, September, 2020.

Dr Sharad Sinha, "Introduction to IoT, Scope and Challenges", *ATAL Faculty Development Program on IoT,* Indian Institute of Technology Palakkad (IIT Palakkad), October 17, 2020.

Dr Sharad Sinha, "Challenges and Opportunities in Machine Learning on IoT Devices", *ATAL Faculty Development Program on IoT*, Amity University, October 16, 2020.(Keynote Talk)

Dr Sharad Sinha, "Computer Architecture and Programming", *Alva's Technothon 2020* in Association with IIIT Allahabad, October 25, 2020.

Outreach

Dr Sharad Sinha, coordinated the Pan-India Online Course "HPC Shiksha - Basics of High Performance Computing"- on behalf of IIT Goa, IIT Madras, IIT Kharagpur, IIT Palakkad and CDAC. The course runs for 3 months beginning November 9, 2020.

SCHOOL OF MECHANICAL SCIENCES

Publications

Raju, Shilpa R., **Sreenath Balakrishnan**, Somanna Kollimada, K. N. Chandrashekara, and Aruna Jampani. "Anti-Tumor Effects of Artemisia Nilagirica Extract on MDA-MB-231 Breast Cancer Cells: Deciphering the Biochemical and Biomechanical Properties via TGF-β Upregulation", *Heliyon* 6, no. 10 (2020): e05088.

Sunay Pai, **Rajesh S. Prabhu Gaonkar,** "Using Interpretive Structural Modelling, Fuzzy Analytical Network Process, and Evidential Reasoning to Estimate Fire Risk Onboard Ships", *International Journal of Performability Engineering (IJPE),* Vol. 16, No. 9 pp. 1321-1331.

Ashish Bateja, "Velocity Scaling in the Region of Orifice Influence in Silo Draining Under Gravity", *Physical Review E,* 042904, **102**, 2020.

Invited Talk/Seminars/Workshops/Webinars

Dr Rajesh S. Prabhu Gaonkar, "Introduction to Reliability Engineering", *Technical Education Quality Improvement Program – III (TEQIP – III),* State Project Implementation Unit (SPIU), Rajasthan, September 4, 2020.

SCHOOL OF PHYSICAL SCIENCES

Publications

Das S. K., Alam Jan-e, Plumari, Salvatore, Greco Vincenzo, (2020),"Transmission of Airborne Virus Through Sneezed and Coughed Droplets", *Physics of Fluid,* 32, 097102, DOI:10.1063/5.0022859.

Liu J. H., Plumari S., **Das S. K**., Greco V., Ruggieri M., (2020), "Diffusion of heavy quarks in the early stage of high-energy nuclear collisions at energies available at the BNL Relativistic Heavy Ion Collider and at the CERN Large Hadron Collider" *Physics Review C,* 102, 044902, DOI:10.1103/PhysRevC.102.044902.

K. C. Kharkwal, Roumita Roy, Harish Kumar, A. K. Bera, S. M. Yusuf, A. K. Shukla, Kranti Kumar, **Sudipta Kanungo**, and A. K. Pramanik, (2020), "Structure, Magnetism, and Electronic Properties in 3d−5d Based Double Perovskite (Sr1−xCax)2FeIrO6 (0≤x≤1)", *Physics Review B* 102, 174401DOI:https://doi.org/10.1103/PhysRevB.102.174401.

Invited Talk/Seminars/Workshops/Webinars

Dr Sudipto Kanungo, " Modelling of Magnetism in Density Functional Theory", *Winter School on Electronic Structure and Molecular Dynamic Simulations* Using Open Source Softwares: From Theory to Practice, September 30, 2020.

Dr Santosh Kumar Das, "Heavy Quark Dynamics in QCD Matter",*Workshop: Extreme Nonequilibrium QCD Online*, International Center for Theoretical Science, Bangalore, October 5-9, 2020.

STUDENT JUNCTION

IN FOCUS

STUDENT COUNCIL ELECTION

*by **Ms Svara Mehta**, Student Editor*

The Student Council election has always been an event everyone at IIT Goa looks forward to, as it marks the beginning of important tenures for the upcoming academic year. Since they bring forth a time of vigorous campaigning and tremendous enthusiasm, elections are an event the campus public looks forward to with much anticipation. Since we joined, we have been privy to countless hilarious and riveting tales of campaigning days and what comes after, including stories of winners being congratulated with buckets of water, given a thrashing in jest and forced to throw parties for their friends. This year, we, the second years, were geared up to experience the same. Unfortunately, the pandemic ruined our plans, or so we thought. The virtual election that unfolded gave the event a completely different flavour and rendered us with a slightly different story to tell and a fresh legacy to add to a familiar practice.

We had a wonderful experience as freshers overwhelmingly due to the ideas and efforts of our seniors and filling in their shoes was always going to be a difficult task. The week before the voting date was announced flew in a flurry of video calls, campaigning and strategizing. Each one of us made the most of our social media platforms, supporting and campaigning for our friends. This was the first time the students got to be a part of the entire voting process. Also, being the first large-scale student event to be announced during the lockdown, the Student Council elections brought the student community together and elevated everyone's spirit.

The elections were announced on **August 25, 2020.** The interested candidates had to file their nominations online and submit a manifesto by **August 30, 2020**. The eligibility criteria for each candidate was verified by the concerned authorities and the final list was released on September 2, 2020. The candidates also had to make a soapbox video, not exceeding 10 minutes, to explain their motto and vision regarding the post they were contesting for.

These videos were released to the students for review on **September 4, 2020** and was followed by a Q&A on **September 5, 2020**. Voting was thrown open soon after on **September 6, 2020** from 3:00-6:00 pm. After much discussion and debates and rising anticipation regarding who might win, the results were announced on **September 8, 2020**. Even though this was a new experience, and perhaps not one we ever anticipated having, these student elections helped us come together and unite. It reminded us that even in the face of adversity, an unified celebration is possible if we stick together as a community.

STUDENT COUNCIL 2020-2021

Academic Affairs

Mr Devang Jain	General Secretary
Mr Shivam Jaiswal	Branch Rep (CS)
Mr Vaibhav Kumar	Branch Rep (ME)
Mr Shailesh Shah	Branch Rep (EE)
Mr Vaibhav Kumar Rai	Post-graduate Rep

Hostel Affairs

Mr Sohan Kshirsagar	General Secretary
Mr Sarthak Walia Mr Himanshu Singh	Maintenance Secretary
Mr Rahul Goyat	Mess Secretary
Mr Shubham Garg	Student Medical Rep
Ms Tanuja Bathena	Hostel Representative for Girls

Cultural Affairs

Mr Saksham Goyal	General Secretary
Mr Adwait Agashe	Art Secretary
Mr Siddhant Yadav	Literary Secretary
Mr Surya Shukla	Media Secretary
Mr Aadil Khan	Event Management

Technical Affairs

Mr Shreyas Panwar	General Secretary
Mr Harshal Shrisath	Electronics & Robotics Secretary
Mr Raghvendra Singh	Electronics & Robotics Secretary

Sports Affairs

Mr Satvik Sogun	General Secretary
Mr Satvik Bhatnagar	Indoor Sports Secretary
Mr Om Patil Mr Gaurav Yadav	Outdoor Sports Secretaries
Ms Jaishika Korivi	Sports Secretary for Girls

Apart from the elected members, some students were also appointed as club heads by the General Secretaries through mutual consent.

Mr Namami Shankar	Orion (music club)
Ms Svara Mehta	Eunoia (fine arts club)
Ms Sejal Gupta	Meraki (dance club)
Ms Mansi Rawat	Qalam (writing club)
Ms Gunjan Mayekar	Panache (oratory club)
Mr Akshay Kumar Jaiswal	Mukota (dramatics club)
Ms Khushboo Gupta	Grafiko (design team)
Mr Jainam Jain	Electronics and Robotics club
Mr Naveen Mahanwal	Originals (photography club)
Mr Saurabh Kuradkar	Junior Event Manager
Mr Yash Parmar	Go Myno club
Ms Aditi Saxena	Developer Student club
Mr Tushya Chedda	Team Steel-X
Mr Darshay Naik	M-Dash club
Mr Piyush Singh	Captain of the IIT Goa Motorsports team
Mr Kaushal Gagan	Architect club

ORIENTATION WEEK – THE FRESHER PERSPECTIVE

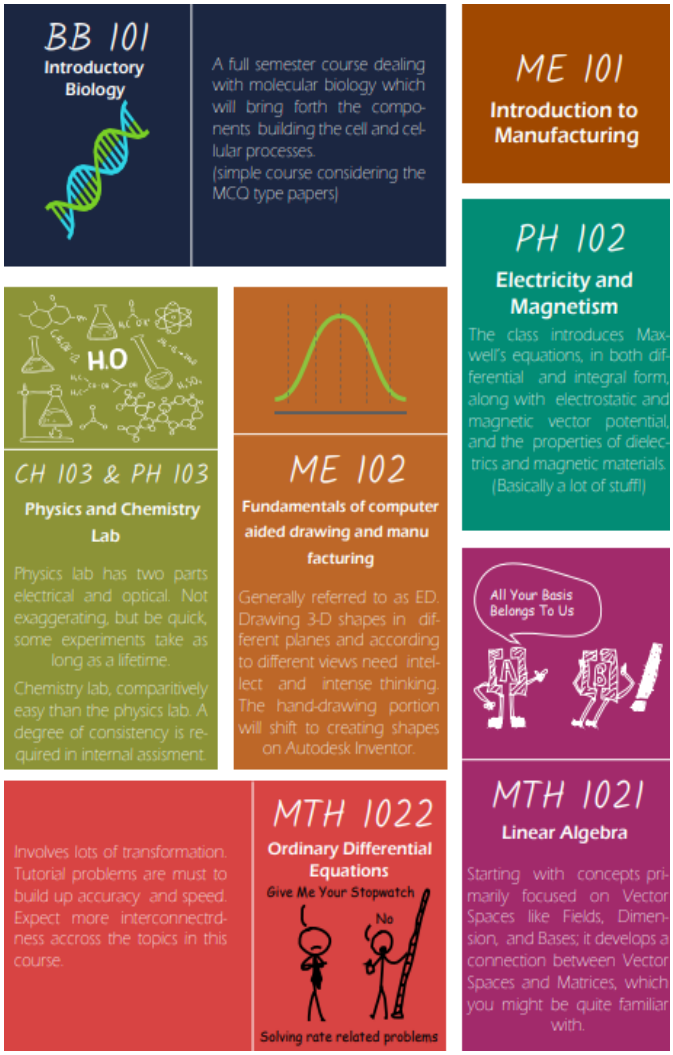
by Ms Nandini Mawane, 2020 batch

An orientation week was organised for the newly admitted students from **November 18-25, 2020** by the IIT Goa Student Council. The week-long program aimed at providing students a glimpse at the working of various councils of the institute: Academic, Sports, Technical, Training and Placement, Institute Innovation, Hostel and Cultural Council, respectively. Owing to the COVID-19 pandemic, the orientation was held online.

Each day of the week was devoted to one specific council, the orientation of which was presided over by the respective General Secretary. It began with the General Secretary addressing the students and welcoming them to the institute, following which the freshers were introduced to members of the council. Functions of the council were discussed in detail, moreover, students were made aware of their role within the domain of the particular council.

The presentation was followed by a Q&A session, which allowed the students to interact with their senior batch and seek clarifications regarding the working of the council and any questions they had in mind.

It is the response of an audience that determines if an event met its purpose. In my view, the orientation week was a success. Not only did we, the freshers, learn about the institute and how it functions, but we also developed a sense of appreciation for the faculty and senior students. The exciting and informative 7-day program did indeed help initiate us into what I would like to believe would be a successful undergraduate experience.



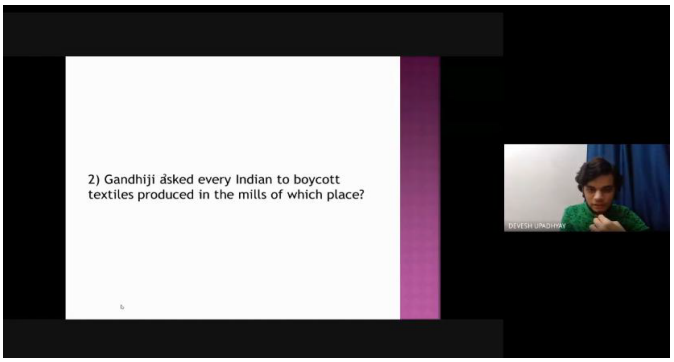
Gandhi Jayanti Celebrations

Despite the restrictions imposed by the COVID-19 pandemic, the IIT Goa community came together to celebrate the 151st birth anniversary of Mohandas Karamchand Gandhi, the Father of the Nation. In this regard various competitions were organized online, the details of which are given below.

Debate Competition

IIT Goa Students Cultural Council organised an online debate competition on **September 27, 2020**. The topic of the debate was 'Is Banning of Chinese Products a Feasible Option?' Each participant was given six minutes. In the first four minutes each participant had to present their argument and during the remaining two minutes the floor was thrown open to questions. The event was judged by **Dr Amaldev Manuel** (Asst. Prof., SMCS) and **Dr Sabiha Hashmi** (Asst. Prof., SHSS) and moderated by **Ms Gunjan Mayekar** (IIyr, UG, SMCS) and **Mr Siddhant Yadav** (IIyr, UG, SMCS)**. Mr Jeeshan Ansari** (Iyr, M.Tech, SMS) and **Mr Siddharth Solanki** (IIIyr, UG, SMCS) secured the first and second place respectively and **Mr Akshay Kumar** (IVyr, UG, SES) secured the third place. The results of the competition were announced during the Gandhi Jayanti celebrations on **October 2, 2020.**

Quiz Competition



Snapshot of the quiz held online

The Students Cultural Council organised an online quiz competition on **October 1, 2020**. Drawing from events in Mahatma Gandhi's life, the quiz consisted of two rounds. Only team entries were allowed, with each team consisting of two members. The first round, conducted by **Ms Gunjan Mayekar** (IIyr, UG, SMCS), was partially based on a documentary screened earlier and included some general questions on Mahatma Gandhi's life. The two teams that qualified for the finalswere quizzed by **Dr Sabiha Hashmi** (SHSS) on a feature film on Gandhi's life (link to which had earlier been shared). **Mr Deep Kumar Gupta** (IIyr, UG, SMCS) and **Mr Raj Kanwar** (IIyr, UG, SMCS) emerged as winners.

Dance Rendition

https://youtu.be/CC_ggr9t-Ys

Meraki, the institute dance club, and **Orion**, the institute music club, left no stone unturned in celebrating the spirit of patriotism on the occasion of Gandhi Jayanti. The two clubs came together to create two videos to commemorate this occasion. Meraki club head **Ms Sejal Gupta** (IIyr, UG, SMS) **along** with **Ms Yuti Vagasia** (IIyr, UG, SMS) and **Ms Gayathri V. Krishna** (IIyr, UG, SMS) gracefully danced to the song **'Jai Hind'** for the dance video, **Mr Surya Shukla** (IIyr, UG, SES)**, Ms Gunjan Mayekar** (IIyr, UG, SMCS)**, Mr Shantanu Mehra** (IIyr, UG, SMCS)**, Mr Ujjwal Rana** (IIyr, UG, SES) and **Mr Kartik Anand** (IIyr, UG, SMCS) turned vocalists, reprising 'Raghupati Raghav Raja Ram' for the music video. The latter were joined by Orion club head, **Ms Namami Shankar** (IIyr, UG, SES) on keyboard, **Mr Adwait Aghashe** (IIyr, UG, SMCS) on tabla, and **Mr Kartik Anand** on guitar. The cover of the song was mixed by **Mr Arpit Maurya** (IIyr, UG, SES) and the dance video was edited by **Mr Surya Shukla** and **Mr Naveen Mahanwal** (IIyr, UG, SES)**.**

Unity Day

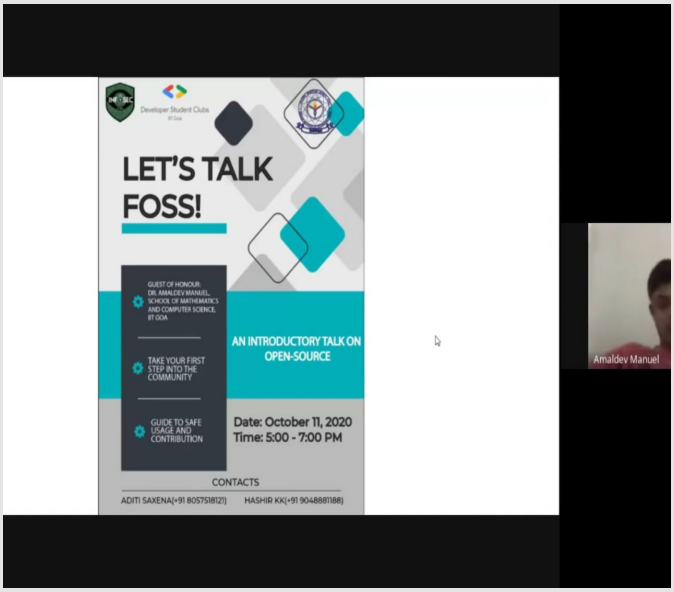
Eunoia, the institute fine arts club, headed by **Ms Svara Mehta** (IIyr, UG, SMS)**,** organised a week-long event on Instagram to mark the occasion of Unity Day. The participants were asked to complete the quote **'Divided by quarantine, United by _____'** with any idea, emotion or memory and depict the same in a drawing, doodle or sketch. Along with this they were asked to attach a picture or tag someone with whom they relate the idea or memory to. This event was an attempt to refresh campus memories and to renew the spirit of the student community who have been separated from their second home due to the pandemic.

Grafiko Workshop

Grafiko, the institute student design team, headed by **Ms Khushboo Gupta** (IIyr, UG, SCS), organised an introductory workshop on Introduction to Graphic Designing on **October 9, 2020**. Significant fundamentals including colour theory, typography and basic designing equipment were discussed. This workshop was aimed at familiarizing students with graphic designing concepts so that they may be taken up as a productive hobby during the lockdown.

New logo of the club

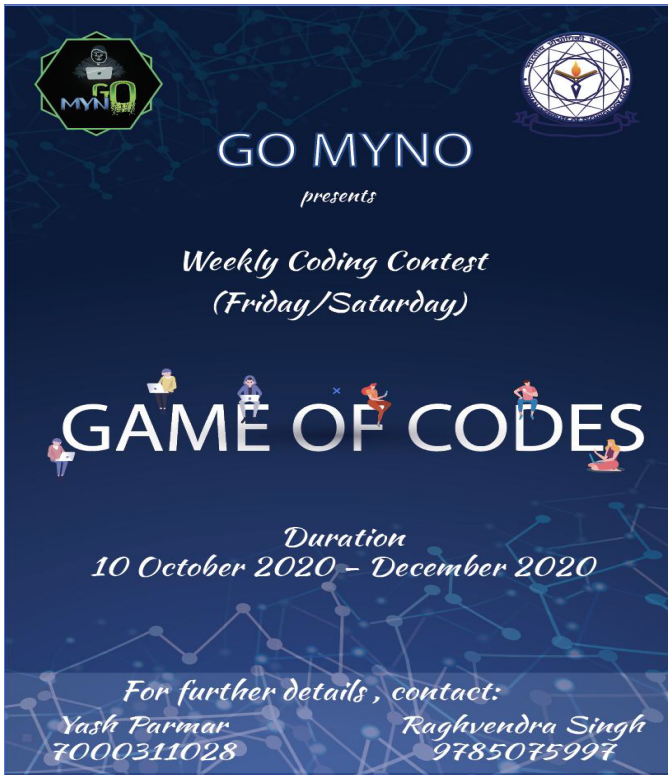
Let's Talk FOSS!



Free and open-source software (FOSS) allows users and programmers to edit, modify or reuse the software's source code. This gives developers the opportunity to improve program functionality by modifying it. To familiarize students with FOSS, **DSC IIT Goa** and **Infosec IIT Goa** organised an event titled Let's Talk Foss on **October 12, 2020**. The session began with an address by **Dr Amaldev Manuel** (SMCS) and was followed by presentations by DSA and Infosec. DSA's presentation dealt with issues such as how to contribute to the open source community, GitHub basics and how to resolve the common challenges faced by amateur contributors, while InfoSec's presentation focused on FOSS security. The session concluded with a presentation on different global open-source contests like Google Summer of Code and Hacktoberfest. Information on how toparticpate in

these contests was also shared with the participants. More than 100 students joined this session and resolved their doubts regarding FOSS.

Game of Codes (GoC)



Having a basic knowledge of coding has become mandatory in the digital age. It is also important for students to have a sound understanding of the technology that surrounds them. Accordingly, the **Go Myno club** of IIT Goa organized a 'Game of Codes' (GoC) to initiate students into competitive programming. Planned in different phases for the academic year 2020-21, the first phase of GoC was held from **October 12, 2020** to **November 1, 2020**.There were different rounds and it turned out to be a great learning experience for the participants. Along with this, the M-DASH club of IIT Goa also organized a SolidWorks Workshop to help the students sharpen their industrial knowledge and mechanical designing skills. The workshop was conducted on 3 different weekends, first being held on **September 27, 2020.**

STUDENT ACCOLADES

Mr Siddharth Singh Solanki (IIIyr, UG, SMCS) procured a summer research internship (**June - July 2020**) at IIT Roorkee and received the best presentation award from the internship committee for his research on 'Dynamic Hand Gesture Recognition', conducted under the supervision of Prof. Balasubramaniam Raman from IIT Roorkee.

Mr Aswin B. (IVyr, UG, SME) successfully completed a special program at the Asian Institute of Technology Bangkok, Thailand and submitted his research paper on 'Pliability of Thermal Energy Storage and its Integrated Application'.

Ms Prachi Kashikar (Ph.D., SMCS) won the second prize in the Pan-India Short Fiction Writing Competition organized by IIT Jammu's Literary Club. Her short story, titled **"Tigers of War"** and based on the theme **'Remake History'** , beat 238 other entries to secure the prize.

Mr Saurabh Singh (IVyr, SMS) presented the results of his B.Tech project 'Modelling of Turbulent Non-Reacting Propane Jet using OpenFoam RANS and LES Models' - at the International Conference on Recent Advances in Computational and Experimental Mechanics held between **September 4-6, 2020**, IIT Kharagpur. Mr Singh worked with **Dr Rudra N. Roy** for his project.

Ms Pavitra Bhade (Ph.D., SMCS) was invited as Lab Instructor for Computer Architecture and Programming at Alva's Technothon conducted in association with IIIT Allahabad from **October 26-27, 2020.**

Offshore

(Original Creative Contributions)

मेरे मन की अभिलाषा!

- आशीष कुमार UG, 2016

है ख़्वाहिश मेरी, प्रियतमा!
परियों में मैं देखूं तुम को,
जीवन के निष्कपट निश्छल ,
घड़ियों में मैं देखूं तुम को,
तुम ख़्वाब शरीर की होकर के,
आओ पलकों के द्वार कभी,
मैं कब से तेरी राह निहारूं ,
मेरे मन की अभिलाषा!

तुम कहती हो मैं तुम्हें भुला दूँ,
माज़ी (अतीत) के सब पृष्ठ मिटा दूँ,
पत्थर पर लिखा मिटा सकता हूँ,
दिल पर लिखा मिटे तो कैसे,
क्या मेरा मन भुला सकेगा,
जीवन का आधार कभी,
मैं शून्य में तुम को देख रहा हूं,
मेरे मन की अभिलाषा!

ईद नहीं आती है तेरी,
महताब अधूरा रह जाता है,
आँखें छलका करती हैं,
हर ख़्वाब अधूरा रह जाता है,
सोचता हूँ कहीं ये ना हो,
मैं हो जाऊँ मिस्मार भी,
तुझे हाल कहूँ किस तौर कहूँ
मेरे मन की अभिलाषा!

दुनिया दुनिया विचर रहे हैं
टूट रहे हैं बिखर रहे हैं,
हो जाए हर तलाश पूरी,
फिर भी कुछ तो रह जाना है,
दुनिया लाँघु, लाँघी न जाए,
ख़्वाहिश की दीवार कभी,
हर हाल अधूरी रहती है तू ,
मेरे मन की अभिलाषा!

क्या होगा क्या यूं होगा,
हम तुमसे जुदा हो जाएँगे,
गूँज गूँज कर मस्ती हुई सी,
कोई सदा हो जाएंगे,
हो चाहे कुछ पर होगा नहीं,
किस्सा अपना बेकार कभी,
मैं चाहूँ भी तो मर ना सकूँ,
मेरे मन की अभिलाषा!

मिलना बिछड़ना क्या है आख़िर,
कोई धुंध है कोई धुआँ है आख़िर,
हो दूर बहुत तुम हाँ लेकिन,
मेरे अंदर तुम रहती हो,
इस बार मिले ना मिले मगर,
मिल जाएँगे उस पार कभी,
मैं ख़्वाब में तेरी सम्त बढ़ूँ,
मेरे मन की अभिलाषा!

तुम अपनी दुनिया की शहज़ादी,
में धूल से ज़्यादा कुछ भी नहीं,
मेरी प्रीत है मेरी गुस्ताख़ी,
इक भूल से ज़्यादा कुछ भी नहीं,
क्या तुम ने यह सोचा था,
यूँ मिलेंगे दो अग्यार कभी,
जी चाहे अक्सर यह भूल करूँ,
मेरे मन की अभिलाषा!

है ख़्वाहिश मेरी, प्रियतमा!
परियों में मैं देखूं तुम को,
जीवन के निष्कपट निश्छल ,
घड़ियों में मैं देखूं तुम को,
तुम ख़्वाब शरीर की होकर के,
आओ पलकों के द्वार कभी,
मैं कब से तेरी राह निहारूं ,
मेरे मन की अभिलाषा!

तुम कहती हो मैं तुम्हें भुला दूँ,
माज़ी (अतीत) के सब पृष्ठ मिटा दूँ,
पत्थर पर लिखा मिटा सकता हूँ,
दिल पर लिखा मिटे तो कैसे,
क्या मेरा मन भुला सकेगा,
जीवन का आधार कभी,
मैं शून्य में तुम को देख रहा हूं,
मेरे मन की अभिलाषा!

ईद नहीं आती है तेरी,
महताब अधूरा रह जाता है,
आँखें छलका करती हैं,
हर ख़्वाब अधूरा रह जाता है,
सोचता हूँ कहीं ये ना हो,
मैं हो जाऊँ मिस्मार भी,
तुझे हाल कहूँ किस तौर कहूँ
मेरे मन की अभिलाषा!

दुनिया दुनिया विचर रहे हैं
टूट रहे हैं बिखर रहे हैं,
हो जाए हर तलाश पूरी,
फिर भी कुछ तो रह जाना है,
दुनिया लाँघु, लाँघी न जाए,
ख़्वाहिश की दीवार कभी,
हर हाल अधूरी रहती है तू ,
मेरे मन की अभिलाषा!

क्या होगा क्या यूं होगा,
हम तुमसे जुदा हो जाएँगे,
गूँज गूँज कर मस्ती हुई सी,
कोई सदा हो जाएंगे,
हो चाहे कुछ पर होगा नहीं,
किस्सा अपना बेकार कभी,
मैं चाहूँ भी तो मर ना सकूँ,
मेरे मन की अभिलाषा!

मिलना बिछड़ना क्या है आख़िर,
कोई धुंध है कोई धुआँ है आख़िर,
हो दूर बहुत तुम हाँ लेकिन,
मेरे अंदर तुम रहती हो,
इस बार मिले ना मिले मगर,
मिल जाएँगे उस पार कभी,
मैं ख़्वाब में तेरी सम्त बढ़ूँ,
मेरे मन की अभिलाषा!

तुम अपनी दुनिया की शहज़ादी,
में धूल से ज़्यादा कुछ भी नहीं,
मेरी प्रीत है मेरी गुस्ताख़ी,
इक भूल से ज़्यादा कुछ भी नहीं,
क्या तुम ने यह सोचा था,
यूँ मिलेंगे दो अग्यार कभी,
जी चाहे अक्सर यह भूल करूँ,
मेरे मन की अभिलाषा!

मेरा मन दरिया औ रवानी सी तुम,
मेरा किस्सा मेरी कहानी सी तुम,
मैं जब जब खुद को गढ़ता हूँ,
तामीर में तुम भी होती हो,
मुझे पढ़ने वाले समझेंगे,
तुम को ही मेरा सार कभी,
मैं खुद पर तुम को ताहीर करूँ,
मेरे मन की अभिलाषा!

मेरे पहलू में हो बैठी हुई,
मैं कब से तुम को देख रहा हूँ,
सब कहते हैं यहां कोई नहीं,
मैं तब से तुम को देख रहा हूँ,
मेरा सच भी और फ़साना भी तुम,
जा सकूँ ना तुमसे पार कभी,
मैं यूँ ही तुम को देखा करूँ,
मेरे मन की अभिलाषा!
ज़हन की सारी किताबों पर,
मेरे अंतर में मेरे ख़्वाबों पर,
यूँ उभरती हो तुम कभी कभी,
गोया क्षितिज का इंद्रधनुष,
मैं सोचता हूँ कि बिखरे ना,
मेरे सपनों का संसार कभी,
तुम अक्सर यूँ ही आती रहो,
मेरे मन की अभिलाषा!

जीवन की विषम पगडंडी पर,
लड़खड़ाता सा चला जाता हूँ,
सुर्ख़ उफक के सूरज सा,
पल पल जैसे ढला जाता हूँ,
तू सदैव पूनम की चाँद सरीखी,
नहीं घटता तेरा आकार कभी,
यूँ ही शाद रहे आबाद रहे तू ,
मेरे मन की अभिलाषा!

कभी सोचूँ सब बेकार गया,
मैं प्रीत की बाजी हार गया,
फिर सोचूँ कि यह खेल कहाँ है,
भावों के इक डोर है पावन,
पढ़ मीर-कबीर ये सिखा मैंने,
नहीं होती प्रीत में हार कभी,
मैं हार के तुम को जीत रहा हूँ,
मेरे मन की अभिलाषा!

नयनों के स्वप्न पटल पर,
बलखाती हुई सी रेख कोई,
तेरी यादों की उत्पाती लहरें,
भँवर उठाती हैं देख कोई,
तेरा आना जाना लगा रहता है,
नहीं उतरे मेरा मझधार कभी,
मैं विफल विफल फिरूँ हरसू,
मेरे मन की अभिलाषा!

ARE WE WIRED TO WIN?

*by **Atharva Navaratne**, Iyr, UG, SMS*

What if I tell you that even when you think you are not, you are actually winning in whatever it is that concerns you?

What if I say that everything that goes on and about, is actually a victory? It might seem that I have lost my mind, or you may be convinced that I am talking to someone else, anyone else, but not you. Let me explain before this gets melodramatic.

Here's a situation most of us can relate to - we have one of those days when we look at ourselves and realise we don't quite have the kind of physique we want.We think about how great our personality would be if only we could get in the right shape. And so we (out of momentary surge of motivation) decide to stick to with eating right. For a couple of days, or maybe for a whole week or so, we totally pull it off! But sooner or later (in my case, mostly sooner) we slack.

From no carbs to half a bread-loaf everyday, from no sugar to can of cola every Sunday. And then, eventually, we let go of it altogether. This is an absolute win!

When we fixate our minds on making a positive change of any sort, there's a minor subconscious tingling that disagrees. "I am going to run 5 kilometers everyday", you claim. "We'll see about that", says you.

"I'm going to read at least 20 pages everyday", you promise yourself. "Maybe", you add.

The first instance in both cases is kept on the record. The second, forgotten because we are so excited by the prospect of the results of the first, that we don't pay heed to the second. We believe we'll make it happen, but somewhere deep inside, we doubt it. And that "second thought" is very subtly brought up, with just enough stealth for us to not realise it, before it starts growing. That is, we start noticing the cakes we that we swear we never saw before in a nearby bakery, we are too tired to get out of bed early and we are too tired late at night to spend some time reading, that we could otherwise spend sleeping. Soon enough, it's well grown. But it's our own subconscious that planted the thought. It's our own project (in disguise) that we so certainly complete (when we mess things up). We won.

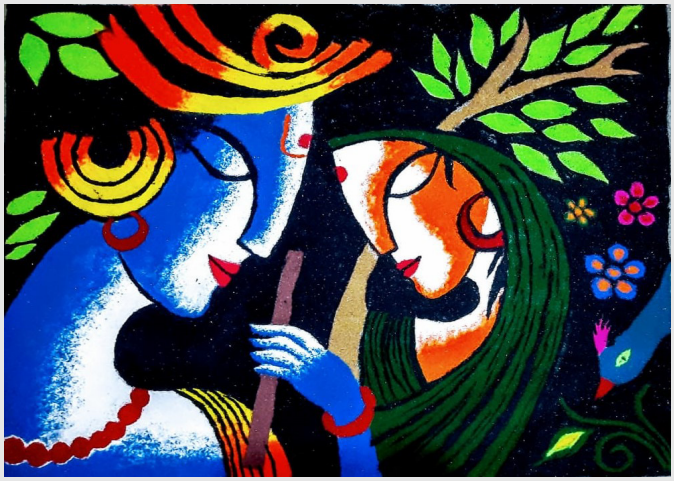
We are survival machines. And (arguably) the best way to survive what is to come, is to re-live what has been. Because even if you have had scores of bad days and thousands of negative considerations, you survived.

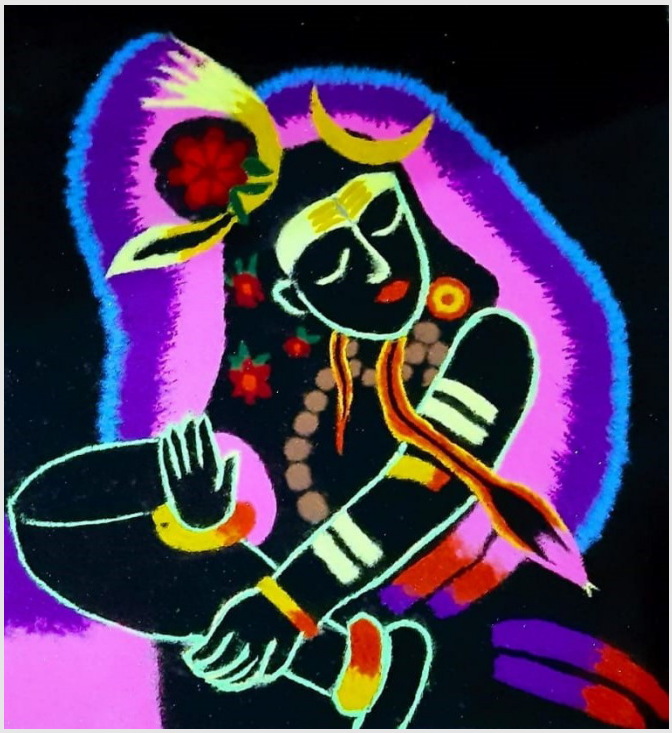
It may have happened that you commit to something and then dishonour that commitment. Or that you try to step out of that restrictive domain we call "comfort zone" but get right back into it without even realising how. But none of that matters to the practical version of you, because you made it this far.

Now, what I wonder (and what got me talking of this) is, can we turn it around? Can we use that hardwiring to actually help us, somewhere down the line? If we were to to make ourselves actually (not "actually" in the conventional sense, which we just discussed is not as robust, but the real "actually") believe we can do something, will we go on and do it? Maybe, I'm not too sure. But if it works one way, it could possibly, and quite probably, work the other way too.

For all we know, the mind might as well be unconquerable. I say this only because we all try to tame it, but none of us have ever been able to. So, perhaps making precise considerations and setting reasonable standards could leave us close to where we want to be, if not take us exactly there. Again, this is only a guess. Or a hope, maybe. But, leaving technicality aside, we have all the reasons to believe that we are, in fact, intrinsic winners.

WINNING ENTRY FOR 'VIBRANCE', DIWALI RANGOLI COMPETITION





*by **Yuti Vagasia**, IIIyr, UG, SMS*

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