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Placement system to blame for IIT grads' burnout: Survey

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Mumbai: Around 55% of IIT-Bombay's graduates placed with various companies two years ago have switched jobs and 35% are unsure whether to stay on. This, revealed in a survey by the institute's students' media body, indicates that IIT students aren't making the right choices during campus placements.

Over 50% of the respondents say the placements process is to be blamed, not just in IIT-B, but all engineering institutes in the country. The pressure to land a job in the first few days and societal expectations are leading to students making wrong choices. One of the drawbacks of the system is to invite non-core companies in the initial stages of the placement process, which creates the perception that high-paying, non-core jobs are 'dream jobs'.

The survey was of around 220 respondents from the 2011, 2012 and 2013 batches and was published in the latest edition of the students' magazine Insight. It reports that around 35% of those who switched jobs thought while making their initial pick that it was a perfect fit for them.

Over a third of the respondents claimed that they moved jobs within three years, including some who quit within a year, as reported by **TOI** on Thursday.

An editor of the magazine said, "The placement process is currently aimed at placing a maximum number of students. This has to change to a system where the focus would be more on placing students in the right jobs. A lot of non-core companies come to the campus in the first few days and pick the best of the lot. The institute can, in future, call the core companies before the process begins."

It has a lot to do with the student culture too, said a student. "The Day One hype is mainly due to high-paying non-core sector jobs, which most students perceive as (glamorous jobs)," said the report.

Economic Times ND 30/01/2015 P-1

Kris' Brain Wave to Trigger Computing Tsunami

Infosys co-founder bets $50 m on research to create brain-inspired computing

ARINDAM

Jayadevan PK & Pankaj Mishra

Bengaluru: He's bet $50 million of his $1.5 billion net worth on brain, and he's convinced there will be a big payoff.

When Kris Gopalakrishnan, the now-retired Infosys cofounder, put one chunk of his net worth on research that aims to create the next computing revolution — computers modeled on brain functioning — he was going off the beaten track. HNI backing of new ventures tend to be more conservative and few take big bets on frontier research.

His funding of brain research, through $36 million for Indian Institute of Science (IISc) as well as funding six chairs in the institute and IIT-Madras, puts Gopalakrishnan in good company.

The logic is to put in serious money early and be one of the leaders when the revolution happens

Microsoft co-founder Paul Allen and Google co-founder Sergey Brin have backed similar moonshots. And the US government is backing a $ 300-million 'Brain Initiative'.

The logic behind the moonshot is clear to Gopalakrishnan, who spoke extensively to ET — put in serious and early money in frontier research and be one of the leaders when the revolution happens. As the Infy co-founder sees it, India could host an IT revolution only because some islands of excellence had taken to computing far before software coding had become a globally tradable service.

IIT-Madras, Gopalakrishnan's alma mater, got the second-largest mainframe computer in Asia in 1973. "IIT-Kanpur and Madras got computer science departments staffed with some of the best professors and they taught us computer science early on," he said.

So, when the PC revolution happened in the 80s, India was ready.

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"We benefited from that and we created 3 million jobs, $100 billion of exports and a $120-billion world class industry. We could be at the beginning of this industry," he said.

Early backing for brain-inspired computing can similarly put India in a pole position.

"This provides a great opportunity for us in India to participate in innovation all the way from research to creating new enterprises and businesses" – is how Gopalakrishnan puts it.

Computing inspired by the brain's functioning works on a very simple proposition — computers capable of parallel processing can handle far bigger data than today's computers, which work on a sequential basis.

Today's computers have an arithmetic/logic unit, a memory unit and a control unit – this is called the Von Neumann architecture. When doing a job, these units are fired one after the other. Massive amounts of data, however, are best done with parallel processing, which is how a brain works.

The research challenge, is therefore, to make computers that work like a brain does. A brain is also what scientists call a self-learning unit, it adapts to new environment. Today's computers work on the programming fed into them. Making computers that can adapt to environment is the other aspect of brain-inspired computing.

Globally, the logic behind such research is the recognition that data volumes are growing and so are maintenance costs of interconnected computer systems. Brain-inspired computing is one of the frontier research programmes that include genetic storage of data and shifting from silicon to graphene as the basic material for computing.

A conversation Gopalakrishnan had with IISc director P Balram last year after his retirement from Infosys inspired his $50-million bet on brain. "We talked about (computer network) maintenance costs and systems that can learn, new models of computing to look at big data," Gopalakrishnan says.

His funding of the IISc research programme will ensure there's a cutting edge laboratory with around 45 scientists working in it, and the capability to collaborate with American universities like Carnegie Mellon, which is also hosting similar projects. To establish a research partnership between Carnegie University and the IISc, Gopalakrishnan made a $1.8-million grant as well.

Gopalakrishnan's bet, if it pays off, will likely find a very receptive business environment, because both companies and start-ups are already working in related fields.

IBM unveiled TrueNorth, a neuromorphic chip which has a million neurons and 256 million synapses, in 2014. The chip, inspired by brain functioning, was the result of an 8-year collaboration between IBM's research labs, universities and government agencies.

Brain research's other big benefit is in healthcare, for example, tackling diseases like Alzheimer's better. Vamsi Chandra Kasivajjala, CEO & Co-Founder of Enlightiks, a deep learning startup based in Bengaluru and Palo Alto, California, runs a company that provides predictive analytics and deep learning platform and services for the healthcare sector.

It's working with many hospitals across the United States and India to collect patient data on diseases including Alzheimer's and find ways to prolong the onset of the disease.

So, India is not a stranger to frontier research on brain. "There are pockets of this research happening in India. My goal has been to integrate these things and bring these people together and that's what I'm trying to do," says Gopalakrishnan. His funding has also brought in Partha Mitra, one of the scientists working on the US government's Brain Research through Advancing Innovative Neurotechnologies (the acronym works out to BRAIN). BRAIN seeks to map every neuron like the genome project mapped every gene. Mitra will hold the Professor Mahabala Distinguished Chair in Computational Brain Research at IIT-Madras, one of the chairs funded by Gopalakrishnan. Whatever happens, one thing is already guaranteed: Kris Gopalakrishnan's $50 million has helped put plenty of brains behind India's brain project.

Hindustan Times ND 30/01/2015 P-13

Govt plans job-oriented education across India

FOCUS Plan is in tune with PM Modi's 'skill India' vision

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NEW DELHI: Seeking to arm college students with employable skills, the government plans to introduce career-oriented short term courses in 5000 universities and colleges across the country.

The plan is in tune with Prime Minister Narendra Modi's focus on skill development and his vision of creating 'Skill India'.

The courses which range from diploma in tourism to psychology counseling to market research will compliment the relevant degree courses.

So a student pursuing a degree in history will be able to simultaneously take up a short term course in tourism, heritage walk.

Similarly one studying psychology can take up counseling and a degree in statistics can be combined with a diploma course in market research.

A HISTORY STUDENT WILL BE ABLE TO SIMULTANEOUSLY TAKE A COURSE IN TOURISM, HERITAGE WALKS

"The idea is to provide skill training to a large number of students who otherwise remain unemployed even after a degree course," a Human Resource Development (HRD) ministry official said.

According to labour ministry data for 2013 one in three graduates up to the age of 29 are unemployed.

The courses will be introduced first in NAAC accredited A grade colleges followed by the B grade.

Along with career oriented courses, the ministry also plans to introduce vocational courses in 1,000 colleges and open 1,000 community colleges to give a major push to skill development in higher education.

Skill development has been one of the priorities of the NDA government. In his independence day speech last year, Modi said India must develop skills to provide meaningful employment to millions of young Indians.

"Our country is the world's most young country. Have we ever thought of utilising it? Today the world needs skilled workforce, today India also needs skilled workforce," he had said.

Times of India ND 30/01/2015 P-21

Two biofuels produced from single algae

Washington: A common algae commercially grown to make fish food holds promise as a source for both biodiesel and jet fuel, according to a new study. Researchers led by Greg O'Neil of Western Washington University and Chris Reddy of Woods Hole Oceanographic Institution exploited an unusual and untapped class of chemical compounds in the algae to synthesize two different fuel products, in parallel, from a single algae.

"It's far from a cost-competitive product at this stage, but it's an interesting new strategy for making renewable fuel from algae," said O'Neil, the study's lead author. Algae contain fatty acids that can be converted into fatty acid methyl esters, or FAMEs, the molecules in biodiesel.

For their study, O'Neil, Reddy and colleagues targeted a specific algal species called Isochrysis - dismissed by biofuel prospectors because its oil is a dark, sludgy solid at room temperature, rather than a clear liquid that looks like cooking oil. The sludge is a result of the alkenones — precisely what makes the algae a unique source of two distinct fuels. The researchers devised a method to separate the FAMEs and alkenones in order to achieve a free-flowing fuel. PTI

IIT Meet Focuses on Human Factor in Transport Mishaps

CHENNAI: Human errors, many caused by driver fatigue, have long been established as one of the primary causes of accidents. But research on the same has not received the importance that has been its due. A collaborative programme by the Indian Institute of Technology, industry players and the state government though, is now trying to rectify this anamoly.

The Rehabilitation Bioengineering Group, a unit of IIT-M, in collaboration with the Institute of Road Transport, has been involved in extensive research and data collation on 'Human Transportation Factors' for sometime. And this is an effort that could result in policy changes, according to speakers from the government and IIT-M who spoke at a data sharing event on the program at IIT-M here on Thursday.

According to transport secretary to the Tamil Nadu government Prabhakara Rao, research on Human Transportation Factors, especially the ones like IIT-M's, will end up influencing or even triggering policy decisions.

"We have not given the importance that is due to studies like this. It is these that will end up influencing policy decisions," he said in his Chief Guest's address.

In fact, the program at the Institute has taken its current avatar primarily due to the interest shown by the state government if IIT-M authorities are to be believed.

Venkatesh Balasubramaniam, Department of Engineering Design, told Express that while a concerted study had been going on in the topic in laboratory conditions for almost a decade, it was the visit of the Transport Minister and secretary that has taken the study from the lab to on road conditions.

"The government was very interested in taking this forward and it was after that we entered into a collaboration with the Institute of Road Transport. The study and program has also incorporated industry elements and the next step is to collaborate with OEMs," he said.

At current status, the program is looking at extensive research, both in laboratory and on road conditions, on driver fatigue, comfort etc and the effect it has on performance.

"Collaboration with the industry has already seen positive results, with Haritha Seating, a seat manufacturer, has already manufactured seats to our specifications and these are being tested by us," Balasubramaniam pointed out.

Students to probe causes of shrinking green cover at IIT-B

http://www.hindustantimes.com/mumbai/students-to-probe-causes-of-shrinking-green-cover-at-iit-b/article1-1311957.aspx

Students at the Indian Institute of Technology, Bombay, (IIT-B) have taken it upon themselves to highlight the fast-depleting green cover in their campus and the lack of measures to tackle the menace. They have compared photographs of the campus taken in 1968 with that of 2008 and 2014 to show the loss of green cover in the 566-acre campus.

When the institute was set up on the banks of Powai Lake in the 1950s, tree cover was sparse. However, the campus turned into a haven for flora and fauna over the next few decades, as numerous trees were planted.

In 2009, a World Wildlife Fund for Nature study found the campus housed nearly 843 species of flora and fauna of native and foreign origin, including protected species.

However, with no working institute body to look after the biodiversity, coupled with the dire need to expand facilities in the campus, students said there is rampant and unnecessary tree felling. “Not only are trees cut for clearing land for buildings, they are often uprooted,” said Anshul Awasthi, a final-year student.

An article in the latest student magazine Insight has addressed the issue. The article says a newly built faculty housing with a parking space for around 100 cars was created by cutting down densely planted areas, while a new guest house has led to more than 35 trees being felled near the lakeshore.

Sreesh Venuturumilli, a student at the institute and author of the article, said multi-level parking on stilts could have saved the trees.

Recognising the potential of IIT campuses to become spots for nature conservation, the ministry of human resource development had, in 2013, recommended that all IITs set up a ‘Green Office’ to look into all environment-related activities in the campuses. However, despite a committee being formed two years ago, no meeting for a greener campus has been conducted so far, said students.

Professors said nature is paying the cost of development, which is inevitable. “As there is a continuous expansion and the campus has limited space to cater to it, some sacrifice has to be made,” said Rohit Manchanda, professor of bioscience.

Devang Khakar, IIT-B director, said he was unaware of any student activity towards a green campus and declined to comment further.

IIT Bombay launches mass open online courses

The programme, offered free, will give access to high quality, IIT-style education to Indian students in Indian languages.

http://www.thehindu.com/features/education/iit-bombay-launches-mass-open-online-courses/article6835231.ece

In a step that could significantly push the bar for quality online education in the country, IIT Bombay has embarked on a commendable mass online education programme that will provide free online courses and give access to high quality, IIT-style education to Indian students in Indian languages.

On the Republic Day, Prof Devang Khakhar, Director of IIT Bombay, launched three Mass Open Online Courses (MOOC) in computer programming, thermodynamics, and signals and systems from the institute’s IITBombayX platform developed in collaboration with edX, a not-for-profit initiative by MIT and Harvard.

Describing the initiative as “pathbreaking”, Prof. Khakhar credited Prof. Deepak Phatak of the Computer Science and Engineering Department for bringing it to IIT Bombay. “The rapid evolution of technology makes it imperative for students and teachers to incorporate the various offerings of technology in their learning process,” he said, launching the first three courses.

The Introduction to Computer Programming will be 16-week course in two parts aimed at computer programming students. The course on Thermodynamics, designed for mechanical engineering students, will last 12 weeks. Signals and Systems will be a 16-week course in two parts designed for electrical engineering

students. The students will get an honour certificate of achievement certifying successful completion of the course after they have qualified in the tests.

Simultaneously, IIT Bombay will also offer training workshops for invited teachers on effective teaching and mentoring students in online courses for each of these three subjects under the Train 10,000 Teachers or T10KT programme of the institute.

Mass Open Online Courses or MOOCs have emerged as the most inexpensive mechanism for offering quality education online to a very large number of learners and in addition to traditional course materials like videos, readings and problem sets, it incorporates aspects of active learning, collaborative discussions on forum, online quizzes etc.

Global educational institutions are increasingly adopting MOOCs and given India's need for reaching out to largest possible number of learners, MOOCs are seen as the best way forward to ensure quality in education and vocational training.

"We have about 3500 colleges, but the academic infrastructure is not up to the expected levels and quality of education suffers. In other institutes, computer programming students may be given 10, 20, or 30 line programmes to write, but in IIT Bombay, students write 200 to 250 line programmes. So, simply put IITBombayX stands for extended online educational services from IIT Bombay and IIT-style learning," Prof Phatak told *The Hindu* on Thursday.

He said the IITBombayX courses will be initially offered in English and Hindi, but eventually in all Indian languages as the project expands nationally. "The courses will also be important for collecting data on student behaviour and their approach in online education which we could share with other educational institutions," Prof Phatak said, adding that anyone from 15 year-old to 75-year-olds can register for the courses, and there is no limit on how many can enrol at a time.

Prof Phatak said the IITBombayX platform will soon offer other courses like a course in agriculture designed by Hyderabad-based International Crops Research Institute for the Semi-Arid Tropics (Icrisat), and a course by Tata Institute of Social Science on open source animation tools. "A chemistry course by Dr. Mangala Sunder of IIT Madras is also being planned," he said.