

# Out of the box

**CREATIVE STREAK** A blink-control wheelchair, an automated Braille pad, a crowd control system – students are undertaking innovative projects as they attempt to solve everyday problems and bulk up their CVs

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This placement season was not a smooth ride for Shashank Agarwal, 21, a final-year engineering student at Thakur College of Engineering and Technology, Kandivli. Whether it was with respect to certificates or resumes, it was an uphill task to keep all his documents in place and be composed for the interview.

"Looking around, I realised that I was not alone. Many of my batchmates too were struggling with their files and papers."

That's when Agarwal thought of creating a digital platform that could store all a student's information and be accessible to employers as well.

Once the data is uploaded on this platform, called Application for Placement and Training, employers can access them all at one place and they in turn can update the schedule for interviews and online training sessions. The students can then view all the information here, instead of waiting to get an email from the employer each time there is an update.

"We took this up as our final-year project and we want to turn it into a successful venture in the future," says Agarwal.

Like Agarwal, many final-

"Projects are no longer a cut-copy-paste task," says Ashok Wadia, principal of Jai Hind College. "Students are thinking out of the box to gain an edge over other students. Employers are also keeping an eye on final year projects and students faring well either get financed or get internship opportunities."

As students prepare to present their final-year projects, we look at some of the most useful and innovative.

## BRAINY CHAIR

Gone are the days when a physically disabled person needed to be moved around in a wheelchair or use a remote control. Three electrical engineering students from KJ Somaiya College of Engineering in Vidyavihar — Soham Ganatra, 21, Sunny Modi, 21, and Priyank Satra, 22 — have conceptualised a chair that can be moved with the blink of an eye. They have named it the Brains Chair.

"There will be a sensor band tied around the head of the user," says Ganatra. "As the person blinks in the direction of desired movement, the sensor catches the signal and the chair moves in that direction." If the person wants to halt, they need to only blink thrice.

The system uses eye movements and brain waves, allowing the user to move around



■ The Brains Chair, created by electrical engineering students (above) Priyank Satra, 22, Soham Ganatra, 21 and Sunny Modi, 21.

is that the chair is cost-effective and affordable."

The prototype prepared by the students costs around Rs 30,000 and the students are working to reduce it further. A remote-controlled electric wheelchair costs about Rs 2 lakh in the market.

"The knowledge that we gained from our subjects helped us build the prototype and will be one of the major highlights on our resumes when we go out for



— an electronic Braille pad.

"The Braille pad can be used by anybody who knows Braille or wants to learn it," says Kush Goliya, 20. "Just like a Braille book, the device has pricks that the user can feel on their palm, but the USP of the product is its audio and storage capability."

Goliya adds that the user can hear the alphabets that they touch and make notes of the same. The notes will then

LIKE A BRAILLE BOOK, THE ELECTRONIC BRAILLE PAD (BELOW) HAS PRICKS THAT THE USER CAN FEEL ON THEIR PALM, BUT THE USP OF THE PRODUCT IS ITS AUDIO AND STORAGE CAPABILITY. USERS CAN READ, TAKE NOTES, SAVE DATA AND RETURN LATER TO REVIEW WHAT THEY HAD WRITTEN OR SAVED IN THE DEVICE MEMORY



■ Screenshots of Application for Placement and Training, a digital platform for shared student and employer information created by Shashank Agarwal, 21.



■ Electrical engineering students Swapnil Rana and Sameer Sathe work on their final-year project, a Braille electronic pad.

## STILL UNDECIDED? TIPS FOR CREATING A WINNING FINAL-YEAR PROJECT

Experts offer suggestions on how to choose a project, execute it with the resources available and come up with a working model.

- To find a viable idea, students should form a group and brainstorm on theories that are taught in class.
- Students should refer to standard journals for their research since they carry the most recent academic papers.

plays an important role in determining what inputs or changes are necessary.

- Students should work towards garnering resources by approaching various sources and communicating with them. This is an essential quality required at the workplace too.
- Students should be keen on taking part in competitions across colleges and cities,

programme and eventually display it on the indicators at the forthcoming station. This would help commuters identify the least crowded compartment.

"We actually went to railway stations and conducted surveys to understand the situation," says Arpit Bhatt, 21. "This project has given us a lot of exposure and we now have a solution-oriented attitude to any problem we face in life."

"These students have started early and if undergraduate students start looking at solving city issues, it won't be long before we're a well-planned and

after their interests," says Jay Mehta, 22. The students conducted a meeting with members of the community, asking them to identify a party or union that they think can relate to their problems and that they could associate with. Further, they also suggested that the key-makers undertake skills-based classes so that the next generation could understand the profession and increase efficiency.

In another instance, Rima Thakkar, 23, interviewed ten masseurs to understand the drop in demand. "It was difficult to find them, since they were not

year students from city colleges are working to provide solutions to everyday problems in their year-end projects. What's more, while these projects would earlier remain on paper, experts say students are now treating them to bulk up their resumes and bag employment opportunities based on their bright ideas.

independently. The sensor band reads the mind waves and transmits the data to the software, directing the chair's movements.

"This project aims to empower a section of society that is still largely marginalised," says associate professor and project mentor Lekha Das. "One of the major positives of this project

interviews," says Satra.

### ELECTRONIC BRAILLE PAD

Six students of electrical engineering from Veermata Jijabai Technological Institute, Matunga, zeroed in on a technology device for their final-year project that could help the blind

be saved in the memory of the device and the user can revisit them whenever they want to revise or review the content.

Experts say such projects help develop the overall personality of the student. "These projects help students develop skills such as communication, research, leadership and team

One can also look up for reliable websites on the internet at this stage.

■ The trial and error method, while executing a project,

since these help boost confidence and help generate ideas. Also, it is a great means for students to expand their network and showcase their talent.

TIPS COURTESY PRITAM SALANKAR, ASSISTANT PROFESSOR, DEPARTMENT OF ELECTRONICS, KJ SOMAIYA COLLEGE OF ENGINEERING, VIDYAVIHAR, AND RIYA SAINI, ASSISTANT PROFESSOR IN THE ELECTRICAL ENGINEERING DEPARTMENT AT VJTI

organised urban space," says Pritam Salankar, assistant professor of electronics and project mentor. "Such projects give a lot of exposure and ensure that students display high quality of work — which will ultimately help them secure a good job."

traceable. Nowadays people prefer going to salons and spas since they provide them with better facilities in a closed setting. Not every person looks forward to having a massage out in the open," says Thakkar.

The students suggested the masseurs undertake basic tutorials and short-term certificate courses to help them attract customers. They could then explore the option of opening up small spaces to offer spa-like services at affordable rates, Rima adds.

According to the mentors, the purpose of this project is to help students work in the field and deal with the complexities of how an industry works.

"Such projects ensure that students are able to utilise their classroom knowledge in a practical environment," says Kavita Laghate, director of JBIMS. "These students are going to be future managers and should know how to handle problems with efficiency."

### BANDING TOGETHER

Ten management students from the Jammalal Bajaj Institute of Management Studies (JBIMS) have stepped in to work in the field of unorganised labour.

Through this project, the students started by identifying a few such communities, analysing the problems they face and are now brainstorming to find practical solutions to these problems. They have identified the communities as keymakers, scissors and knife sharpeners, paan vendors, masseurs and tourist guides.

"While communicating with the keymakers, we realised that their major problem is that they do not have a union that can look

spirit," says Riya Saini, assistant professor of electronics at VJTI and mentor for this project. "At such a young age, these students [Swapnil Rana, Sameer Sathe, Vinay Penta, Harshil Mehta, Goliya and Swapnil Shah] have come up with a solution that could revolutionise learning for a deprived community."

### A CROWD-MONITORING DEVICE FOR TRAINS

Mumbai locals are called the lifeline of the city and students too travel from far away to colleges in and around Mumbai. The rush in the local trains is

hard to ignore, especially during peak hours.

To find solution to this, students Arpit Bhatt, 21, Anuj Gangan, 22, and Aareesh Bachana, 22, from KJ Somaiya College of Engineering in Vidyavihar have worked on a project to control this crowd and distribute it evenly via an image processor.

The device would be installed in every compartment of a local train, and monitored at a central location. This camera would capture the image of the compartments, provide a rough headcount through a software

## On offer: Vocational courses from Oz



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Strengthening its skill development initiatives, the National Skill Development Corporation (NSDC) recently signed a pact with Australia's largest provider of vocational education and training, Technical and Further Education (TAFE), South Australia and Heralds Education and Training.

"This is a first-of-its-kind collaboration where a vocational education and skill training college is being established in India, where the curriculum will be based not only on the Indian framework, but also transnational standards," says Dilip Chenoy, MD and CEO, NSDC.

Participants can re-skill or upskill themselves for industries like automotive, retail, health-care, construction, telecom, IT/ITES at this college. On offer will be two-month courses for drop-outs, existing students and currently employed workforce. The college will also train entry level resources for basic roles and to upskill employed workforce.

Apart from this, there will be



THINKSTOCK

heavy component of hands-on training. The institute will also offer specialisation skill courses for existing students enrolled in engineering colleges.

On successful completion of the course, each participant will be awarded a certificate by SSC and TAFE respectively.

This certificate will not just be recognised in India and Australia but also globally, enhance job prospects of the participants. NSDC will fund approximately 74% of the total project cost to operationalise the project.

As per the plan approved by NSDC, Australia aims to skill approximately 83,500 students in the next 10 years.

nine to 12-month employment-oriented courses delivered in partnership with industry partners. These will have a

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### face to face

ALEX CHERNOV, GOVERNOR OF VICTORIA

## Interested in aviation, engineering?

The attitude of PM Modi is more entrepreneurial and the new government shows more confidence in having foreigners participating in the education sector, says Alex Chernov, governor of Victoria, who was on a recent trip to India to inaugurate the Australia India Institute's Delhi centre. Excerpts from an interview:



What kinds of scholarships are on offer?  
Among many, we have the Victoria India Doctoral Scholarships worth AU\$90,000 for PhD candidature and a full fee waiver. Victoria has in the last two years has supported scholarships worth AU\$2.3million for Indian students.

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**Which sectors hold scope for Indian students?**

Some of the main sectors to look at are engineering, IT and aviation. Victoria has 40% of the biomedical sector in Australia. Students interested in studying biomedical can complete their education here. La Trobe

**Alex Chernov, governor**

University also has an agrobio center with 400 researchers working on agricultural matters to help provide information and innovation to other countries. Melbourne also has large scale cultural programmes.

**Institute focus on?**

Policy makers and leaders can participate in dialogue about relationships with Australia, joint ventures in research and collaborations. It'll also get Australians to visit India and talk about common issues related to both countries.