# SPCE FORUM



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# Introduction

Greetings to all .....

To the first newsletter of SPCE. The idea behind this publication is that, it would bridge the gap between different sectors such as cultural, industrial, communicational and academics. Essentially, this is for the benefit of the students not only for their academics but also for placement and extracurricular activities.

# Contribute

The committee of the SPCE Newsletter would also like to apprise you about its bold new venture: An Anonymous Ideas Box; a voice for the student body. We urge you to come forward with your grievances hitherto unheeded, your ingenious ideas for improvement and your often overlooked queries on every topic ranging from academics and placements to recreational pursuits. All of these proposals, anonymous or otherwise, will be taken up in the Newsletter and brought attention to.

In addition to this, the newsletter is eager to provide a platform to showcase the creativity of its contributors through their stirring artwork, spellbinding poetry and gripping stories.

For now, the committee encourages you to send in your ideas, queries and creative contributions to the following numbers: Rushabh Jain : +91 7558499090

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# PLACEMENT- CIVIL

One of the recruiters for Civil Engineering was Shapoorji Pallonji Company and Ltd, a beast in the construction field, having contributed to building numerous iconic building and structures that dot the architectural landscape of India. The company's criteria was fairly inclusive with requirements that included above 65% in 12<sup>th</sup> grade, a CPI of 6.5 or above with a buffer of two dead KTs. The company's hiring procedure consisted of three screening rounds for the selection of suitable candidates. Further insight is given into their recruitment process and elimination strategies for the potential aspirant.

#### 1<sup>st</sup> Round: General Aptitude Test

The first round consisted of a General Aptitude Test, an online test that consisted of questions from Quantitative, Verbal, Logical and Technical areas. Emphasis was placed on technical knowledge which comprised a total of 30 questions while Logic and Verbal accounted for 20 questions each.

The General Aptitude Test played the role of a strict eliminator, with 14 selected candidates out of a pool of 35 aspirants.

#### 2nd Round: Group Discussion

The Aptitude Test was followed by a Group Discussion. The 14 selected candidates were split into groups of seven each and given a total of 20 minutes to share their views on two separate topics. The topics for the group discussion included:

1: Unlike cricket, football has more potential to grow in India

2: Journalism should be banned from the premises of censorship.

Each topic was deliberated over by each team for 10 minutes; the time constraint forcing each candidate to think on his feet and make a positive impression on the supervising HR personnel. In this round, the executives evaluated the candidates on their body language, communication skills, teamwork, and leadership qualities. At the culmination of every Group Discussion, each candidate was expected to conclude the discussion as concisely and fluidly as possible.

#### 3rd Round: Personal Interview

The screening process then progressed to its final stage in the form of the Personal Interview. The evaluation of the candidates from the Group Discussion, a noelimination round, continued over in the personal interview.

The Personal Interviews unfolded in the following fashion; every candidate was initially asked to provide a brief description of himself, which was followed by idle chatter to help calm the nerves. Emphasis was placed on research and previous experience, with candidates continually asked to substantiate the same.

With the basis thus established, the Personal Interview progressed into a series of rapid fire questions on all aspects of the applicant's candidature including technical knowhow, future plans, family background and programming experience.

With the grueling recruitment process thus concluded, four students from the Civil Engineering branch of Sardar Patel College of Engineering were successful in securing their positions in this construction powerhouse.

#### Candidate Experience

One of the first candidates placed was Vadakummuryil Jimmy Chacko. A student of the Civil Engineering discipline currently in his final year, he has completed his diploma from Fr. Agnel Polytechnic. He has always been a dedicated student both with regards to his academics and extra-curricular activities, serving as the Joint General Secretary on the Student Council.

Jimmy's infatuation with research work only grew with each passing year and this infatuation found expression in action with his state level research publications on 'Sustainable Development in India', 'Earthquake Resisting Structures' and 'Retrofitting and Rehabilitation of Structures'. As part of his diploma course (Sandwich Pattern), Jimmy interned for a period of 10 months with Kukreja Constructions, which he believes gave him the necessary exposure and practical experience. In addition to his impressive academic achievements and research experience, Jimmy enjoys listening to music, loves travelling and fervently follows cricket and tennis in his spare time.

Here are his two cents on the recruitment process and his thoughts on every step along the way:

#### 1st Round: General Aptitude Test

Jimmy believes that the General Aptitude Test was nothing more than a test of steel and nerves with questions drawn entirely from subjects that students have been acquainted with in their previous years. The questions were, in his opinion, of an average level of difficulty, quite easily solvable by candidates preparing for GATE and IES.

#### 2<sup>nd</sup> Round: Group Discussion

Jimmy has very strong views regarding the authenticity of the opinions put forth in the Group Discussion. An opener in the 1<sup>st</sup> discussion, he believes that using careless falsehoods in the Group Discussion to substantiate one's viewpoint, impress the onlookers or dominate the Group Discussion could very well have counterproductive effects. Honesty and confidence, in his opinion, are a candidate's strength. In his own words, 'Trying to fool the HR people is like trying to fool oneself.'

#### <u>3rd</u> Round: Personal Interview

Jimmy was the 14<sup>th</sup> candidate to go through with the Personal Interview, a thoroughly nervewracking wait. The template of the personal interview as followed to a T, with extraordinary importance given to his 10 month internship and the experience and knowledge he extracted from the same. As the focal point of his resume, the internship served to highlight his technical expertise and proved him to be a candidate ready to take on the realities of an on-site employment.

Jimmy recalls a number of tactics undertaken by the interviewers to shake his confidence, including a series of rapid fire questions that he gracefully fielded and an interviewer seemingly uninterested in Jimmy's accomplishments thumbing through his cell-phone. He was finally able to breathe a sigh of relief as his interview ended with the tried and tested question every candidate is prepared for: why should the company hire you? And Jimmy concluded his interview on a high.

Jimmy's confidence under pressure, his laudable communication skills and his preparedness he believes gave him an edge over the competition and rectified any lacunae on the academic front. In conclusion, Jimmy provides the following tips for a smooth placement procedure:

- Be honest in your Personal Interview and Group Discussion. Falsities and flattery will get you nowhere
- Study the company and its requirements and tailor your resume to suit their needs. A design company would not be interested in a resume heavy on the construction front.
- Market yourself well. Stay confident, improve your communication skills, build on your practical knowledge and sharpen your basics.
- Internship experience is a must and should be highlighted upon in interviews.

Grades are rarely a factor that make or break a student's possible selection, Jimmy reasserts. He stresses that the four students selected were all basis on their confidence, communication skills and impressive practical knowhow pulled them through.



BY: JIMMY FOURTH YEAR, CIVIL

## PLACEMENT- ELECTRICAL

#### The process:

*neering*. The criteria for application was:

- Final year / semester students in B. Tech / B.E. course (completing in 2018).
- Candidate should have passed the SSC / X Std examination in first attempt with minimum 65% or above.
- No year gap between SSC / Xth Std & HSC / XII th Std. Minimum 60% aggregate marks or equivalent CGPA in the B.E. / B. Tech Course. No. of ATKT / Backlog in Degree course should not be more than Two. No out BE / B Tech.

#### 1<sup>st</sup> Round: General Aptitude Test

This was probably the mass filtration round for the company. Out of nearly 50 students appeared (from electrical) only 17 were shortlisted for the interview. The instructions were simple: You cannot touch the keyboard nor you can use the browser. However, if you do so the test will terminate automatically without submission. There were 3 sections Verbal/Quants/Aptitude 2nd Round: Group Discussion followed by Technical test, provided with optional break of 5 mins in between.

The questions were split into groups of 25 questions each section making total of 75 to be completed in 60 mins. The technical test was 45 questions in 30 mins. And there was section-

#### 2<sup>nd</sup> Round: Group Discussion

Unlike the other companies, the group discusjust an evaluation round. The groups were topic for group discussion was the same for both groups 'Is India a land of talent or devoid of innovation?'.

#### 3rd Round: Personal Interview

The last stage of recruitment was held on the next day prior to that which they gave a personal details form to fill, covering all the bio-data to all academic and co-curricular and extracurricular activities. No CV's were allowed to be taken inside the interview rooms just the 4page form that we had to fit in all the things although we couldn't so we had to just mention the important ones.

Interviews happened and then shortlisted candidates were informed after 2 days.

al cutoff.

The first company to visit campus for place- My name is Uddhav Surve, born and brought ments for the batch 2017-18 was L&T Engi- up in Mumbai. Finished my school from St. Francis High School and Junior college from Thakur college of science and commerce.

> My experience of the L&T's placement process was a surreal one. The reason I say it because I was challenged mentally to be calculative and cautious on every single stage of the process. As being a core company I knew what qualities need to be highlighted but I was perplexed because I was involved in agglomeration of cocurricular and extra-curricular activities so I had to decide which ones to drop.

#### 1st Round: General Aptitude Test

drop in Any semester/ year through- The general aptitude test was not tough but challenging one. We were briefed about the sectional cutoff and non-negative marking at the start of the test. So, I just made a simple strategy that to complete 50% of each section at least and then complete the remaining starting from the forte ones. I skipped the questions which I knew would definitely take more than a minute as we had to complete 75 questions in 60 mins. I managed to mark all the questions by evaluations except the comprehension in Verbal section.

Shortlisted candidates were made into groups and called in the conference room, given the topic we were asked whether we are comfortable with this one. Everyone agreed. There was momentary pause when moderator said "Start the discussion you have 25 mins." I grabbed the opportunity and started the discussion with 2-3 examples by strong-arming the point India is a asked about some technical questions outside land of talent. I got positive reinforcement from curriculum and tested my general knowledge. I my colleagues and the discussion went well. then took the charge of interview from here on. However, when sir said "Last 2 mins. Conclude I took them to my forte which was automation sion was not a filtering process. They said it is unanimously." So my friend across table started and I reinforced it up by attributing my achievetalking, we all assumed he's concluding and formed of 8 and 9 students respectively. The with sudden pause he gestured towards me to conclude the point. Everyone laughed for a second . Then no one talked further. Moderators were busy scribbling the sheets and suddenly they looked up and said "Is it over? Okay thank you all!".

#### 3rd Round: Personal Interview

The next day's morning was the most anxious one in the past years. As I came to college in the morning, I wished my interview slot came somewhere midway so that I could prepare. I was all to be just yourself." reading my internship reports so that I can talk about it in depth. Remember the form I mentioned in the 3<sup>rd</sup> stage para, well that set me up! We were asked to mention our favorite subject and merit rank. I wrote merit rank 2 followed by favorite subject machines, I don't know why I wrote that, I didn't have any other technically

appealing option. I remembered the quote from hobbit "It does not do to leave a live dragon(machines) out of calculation especially when you live near it." I submitted the form. I continued reading my reports and not less than 2 minutes they called my friend and me into the interviews (We both were merit ranks 1 & 2). I suddenly felt a jolt in the stomach and I got up and went for the interviews.

The whole interview process was like 3 persons having conversation although 2 never talked with each other. The 3 people were me, my mind and the two interviewers combined into one. Because the second interviewer hardly talked.

Well, the interview started with the first question "Tell us something about yourself, your family and academics". Answering that they tried to trap me by saying that "Ohh! your profile is wonderful! Student like you should go abroad and your parents seem financially stable too. What are you doing in India?" I answered the question honestly and to be honest I was prepared for this question more than the technical ones.

Then started the technical talk. They asked "Your favorite subject is machines, is it?" My mind said no, I said yes. Some questions followed on it and I managed to answer almost all. Then I knew the opposite interviewer was specialized in power electronics as I had attended his guest lecture. He persistently asked me "do you know drives?" my mind was saying deviate from it because it was a death valley, I just brushed the topic as it was part of curriculum for final year. I replied no it's in 8th semester. "Phew! That was close one." I said to myself. Then they ments to it.

The interview went on for 1 and half hour and the when I came out I was feeling that as if I underperformed but there was not one regret as I gave my best, I couldn't do anything more.

Two days later they sent a mail stating that only two students were selected from electrical and I was one of them. Then the words from group discussion's moderator reverberated in my ears "Not all of you are going to get selected, If I am sounding as vociferous as I can be, but we want you



BY: UDDHAV

# PLACEMENT- MECHANICAL

#### <u>L&T:</u>

Every year Int is the prominent recruiter of our college, heavy engineering company producing pressure vessels, shells of equipment's in defence sector. The company's criteria was 6 C.P.I. + 65% aggregate in 10th &12th/ Diploma, No year gap, 02 Dead K.T.s allowed. Company's hiring procedure consist of three rounds includes aptitude test, technical test, GD, personal interview.

#### **Rounds and experience:**

# Round 1-Aptitude test and technical test:

Aptitude test consisted three sections1.quantitative 2.verbal 3.analytical 25 questions to be solved in 1 hour duration having sectional cut offs. Technical test was having 45 questions to be solved in 30 min. Out of 36 candidate appearing for lnt engineering only 6 are selected for further rounds.

**Exp:** aptitude test is quite tough. Practice of aptitude is necessary to clear each section. General aptitude test our solving technique, solving speed understanding capability. Technical aptitude was purely based on questions like GATE and IES papers.

#### Round 2-Group discussion:

Group discussion was not the elimination process in lnt engineering company's hiring procedure. There were two panellists looking candidate performance when they are in a group. Generally topics are related to current situations of technology, sports, etc.My topic was mars missions of India is necessary or wastage of money. 25 min was given for the group discussion. HR personals evaluate candidate based on communication skills, body language, leadership skills, and thinking ability.

**Exp:** due to nervousness and fear to speak I was unable to give my 100% in group discussion. The important things in GDs are even though you don't know much about the topic try to note down the points which are discussed in GD and make some points related to topic by using thinking ability. Impressing hr is the key point in GD. Be polite and calm in GD and not dominating which counter against you.

As there were no elimination round out of six applicants no one was eliminated.

#### **Round 3-Personal interview:**

Elimination process continued with the personal interviews. Before interview all six applicant filled the form which consisted of each information from 10<sup>th</sup> to until now including internships, training, projects, achievements, family information and two questions regarding field of interest, activity showing your leadership quality.

Interview start with basic question "tell me about yourself". Generally company focus on internships, projects, activities you have conducted or done (cocurricular and extra-curricular) in your academics. Interview continue with questions related to project, training. Many rapid technical questions regarding the academics have been asked in the process of interview. Lastly they gave chance to ask some questions.

#### Exp:

The internships played vital role in my interview. They have asked many questions about subjects like thermodynamics, fluid mechanics, and manufacturing science. Extra-curricular activities helped me to tackle questions regarding leadership qualities, speaking qualities.

#### About me:

I am a student of 4<sup>th</sup> year b.tech. Mechanical completed 12<sup>th</sup> in Aurangabad. I was the core committee member of college cultural and technical festival. I was also the sports secretary of MESA in the year 2016-17. I have also the head of college "guest lecture series" in which we called honourable "ujjwal nikam" and "tukaram mundhe". I have done 15 days internship in 'Indian railway workshop' and 30 days internship in 'jai hind sciaky private limited, pune' (welding machine manufacturer). I have completed project on '3-D printer project' in 3<sup>rd</sup> year.



BY: ANKIT PURKAR FOURTH YEAR, MECHANICAL



White To Play And Mate In 5 Moves

### FUN ZONE



KENKEN

#### Rules:

1. Use numbers 1-6 for the puzzle. You can't repeat any number in one row or column.

2. The heavily outlined groups of squares are called "cages". In the upper left corner of each cage there is a target number and a maths operation.

3. Fill each square of a cage with a number. The numbers in the cage must combine - in any order, using only the given maths operation to form that cage's target number.

4.For example: If your target number is 9 and your cage is of 2 squares and your operation is addition then possible solutions maybe (6+3) or (5+4)

### HYPERLOOP Cars. Trains. Planes. Ships. What's next?



Here comes HYPERLOOP ,a new way to move people or things anywhere in the world quickly, safely, efficiently, ondemand and with minimal impact to the environment.

#### INTRODUCTION

A hyperloop is a proposed mode of passenger and/or freight transportation, first named as such in an opensource vactrain design released by a joint team from Tesla and SpaceX. Drawing heavily from Robert Goddard's vactrain,a hyperloop comprises a sealed tube or system of tubes through which a pod may travel free of air resistance or friction conveying people or objects at optimal speed and acceleration. Elon Musk's version of the concept, first publicly mentioned in 2012, incorporates reduced-pressure tubes in which pressurized capsules ride on air bearings driven by linear induction motors and air compressors.

The Hyperloop Alpha concept was first published in August 2013, proposing and examining a route running from the Los Angelesregion to the San Francisco Bay Area roughly following the Interstate 5 corridor. The paper conceived of a hyperloop system that would propel passengers along the 350-mile (560 km) route at an average speed of around 600 mph (970 km/h), with a top speed of 760 mph (1.200 km/h), allowing for a travel time of 35 minutes, which is considerably faster than current rail or air travel times. Preliminary cost estimates for this LA-SF suggested route were included in the white paper—US\$6 billion for a passenger-only version, and US\$7.5 billion for a somewhat larger-diameter version transporting passengers and vehicles - although transportation analysts had doubts that the system could be constructed on that budget; some analysts claimed that the Hyperloop would be several billion dollars overbudget, taking into consideration construction, development and operation costs.

#### Theory and Concept

The Hyperloop concept operates by sending specially designed "capsules" or "pods" through a steel tube maintained at a partial vacuum. In Musk's original concept, each capsule floats on a 0.02–0.05 in (0.5– 1.3 mm) layer of air provided under pressure to air-caster "skis", similar to how pucks are suspended in an air hockey table, while still allowing for speeds that wheels cannot sustain.

Open-source design evolution

hough the tube would need to be 13 feet (4 m) in diameter, significantly larger than originally projected. However, the team's model is not a true working model of the propulsion system, as it did not account for a wide range of technological factors required to physically construct a Hyperloop based on Musk's concept, and in particular had no significant estimations of component weight.

reasonable; it did highlight that maintaining a trajectory along I-580 east of San Francisco at the planned speeds was not possible without significant deviation into

heavily populated areas.

#### In November 2013

MathWorks and gested route an was mainly feas on the accelera gers and the ne public roads in o tions reasonabil taining a traject Francisco at the nossible without



#### In September 2013

Ansys Corporation ran computational fluid dynamics simulations to model the aerodynamics of the capsule and shear stress forces that the capsule would be subjected to. The simulation showed that the capsule design would need to be significantly reshaped to avoid creating supersonic airflow, and that the gap between the tube wall and capsule would need to be larger. Ansys employee Sandeep Sovani said the simulation showed that Hyperloop has challenges but that he is convinced it is feasible.

#### In October 2013

The development team of the Open MDAO software framework released an unfinished, conceptual open-source model of parts of the Hyperloop's propulsion system. The team asserted that the model demonstrated the concept's feasibility, altMathWorks analyzed the proposal's suggested route and concluded that the route was mainly feasible. The analysis focused on the acceleration experienced by passengers and the necessary deviations from public roads in order to keep the accelerations reasonable; it did highlight that maintaining a trajectory along I-580 east of San Francisco at the planned speeds was not possible without significant deviation into heavily populated areas.

#### In January 2015

#### A paper based on the

NASA OpenMDAO open-source model reiterated the need for a larger diameter tube and a reduced cruise speed closer to Mach 0.85. It recommended removing on-board heat exchangers based on thermal models of the interactions between the compressor cycle, tube, and ambient environment. The compression cycle would only contribute 5% of the heat added to the tube, with 95% of the heat attributed to radiation and convection into the tube. The weight and volume penalty of on-board heat exchangers would not be worth the minor benefit, and regardless the steady-state temperature in the tube would only reach 30-40 °F (17-22 °C) above ambient temperature.

In 2017, the Hyperloop Advanced Research Partnership was formed to act as a clearinghouse of Hyperloop public domain reports and data.



### **CYBERTECTURE EGG**



An upcoming project at the Bandra Kurla Complex (BKC) in Mumbai will be the most iconic of modern India. Currently under Construction, the Cybertecture Egg in Mumbai is a parametrically designed office building that is entirely column-less and has strong green characteristics. Vijay Associate (Wadhwa Developers) has commissioned James Law

Cybertecture International - a global Consultant specialising in the design and strategy of cybertecture project to design a building 'unlike any other' for Mumbai, India. Its innovative

design will make it the first office building with an eggshape, accommodating 13 floors and providing enough space for customisable living and working spaces.

The Cybertucture office building will be a confluence of iconic architecture, environment design, intelligent system and new engineering, creating an iconic 21 st century landmark for Mumbai and India. The analogy to the form of building is for beautiful planet form to 'land' on the site in Mumbai, and creat a new Cybertucture ecosystem within a building. Like all the building in the future, the 32000 sq m Cybertucture Egg will be self sustainable and eco-friendly as it will make use of solar photovoltaic panels and wind turbines on the roof.

The building is basically a steel frame structure with concrete core and basement. The steel diagrid is precision manufactured off-site with solid steel diagrid nodes that do not need fire

**ELECTRIC VEHICLE** 

#### For Mumbai

protection due to its high steel mass. The structure is 14 floors high at 62 meter height with 3 basemants. Approximately 30000 sq ft per floor of open office space. The cantilever in the egg spans more than 40m.

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During the last few decades, environmental impact of the petroleum-based transportation infrastructure, along with the fear of peak oil, has led to renewed interest in an electric transportation infrastructure. At the beginning of the 21st century, interest in electric and other alternative fuel vehicles has increased due to growing concern over the problems associated with hydrocarbon-fueled vehicles, including damage to the environment caused by their emissions, and the sustainability of the current hydrocarbon-based transportation infrastructure as well as improvements in electric vehicle technology. Since 2010, combined sales of all-electric cars and utility vans achieved 1 million units delivered globally in September 2016.

#### **GOVERNMENT INCENTIVES:**

In April 2014, the Indian government announced a new plan to provide subsidies for hybrid and electric vehicles. The plan will have subsidies up to ₹150,000 for cars and ₹30,000 on two wheelers. India aims to have seven million electric vehicles on the road by 2020.

Although, there is no such provision of subsidy VARIOUS STATE GOVERNMENTS AND or incentives towards hybrids vehicles and imported vehicles, these lack of provisions often act as deterrence to new entrants.

"During the last few decades, environmental impact of the petroleum-based transportation infrastructure, along with the fear of peak oil, has led to renewed interest in an electric transportation infrastructure."

Moreover, the stated objective by the Gol to limit its carbon footprints under Paris agreement apart from limiting oil imports, the Gol has set deadline for 'Only Electric Vehicle (Manufacturing)' 2030. by

There is growing recognition among policy makers to incentivize electric vehicle manufacturing under 'Make In India ' policy, and a new framework policy for this is under anvil to he released by year end 2017 Tesla motors have been offered by the government to establish a manufacturing unit in India at highly lucrative rate apart from tax incentives and potential financial backing in form of Special purpose vehicle (SPV's).

### Need of Future

CITIES PROVIDE THEIR OWN SUBSIDIES:

Delhi, Rajasthan, Uttarakhand and Lakshaddon't levy VAT weep Chandigarh, Madhya Pradesh, Kerala, Gujarat & West Bengal offer partial rebate on VAT Delhi also provides a 15% subsidy of the base price of select electric cars, like REVA. It also exempts such cars from road tax and registration fees.



### **ALUMNI BLOG** Interview of Shri. Vivek Abhaynakar

The interview started with a rhetorical (but 'knowledge-culture' must be retained. How- tries, where companies offer projects and inexorable) little query "Why engineering?". The common (mis)conception among the masses is that people achieve success in this field as a direct product of their passion, but in this case, Mr. Abhyankar showed greater proclivities towards field of 'Accounting and Commerce'. It was his father who forced Engineering onto him, and to be precise, Electrical Engineering. In the first round he could not secure an Electrical Engineering seat, so he opted for the second round. However, there was one seat left in the Civil Department at M H Saboo Siddik. Mr. Abhvankar's father convinced him that Civil is a celestial field i.e. it is an evergreen field. Common public will keep on requiring bridges, buildings, and other infrastructure. Finally he joined diploma at MH Saboo Siddik College of Engineering. The first day was very difficult due to cultural differences he faced in the institute. But after an acclimatization period of about three months, he realized that compared to other branches such as Chemical, Electrical or Mechanical Engineering, Civil was giving out a product that could be seen and touched by people, that was tangible, and moldable. This thought piqued his interest towards the field. He completed his diploma then he worked as a site engineer where he realized need for further knowledge; so joined SPCE from where he did his graduation followed by a job then again Postgraduation in Structural Engineering.

#### Q. Sir how do you see SPCE now and at during your college days ?

About SPCE :- The first thing that springs to my mind about time in SPCE, is the quality of professors. These were professors that had complete their Doctorates, or were Post Graduates, either from IITs, or even countries such as Germany and the US. They had inexhaustible scholastic knowledge, and good exposure in their field and contacts to foreign universities, leading to guest lectures, and informal professorial discussions, that directly benefitted the students. These professors were the focal point of SPCE, and were what made SPCE was one of the best colleges to study in. Students at that time were lucky to not have social media 'distractions' such as WhatsApp, Facebook or Twitter. Gathering pertinent information was very difficult, as we had very small amount of actual data to refer to. This proved to be a blessing in disguise as our time would go mostly in reading good books, journals and attending workshops and sometimes novels which helped make our journey quite focused. In contrast to today's situation, you have social media faucets through which you can express our mind.

According to me, today, SPCE has changed a

ever, not all changes that time brings, are of thus, hire them for jobs. the negative variation. The key is to regulate the changes to keep our key principals true. Q. What do you say on 'Early experience Yet, the upshot remains that things can be in Companies'? improved at SPCE.

#### **Q.** Sir what is your observation regarding the Placements in Industry in general and at SPCE ?

Placements were very good in terms of IT companies. Unlike today, there were no core and non- core demarcations. It you selected Civil Engineering, you had the options of applying for IT or Civil companies, there was no third option such as teaching, business analyst and management available, as the

Er. Vivek Abhyankar, alumni of SPCE (1999 batch), author of various technical papers, coauthor in



books. visiting faculty in SPCE and guide of a couple 01 M.Tech

Thesis might be known to you. Er. Abhyankar is himself a chartered Structural Engineer and Life member of a various national and international institutes; a motivator and technical trainer too. Our editorial panel members conducted an interview of Er. Vivek Abhyankar, on 10<sup>th</sup> September'17. We are happy to publish the same with due permission.

norm has become today. At his time, the incumbent principal Prof. J.V.N. Rao used to say that every student who changed their career, disappointed him. Back then, IT would give handsome packages; 60% of the people went to IT jobs and 40% went for core jobs. Today, the situation is different as both offer more or less the same package.

The situation in India for the core placement sector is disappointing. Recruiting companies expect that applying students must have some modicum of industry exposure. But if they don't give 'freshers' jobs, to earn the requisite experience, it becomes a case of 'who comes before, the chicken or the egg?'. This is an inescapable catch-22, and yet a very real lot. When the outside world is changing at the situation. Keeping their students' best interspeed that it is, it's a necessity that ests at heart, SPCE signs MOUs with indus-

I worked for HCC, Tata Consulting Engineers, AFCONS, previously and now with L&T, all the dream companies for any aspiring student at that time. I was selected in STUP in 1998. But due to heavy recession in the market in those days,

all the companies had asked their recruits to join them later. So, I, on my own, went on job hunting, and got a job in a small consultancy firm (Vartak, Vadalkar and Associates). After a year, I got placed in HCC. My company experience was a good one. At that time, the ongoing trend was that if you were a graduate from SPCE, then you would to the Tata Consulting Engineers. The influx was such that when you'd join the company, people would greet saying, 'Welcome to SPCE'. There were no unknown faces in new company, as all company seniors were from SPCE. Hence, people joining could easily cope up. There would always be help on offer from the college in case of technical difficulties.

According to me, the academic environment, cultural trends and prevalent practices are very different in the company, and therefore, SPCE should train its students accordingly, so that they don't find difficulties in terms of technicality when they join any industry.

\* \* \*

Mr. Abhyankar has had a good experience interacting with institutes. Over the years, he has gained association with many institutes (like VJTI, COEP, IIT-Bombay, RTI-Kottayam, SRM University and of course SPCE). All his weekends are dedicated to these institutes, with the focused goal of the betterment of students, and with all his experience, he suggests that there should be an incubation cell in college itself, where industry people come and spend some time every week and groom students into professionals. When a baby is born, premature, it is kept in an incubator, so that he adapts to the new transition of environment, to the warm and old temperature, and the surroundings. In the same way, he suggests that students are also babies when they graduate, and when they join the companies, the environment is very alien, practices are not known and there are no teachers

These cultural differences should be minimized, and students should be introduced to that kind of an atmosphere at an earlier stage.

Continue on next page..

industrial Also. training should be made mandatory, not only for the institute but also for the industries, to keep the balance. Industries should also take interest in the welfare of the students, because not only do institutes need industries, industries also need institutes. At least 6 months of training should be given before B.Tech. akin to a sandwich course. In some companies, there are students of high caliber, but end up doing photocopying and copying documents, or laborious work not adding to their career. And in some places, students are given good training, but the students are not up to the mark. So there should be screening when students go from institute to industry, their agenda should be set, some syllabus which should be available and when

should also be given a some grading or bonus points which could help them to get a tender or any other such benefits.

#### Q. What role does college play in someone's life?

According to him, the college is like a launching pad for a space shuttle. When it is launched, it goes out of the Earth, gravitational influence then, is not tied up with the launching pad.

It has lost touch with the earth. But the starting point, is a launching pad. If the launching pad is weak, then the desired reaction is to shoot up is not given, it won't be given that thrust. So, a good launching pad definitely adds to the career. If you have passed out from a good institute, your career will be good, and SPCE is a wonderful organization.

the company gives some train- time, i.e. back in the 90s, there were ing certificates, companies no mobile phones, or internet connection, so not much data was available to the students, unlike today. Today students have all these added tools at their disposal, but the curiosity of knowledge is not seen much. Thus, a suggestion from Mr. Abhyankar is to use the college library, technology and all the tools required in one direction and focus on studying.

> Mr. Abhyankar suggested a few motivational books for engineering to read - viz. biography of Prof. S. P. Timoshenko titled 'As I Remember', biography of Sir. MV titled 'Memoirs of my working Life', 'Nation Building' and a couple of more in Marathi (Concrete Che Kimayagar by Usha Tambe, Ra-Rang-Dhang by Shri. Prabhakar Panshikar).

For students of Mr. Abhyankar's

# DER on the upclimb towards reliable energy

A cleaner, decentralized, modular solution mitigating the existential issues in power consumption

With the global demand curve for electrical power continuing its ascent, and so does the hunt for a premium quality and reliable power at deployment; the increasing threat for facing instances of electricity shortages, frequent blackouts and brownouts as well as the anticipation of future hikes in power tariff compel to look out for enhancements to be provided in the traditional existential electrical grid system, that for long has been meeting the demands of its utility consumers in what could be perceived to be more of a centralized system. In the face of the same, a decentralized, modular and sustainable model of Distributed Energy Resources (DER) has been gaining strength; thanks to its compatibility, convenience and a wide spectrum of technologies that could be employed through it, that would tailor to the more peculiar demands of the end user

thanks to its compatibility, convenience and a wide spectrum of technologies that could be employed through it, that would tailor to the more peculiar demands of the end user

Also known as Distributed Generation. On-Site Generation, Decentralized Energy, Distributed Energy







Storage System; all of which are self-explanatory of what the idea of the model is, and which in the sense of its concept doesn't sound new, however, today promises to revolutionize the reliability and resilience of power systems, along with a significant reduction of carbon footprint by the use of renewable energy sources, and the interfacing of these more than 10 MW placed near the point of

consumption, or more appropriately at the distribution level of power flow, DER systems naturally bypass the transmission losses amounting to about 8-15% of the generated power; also providing a premium quality power (with reduced disruptions in voltage and frequency), back -up in the event of an outage, peak-shaving (optimum use of DER systems during high demand charge rates) and low-cost of energy post initial setup investment. Reducing the cost of capital tied up in centralized power plants designed to meet an estimated future rise in demand, the power plants can be designed to suffice only for the current demand, as quick local additions to the delivered power can be made for an increased demand through these distributed systems

decentralized units, termed 'microgrids', with the traditional centralized grid system through power electronics technologies

Primarily consisting of electricity generation and storage systems of capacity not more than 10 MW placed near the point of consumption, or more appropriately at the distribution level of power flow, DER systems naturally bypass the transmission losses amounting to about 8-15% of the generated power; also providing a premium quality power (with reduced disruptions in voltage and frequency), back -up in the event of an outage, peak-shaving (optimum use of DER systems during high demand charge rates) and low-cost of energy post initial setup investment. Reducing the cost of capital tied up in centralized power plants designed to meet an estimated future rise in demand, the power plants can be designed to suffice only for the current demand, as quick local additions to the delivered power can be made for an increased demand through these distributed systems.



# ROBOCON

EVERY YEAR, THE SPCE ROBOCON TEAM COMES BACK WITH A NEW-FOUND RESPECT TOWARDS ROBOTICS AFTER AN INDESCRIBABLE EXPERI-ENCE IN ROBOCON COMPETITION

#### Interview

Q-Can you brief us about the history and the journey of Robocon from its inception till today?

Well SPCE ROBOCON club was formed back in 2010 by a group of robotics enthusiasts, with the mission of promoting robotics culture in r college. The journey was full of ups and downs. The first Robocon Nationals in which SPCE participated was in 2011, we secured a rank in the 80's then in

2013 there was a perceptible improvement and the team stood 40th .Post that the team has stood 58th in 2014,4th in 2015,21st in 2016 and 56th in 2017.

Q•The team members are mainly from the electrical and mechanical branch, is there any particular reason for the absence of the Civil Engineering students?

Generally due to the perception that the activities and the training Robocon has to offer will have no effect on a Civil Engineers resume we did not get any response from the Civil Engineering students. But this year we tried to challenge the norm and we did interact with students of civil dept and gave them information about SPCE ROBOCON and We are getting a good response



Can you share something about the changes adopted both technically & non technically from 2016 to 2017?

After experiencing sudden drop in the rank from 4th to 21st we realised the pressing need for proper designing and simulations .So we adopted various simulation softwares like ANSYS to foster better designing .

Q-Everybody knows that you guys represent SPCE in the ABU ROBOCON competition ,but is that you guys only participate in Robocon or you also go for the other competitions ?

Robocon is/has always been our primary focus, as it requires a certain quanta of attention, other than that we do participate in various techfests like VJTI TECHNOVANZA and paper presentation competitions like NICE, we have consistently showcased an envious performance in such competitions and god willingly we will continue to do so!

Q-Can you brief the readers about as how you finance the robot ? Do you guys get any financial assistance from the college ?

Firstly we do not get any kind of financial assistance from the college . Our financial needs are generally met by the sponsorship we

get from various sponsors ,in the past reputed firms like IMFS classes ,TIME classes and SBI have sponsored us. We also try to get concessions from the manufacturers . Q-How much is your total annual budget ? In 2016 the total spending amounted to 2.5 lacs ,and last year it amounted 2.6lacs ,



the rise in the budget was owing to various improvements like CNC which you used in our robot .

Q-Any other technical tools or softwares which you guys use?

We do use various tools like laser cutting ,water jet , 3D printing in the making of the bot. This year we are planning on using Spark erosion and wire cutting also .We are hopeful of making a 3D printer of our own by the end of this year and a CNC machine by the end of the next!

Q-Who are the faculty members associated with the robocon team ? What kind of assistance do they provide ?

The names of the faculty members is Prof DN Jadhav from Mechanical Dept and Prof Anupa Sabnis from the Electrical Dept .The faculty members do help us in a lot of ways like , recently Dr. Raykar from the mechanical dept provided us with from the Electrical Dept .The faculty members do help us in a lot of ways like , recently Dr. Raykar from the mechanical dept provided us with a contact of Gear manufacturing company which saved a lot of machining cost for us. Also, they encourage us in using various new techniques in manufacturing and try to solve the difficulties that we face during the designing phase.

Q-I'm sure the journey from Robocon 2017 to Robocon 2018 will see many new implementations and improvements? Can you shed some light on them ?

Well ,we have made certain technical improvements like changing the programming language from arduino to python , We have also started using Matlab and this year we will be changing our process management One thing which we have specifically found common in all the successful teams is that they do all the tiny things with utter perfection which increases the efficiency manifold ,and we hope to emulate that and inculcate the same discipline in our team .We are aiming mainly on improving our efficiency and leaving no scope for error to creep in.

Q-What are your expectations from the college authorities ?

As of now we are facing an acute financial crisis ,because our sponsors are unable to provide us with the required funds owing to the implementation of GST which has resulted in a change in their marketing policies and startergies, so we request the college to provide us some financial assistance

,at least during the initial phases of building of the robot

Q-In what way do the seniors and passouts help you guys ? Do you still consult them ? YES!to a great extent . They not only help us in technical stuff but also enlighten us about the new softwares /tools available in the market . They introduce us to various technical manufacturers and dealers which helps us to optimize our cost of production and reduce our expenses drastically!

They are and always will be the backbone of our Robocon team.

Q-What kind of a selection procedure does SPARK adopt in recruiting its members ?What are the parameters on which the members will be selected ?

We adopt a very holistic method in recruiting our members . It begins with our first workshop ,generally in September ,where we introduce the basics of robotics to the first years ,and we encourage them to participate in Technovanza in December so that they get a hands on experience in the domain of robotics. Here we gauge the grasping power of the student ,his ability to gel with other members and his general comfort level with the robot. Post that an interview shall be conducted in April .On the basis of the performance in interview and past performance a list shall be released .

The shortlisted members then enter a training phase where in they are thought various softwares and mechanisms germane to the robot . In the training phase we gauge the person's ability to work in a team and his general ability to tackle problems . The final team members list is published in August.

Q-Any special message you would like to convey to our reader s? How does one benefit on joining the Robocon team ?

Being a part of the Robocon team isn't just learning CATIA or any other software, its an experience in itself .In addition to teaching various softwares used in the industrytoday like CATIA,ANSYS,DELMIA,AUTOCAD

etc . We encourage our members to learn new things not thought in the college and also see it to that appreciate the beauty of Mechanical and Electrical engineering.



# **SPECTRA**

### Transcending innovations



SPECTRA, the annual technical extravaganza of Sardar Patel College of Engineering is back this time in the end of January with an all new theme 'Transcending Innovations'

of the students of the college and with support from Civil, Structural, Electrical and Mechanical Departments, the festival has gained its reputation as being one of the most popular technical festivals in the city.

SPECTRA has always been a platform for students to display their knowledge, technical ingenuity, and creativity, which they have acquired over their course of their engineering education, in several challenging events, competing with other like-minded individuals from all over the

Ever since its inception in 2014, the popularity of the festival has been increasing exponentially every year. Now this time in its fifthh year, the festival promises to be still bigger and better, presenting a wide spectrum of events in Robotics, Automobiles, Electronics, Coding, Civil Engg, Structural design and Gaming, along with **Technical Paper Presenta**tions, Tech Debates and Expert Lectures.

Organized by the joint efforts city.

# Wings of aerial vehicle engineer

W.A.V.E. is a non- profit organization of students of SPCE coming together and working on designing and modeling RC aerial vehicles and promoting their mutual interest in aviation. The primary aim of W.A.V.E. is to create a platform for aviation enthusiasts and take part in various local as well as national level competitions.

### GOALS

Participate actively in various competitions of varying levels.

In the years to come, achieve success in the competitions we participate and increase our college reputation.

Serving as a platform for innovative and creative minds to come forward.

### COMPETITIONS

1: National Aeromodelling Competition held by Boeing at IIT BOM-

BAY in December annually. This competition is launched with the vision to provide a unified national platform for students interested in aerospace related engineering disciplines- to demonstrate their aeromodelling expertise.

2:SAE Aero Design competition conducted by SAEISS, Chennai in June The purpose of SAEISS Aero Design most realistic platform for under-Challenge is to promote and develop Indian expertise and experience in unmanned

in this competition as in any other vehicle design project.

3: SAE Aero Design Challenge initiated by SAEINDIA Bengaluru Section

The design constraints and scoring strategies are formulated to align with real light weight unmanned air vehicle requirements and provide a graduate and postgraduate engineering students.

system technologies at the university college levels. Even small scale unmanned vehicles are complex systems requiring a well planned and executed design approach. In addition, safety conntact us at: al Chaudhari siderations are important factors



# MASQUES



Even As I stared at her, she vanished from before my eyes. I followed enchantingly, pushing through the masqueraded crowd with a building sense of urgency.I took a look around, but all I saw was the frivolous souls of Mumbai enjoying the carnival. At once she caught my eye again, standing against a brick wall, wearing the mask of an angel looking at me, knowing I understood that little soul and her wordless sentences. Pitying the speechless child, I used to daily give her a packet of cookies and some bucks in return for the heartwarming smile allied with a feeling of remorse for being handcuffed unable to do anything worthy for people like her.

I continued into the darkness, passing the entertainers and the entertained. I couldn't see a thing but I thought it fitting. I took a moment to look up at the sky as fireworks lit up bespeaking Diwali at full swing. The magnesium from

each rocket illuminated the street for a second, giving me glimpses of where she was. A flash of gold showed to be in front of me, a flash of turquoise showed her farther away, and a flash of magenta revealed her to be gone. I stumbled on the direction she had absconded in to find another deserted road leading to the chawls.

And there she was, but a silhouette against the wide moon atop the railing. As I watched she looked in my direction and soundlessly slipped down the platform below. As effervescent as before she seemingly glide across a wooden beam leading

#### towards a corner house. I got into the beam slowly and advanced to the next one reluctant at first but sped up as I neared the under construction building.

I saw her scale it with ease and followed her, yet with more effort. Finally, I reached the terrace, only to get a glimpse of

her innocent face shimmering under the moonlight. Looking over the city was a sight to behold, after all it was Diwali.

I began saying something only to be interrupted by a shriek as she turned around abruptly. As shadowy creatures melted off from their hiding places like wax from candles. In the moment of confusion, I felt a sharp strike on the back of my neck, as I collapsed with half consciousness only to be dragged to the edge of the terrace and my pockets scraped frantically. I looked out at Mumbai once again, at the masque revealers and their joyous emoticons. After all they didn't just use those masques to hide their identity from others; they used it to hide it from themselves.Far away against the moon I fancied I saw a creepie little soul

It was a fine spring morning that day in Rockfield. Everyone was cheerfully ready to work on their harvest and pottery and bakery. So cheerful that it was in fact borderline sickening. My Nana, that is my grandmother, and I owned a bakery and just like we do day in and day out we started baking Nana's special honey jelly. It was quite the tedious process just to get the consistency right and then you had to wait two hours for it to set. Needless to say my life was as boring as it gets and I would have killed for some action.

Little did I know 'the one above all' took it in the literal sense! That was the day he came to town. Two hours into the day a young man I had never seen before walked into the bakery. He had a dark complexion and grey hair. There was something weird about his aura but I couldn't quite place it. He was tall and lean with a faint musculature enough to visibly define his biceps and chests. If I was a regular tweenage girl I would have been infatuated but I know how to keep my cool. Clearly he didn't know how to do that because as soon as he saw me he froze in his tracks! While that was flattering at first it didn't take long to become disgustingly creepy.

"Welcome to Nana's Bakery, how may I help you?" He springs back to life and comes closer. "Hello, my name is Manas. I saw a flyer outside that said you needed some help with some odd-jobs. I'm here to apply for that." "Good you can wait in line with all the other applicants. Oh wait! It appears as though you are the only one who applied. Congratulations on your triumph over non-existent colleagues." "I suspect sarcasm in your voice", he said, his forehead creasing up. "Gee, what gave it away? Anyways I'm Arya. Where are you from Manas?" "I don't remember." "Where are your parents?" "Dead" "Oh... I'm terribly sorry." "Why? You couldn't have known." "Do you have any relatives?"

# FIRESTROM

"Just one, my younger sister Sara. She was taken by some people and I intend to find her." "All alone?" "What other choice do I have?" "Fair enough. The job is that you have to hunt down and kill a wolf that has been killing our goats. We will pay you 150 Clevrams for bringing us any evidence that you did the job. Food will be provided and since you are a wanderer you can stay in the shop. Any questions?" "No. I'll see what I can do." "Great. The cattle-shed

is at the back of the shop." As he moved past me towards the backyard I noticed something strange. A strange mark on the back of his neck, partly hidden by his hair. It was three dots in a

neck, partly hidden by his hair. It was three dots in a circle arranged in a triangular pattern. I thought I'd wait for the right moment to bring it up and followed him to the shed.

It was a quaint little shed for five goats, two of which had died to the wolf attack. "I presume it happened overnight at the shed itself and before enough people could gather the wolf made away with the goats, am I right?"

"Yes. In fact the dogs couldn't find a trace of the goats, neither blood nor guts." "Interesting! I suppose the only way to catch this wolf is to lay down a trap around the shed. Then it's just a matter of time." And sure enough he got busy with the traps and I went back to the shop. Dinner was when Nana met Manas for the first time.

They had a conversation about his past and that's when I found out that his parents died in a house fire and his sister was taken by men in suits in a motorcar.

Only a few cities besides the Capital have motorcars so it should narrow down the search by some extent, the nearest one being Goldfield just 5kms away. As dinner got over he grabbed a sturdy looking stick from the shed and waited in hiding inside the shop overlooking the shed.

#### Aditya Nair

So was I from my room directly overhead the shop. This was the most excited I had been in a long time and I wasn't going to miss the action. Hours passed and finally the wolf started inching closer to the shed and the hunter's trap laid out around it. But just as the wolf got close to the trap it stopped and that's when I noticed something on the wolf's neck. A leash! Two men appeared from behind some trees, one of them held the wolf and the other expertly man - oeuvred around the trap injected some serum into one of the goats and then carried the then un- conscious goat away. As they got closer to their escape in the woods the wolf let out a howl right on cue. Why wasn't Manas stopping this? Soon I found out why as he followed the two men close behind. I decided to quickly get up and catch up to him as the excitement in me grew more and more. The two men and the wolf reached a small clearing in the woods where they tied the goat up with the other two goats. The wolf was chained to a tree and the men joined their gang of six others around a bonfire. Manas was still ten paces ahead of me and I decided not to reveal myself to him. There was no way he could defeat eight men, probably armed, and a wolf with a stick. What followed was equal parts frightening and downright impossible!

To be continued .....



#### Aditya

# TALENT HUNT



PRATIK JADHAV



AKSHAY TAPRE



AKSHAY TAPRE



PRATIK JADHAV



PRATIK JADHAV



AKSHAY TAPRE

# Moments











BEST COSTUME



BEST DANCER







MISTER FRESHER



MISS FRESHER