Vasavi College Of Engineering

TECHGYAN

Department Of Computer Science & Engineering

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In This Issue

EDITORIAL

With the commencement of another academic year, many students are seen rushing to hundreds of fests, thousands of seminars and various other courses.

A student is not alone when he or she is studying engineering in some college or university, he or she has thousands of equally capable, if not more, colleagues and the constant question that lingers over a student's mind is where do I stand? Why is it that when it comes to interviews, only few students end up being in the rolls of the companies. What do these students have that make them have an edge over their contemporaries?

One thing that can be concluded for sure is that apart from performing fairly well in academics one needs to have an extra qualification to stand out.

One such qualification a student can gain is a certification from companies that boosts the image of a student possessing it in the eyes of their potential employers. Such is the impression that a simple but a valuable certificate can create!!!

Speaking of value addition, it is an unspoken rule that one must go for a tough certification course rather than an easy one.

Apart from that, it is also important to concentrate on how much value that certificate will add to your resume and also how long does it promise to stay in the market. It's suggested that it's better if one opts for a certification that is not particularly vendor centric and is well connected to the real world and current market demands. The market situation is transient to say the least. You never know what's going to hit it and when!

Certifications are available in many avenues today like networking, database, web designing, and programming.

Some top certifications currently available are vendor neutral CompTIA certifications,Consultants certifications involving e-business solutions, Project management's certifications Programming certifications and Graphics Certifications for those who have that artistic bend. This certifies on the software tools that are most often used like the Photoshop, Illustrator, Fireworks, etc. Sun certifications that provide validation of

skill set for specific job roles. One can choose from: Sun Certified Java Associate, Sun Certified Java Programmer, Sun Certified Java Developer etc. If you are passionate about PHP ZCE or a Zend Certified Engineer is the right choice. Popular database certifications are always in demand like Microsoft's MCTS or MCITP. Or Oracle's OCA, OCP, OCM. Or MySQL's CMA, CMDEV, CMDBA. As far as networking is your area of interest CISCO certification is the best. They've go CompTIA A+, CCENT, CCNA, CCNA SECURITY, CCNP.

Whatever certification you do finally, the bottom line is you have to choose one based on your interests, genuinely, and OWN it. It'd be wise not to expect the certificate to land right in your lap and make sure you pick one that needs a little fight and lots of effort because otherwise, it's not worth anything.

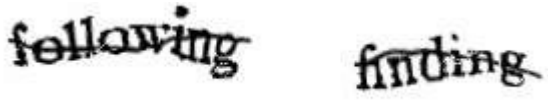
Knowledge is like the ocean. What we need to do is to become a diver and search of the precious pearls that can be used to adorn your future as IT professionals. Putting the pearls together is after all in your own hands. Be the designer of your own destiny....Good luck!!

Team TECHGYAN.

CAPTCHA

By V.Purnima, 3/4 CSE-A

Have you ever seen something like the following:



This is visible when we are creating a new account for any application.

It is a test conducted called the "Captcha", to check whether the user is a human or computer.
CAPTCHA stands for "Completely Automated Public Turing Test to Tell Computers and Humans Apart."

INTRODUCTION *:*

A Captcha is a program that can generate and grade tests that: (A) most humans can pass, but (B) current computer programs can't pass. Such a program can be used to differentiate humans from computers and has many applications for practical security.
APPLICATIONS *:*

It can be used for the following purposes:

1) Online Polls.

In November 1999 slashdot.com released an online poll asking which is the best graduate school in computer science. As is the case with most online polls, IP addresses of voters were recorded in order to prevent single users from voting more than once. However, students at Carnegie Mellon found a way to stuff the ballots by using programs that voted for CMU thousands of times. CMU's score started growing rapidly. The next day, students at MIT wrote their own voting

program and the poll became a contest between voting "bots". MIT finished with 21,156 votes, Carnegie Mellon with 21,032 and every other school with less than 1,000. Can the result of any online poll be trusted? Not unless the poll requires that only humans can vote.

2) Search Engine Bots

Some web sites don't want to be indexed by search engines. There is an html tag to prevent search engine bots from reading web pages, but the tag doesn't guarantee that bots won't read the pages; it only serves to say "no bots, please". Search engine bots, since they usually belong to large companies, respect web pages that don't want to allow them in. However, in order to truly guarantee that bots won't enter a web site, Captchas are needed.

3) Worms and Spam.

Captchas also offer a plausible solution against email worms and spam: only accept an email if you know there is a human behind the other computer. A few companies, such as www.spamarrest.com are already marketing this idea.

4) Preventing Dictionary Attacks.

Pinkas and Sander have suggested using Captchas to prevent dictionary attacks in password systems. The idea is simple: prevent a computer from being able to iterate through the entire space of passwords by requiring a human to type the passwords. The goals of this paper are to lay a solid theoretical foundation for captchas, to introduce the concept to the cryptography community, and to present several novel constructions.

TROJAN DETECTION USING IC FINGERPRINTING

By S.Jyothi , 3/4 CSE-A

This article proposes a mechanism for chip designers to detect when an untrusted chip fabrication service has inserted Trojan functionality into their chip design. They do this by profiling the power consumption of a good chip and then comparing the power consumption profiles of other chips from the untrusted fabrication service against the known-good profile. The idea is that if they are all faithful realizations of the same design, they should all have similar power profiles. The difficulty is that the Trojan circuitry is much smaller than the legitimate circuitry. Detecting an anomaly in the power consumption would seem to suffer from a bad signal-to-noise ratio. Furthermore, there are chip-to-chip variations that far exceed the variations caused by the introduction of Trojan circuitry. The authors cope with this by using principal components analysis to find a subspace that captures most of the variability that is seen in the non-hacked chips. The basis vectors that span that subspace are the directions of benign variability. Variations in the power profile of a chip that are not in the directions of benign variability are considered suspicious. Malicious functionality in Integrated Circuits (IC) could have devastating effects, not only for national security but also for commercial applications. As the fabrication of advanced microchips migrates offshore, the trustworthiness and integrity of IC becomes of paramount importance. Traditional approaches using destructive analysis are both extremely costly and

risky because sampling can miss some attacks. This article identifies an ingenious and ground-breaking alternative to traditional approaches that both largely reduces costs and lowers the risk by verifying positively every chip. Exploiting techniques from side-channel analysis (Template Attacks), it proposes non-invasive and robust method to compare candidate chips against the fingerprint of a reference chip based on the signal emission characteristics. The article presented at the premier security conference in the field, covers both the theory as well as very promising experimental results on feasibility and robustness. This work has the potential to have a wide-ranging impact on secure chip manufacturing and as such was already recognized by DARPA by a seedling grant.

SIXTH SENSE

..The Wearable Computer

By Abdul Muqueem , ¾ CSE – A

Although the miniaturization of computing devices allows us to carry computers in our pockets, keeping us continually connected to the digital world, there is no link between our digital devices and our interactions with the physical world. Information is confined traditionally on paper or digitally on a screen. SixthSense bridges this gap, bringing intangible, digital information out into the tangible world, and allowing us to interact with this information via natural hand gestures.

Imagine being able to take a digital photograph by making the shape of a picture frame in the air with your hands, or dialing a phone number by simply tapping your palm with a finger or even navigating your way around a city by projecting a map onto the nearest wall, then using it as a touch screen to find a convenient subway station or bus stop. This is the promise of Sixth-Sense, a prototype wearable device invented by MIT engineer Pranav Mistry.

Mystery's device consists of a video camera and LED projector combined into a pendant worn around the neck. This is linked to a smart phone worn on the hip, which houses the device's software and links it wirelessly to the internet. The camera not only takes pictures, but also records the user's hand gestures. The software processes

these gestures and interprets them into actions.

SixthSense uses standard components and costs just $350 plus the cost of the phone.

HOW SIXTH SENSE WORKS?

The technology is mainly based on hand gesture

recognition, image capturing, processing, and manipulation, etc. The camera is used to recognize and track user's hand gestures and physical objects using computer-vision based techniques, while the projector is used to project visual information on walls or on any physical thing around us. Other hardware includes mirror and colored caps to be used for fingers.The software of the technology uses the video stream, which is captured by the camera, and also tracks the location of the tips of the fingers to recognize the gestures. This process is done using some techniques of computer vision.

APLLICATION:

The sixth sense also implements map which lets the user display the map on any physical surface and find his destination by just using his gestures.

TOP TEN E-SECURITY TIPS

M. Mounica , ¾ CSE A

1) Lost Devices

A creative counter-measure: Zomm's "wireless leash" for Bluetooth-enabled devices so you'd not leave your laptop behind.

2) Wireless Espionage

Look out for the tiny inexpensive cams that may be installed where they should not be.

3) Location Leakage

Location-awareness has become standard on 3G/4G/ Wi-Fi devices, but businesses should also be concerned about workers sharing business smartphone locations with any unauthorized third party.

4) Safer Backups

Backing up a laptop (netbook or smartphone) onto portable cloud storage has grown almost trivial. But With co-mingling of business and user data, the risk of business data ending up on unmanaged USB drives and third-party servers is growing.

5) Social Networking on Steroids

There are numerous social networking pitfalls one must be aware of as ignorance is no longer pardonable there.

6) Digital Living vs Data Leakage

Devices that use the Digital Living Network Alliance (DLNA) standard to discover, connect, and communicate with each other which means that leaking data stored on corporate laptops connected to home networks has also grown easier.

7) Malware inside the (home) firewall

As a broader variety of networked consumer electronic devices are deployed inside home networks, they could become a large and undefended target for hackers.

8) E-Reader explosion

IT departments should be on notice: Employees will carry these new e-Ink tablets into the office and connect them to corporate networks via Wi-Fi . The QUE ProReader even synchronizes with Outlook calendar entries and e-mail. So add e-Readers to your company's list of employee-liable mobile devices to evaluate and safeguard.

Complete peace equally reigns between two mental waves .
—Swami Vivekananda

9) 4G hits the road

This also seems to be the year for mobile 3G/4G routers. What do these high-speed mobile hotspots mean for enterprise security? they shatter the previously-assumed one-to-one binding between cellular data subscriber and user.

10) Wi-Fi Direct

Wi-Fi Direct may have the most immediate security impact. Unlike the infrastructure mode Wi-Fi used in enterprise WLANs, Wi-Fi Direct offers quick,temporary,peer-to-peer connections. Wi-Fi Direct bypasses AP or controller-based security policies.

PLACEMENTS

"I have attended Infosys and Deloitte campus recruitment processes, but between the two I would like to share with you my experience of Deloitte. I was one among the few people who cleared the written test and got an opportunity to attend the various levels of the interview process.

It would have been a better feeling to write this passage had I been on the other side of the coin. Anyways coming to the first hurdle in any interview process, the written test Deloitte tests students on a similar pattern as of cat (almost on par). Especially the standard of verbal section is quite high. Fortunately it basically tests the usage of English and not the synonyms (as in GRE). The quantitative aptitude section was quite manageable provided one has put in some basic practice on paper.

One having cleared the above section comes in to face another important part of the selection process Interview. We were under a dilemma whether there would be separate interviews for HR and technical but at the end of it was single interview comprising both. Maintaining the conventional standards the panel members were three.

Since their requirement was in the field of risk management they tested very basic knowledge on technical stuff and were focused more on the extracurricular activities. To give you a better picture some of the questions which I had to face were "let us know one scenario where you had shown exceptional leader qualities to arrive at a feasible solution giving the two different parties an accepting solution".

Questions like "tell me about you" were quite common. I was asked a few questions about the some facts of the Company Deloitte and the same were also shot at my friends too. So I suggest one to have a minute glance at their website (which is quite complex). On the contrary few of my batch mates were drilled on their project work. In my opinion they wanted people with excellent communication skills, good overall personality.

The interview section feedback which I have given is according to what I heard from first few students who were questioned on. Finally they have chosen just 4 out of the 17, two of them being from ECE and the rest two from IT."

Sutej Medikonda

4/4 CSE A

Placed at Infosys

I did not get into Infosys and the worst part was that it was because I could not clear the first round, which was the

Superstition is our great enemy, but bigotry is worse. .— Swami Vivekananda

aptitude test. We had Infosys on 17th of January and I realised that day I need to work on my aptitude skills, because no matter how much technical skills and personal skills you've got it does not matter in the campus placements until and unless you cross the first hurdle.

In the last of week Jan we had Wipro coming for recruitment and I was ready for it. I dedicated 1 week for the aptitude and just aptitude doing 3 hours a day.

On the D-day the aptitude test we wrote was completely new. It was not only different from the Infosys one but also it was an online exam.

In addition to the test we were even asked to write a small essay on a given topic to test our writing skills.

The online test consisted of 3 parts

1. Aptitude

2. Verbal

3. Technical (C & C++)

The aptitude I felt was again toughest of its kind and verbal was a bit easy .Technical was a cakewalk.

The duration of the test was 1 hour and we were asked to solve around 25 apt, 15 verbal and 10 technical questions.

I cleared the test and I was confident I would make it into Wipro. Following the test we had two rounds of interview, one technical and one HR. Clearing the technical round is mandatory to be in the HR round.

The technical round was conducted by a number of panels. I was sent to panel 1 which was like a rejection panel.

My technical interview started with questions on C followed by java which I told I was good at. Later the interviewer asked me about my mini project (Which was based on twitter). The question was like "...tell where do you think your project will come into some help?". Technical questions were like "Write a simple program to swap two no's in a single line of code". After 45 minutes of technical interview I was the first CSE guy to clear a Panel of Death :).

My HR round was quite short. Few questions I was asked were "tell me something very bad about your college", to which I answered in a positive manner saying that our college is one of the best and most reputed ones and bringing out the various facilities it provides us like Globarena and TIME training. I was also asked "are you ready with the bond? Are you ready with relocation?" etc. HR round mostly analyzes your communication skills and confidence. Finally after two days a strenuous process I made it through Wipro. I was very happy ."

By Rajkumar Goel
4/4 CSE A

Despondency is not religion, whatever else it may be.—
Swami Vivekananda

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