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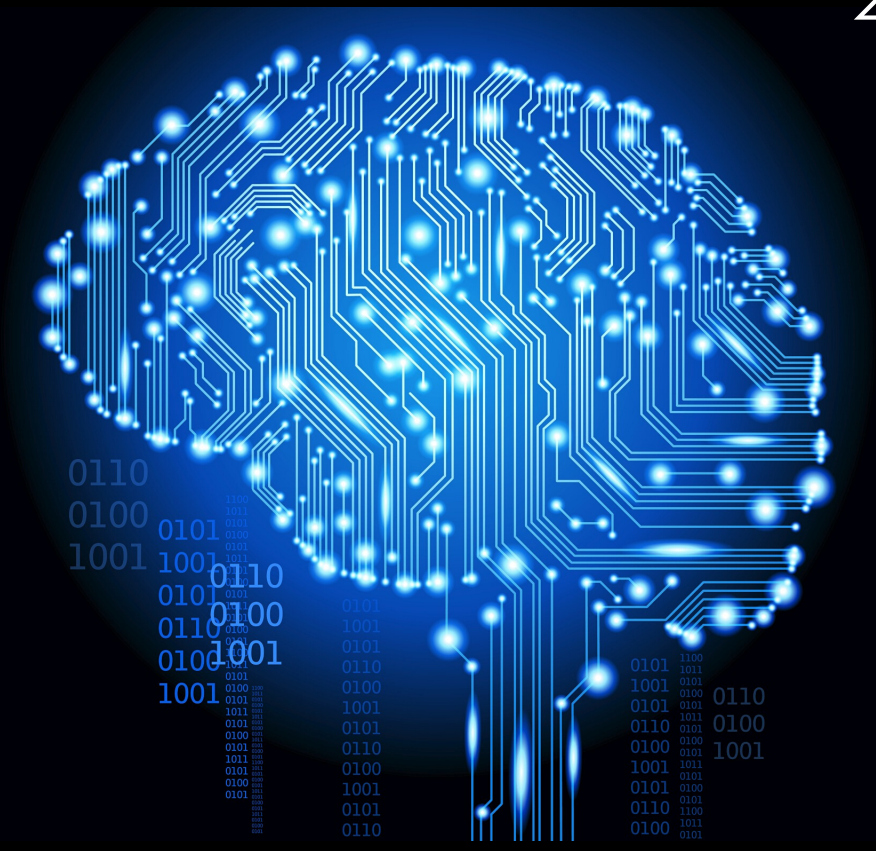

ZEAL

Editor:
Adithi Narayan

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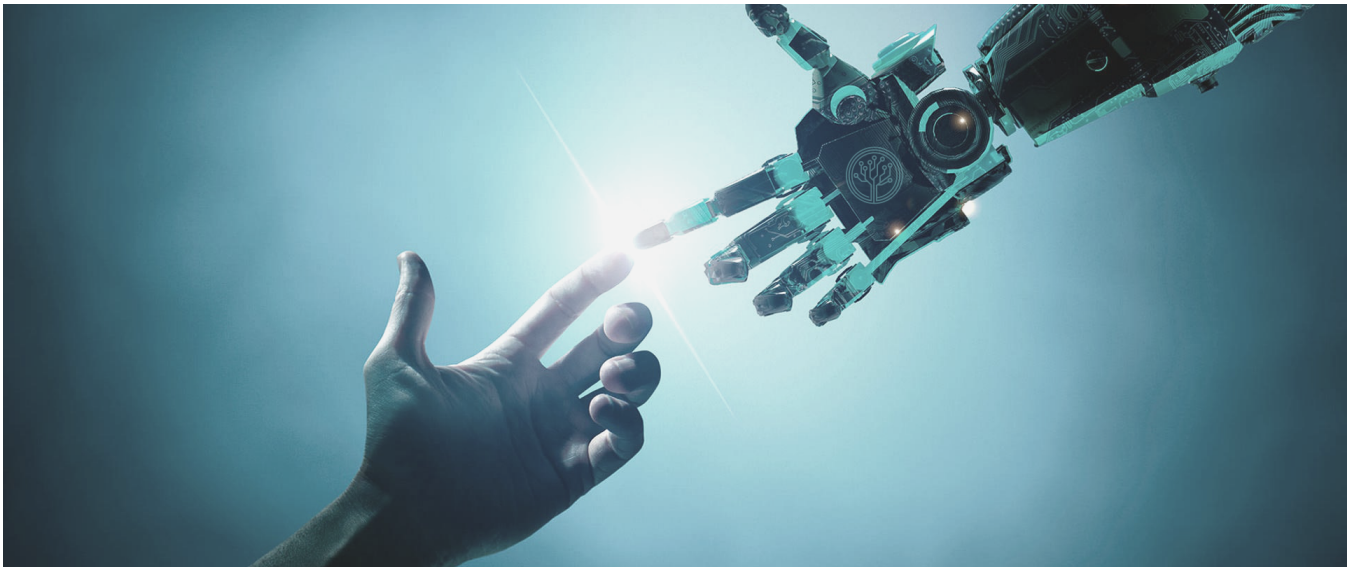
ABOUT ZEAL

Hello everyone, ASCII newsletter is back with a completely new look this year. Presenting to you: ZEAL, a platform open to anyone for showcasing literally anything. Did you read something about a innovative technology that blew your mind or you were sitting one day and something funny just popped in your head? Well, you can share it all. From educating to entertaining, it can be anything.



DEPARTMENT OF COMPUTER SCIENCE

VISION

To be acclaimed internationally for excellence in teaching and research in Computer Science & Engineering, and in fostering a culture of creativity and innovation to responsibly harness state-of-the-art technologies for societal needs.

MISSION

Mission 1: To assist students in developing a strong foundation in Computer Science and Engineering by providing analytical, computational thinking and problem solving skills.
Mission 2: To inculcate entrepreneurial skills to develop solutions and products for interdisciplinary problems by cultivating curiosity, team spirit and spirit of innovation.
Mission 3: To provide opportunities for students to acquire knowledge of state-of-the-art in Computer Science and Engineering through industry internships, collaborative projects, and global exchange programmes with Institutions of international repute.
Mission 4: To develop life-long learning, ethics, moral values and spirit of service so as to contribute to the society through technology.
Mission 5: To be a premier research-intensive department by providing a stimulating environment for knowledge discovery and creation.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

The Computer Science & Engineering Program graduates will

PEO1: Strive on a global platform to pursue their professional career in Computer Science and Engineering.
PEO2: Contribute to product development as entrepreneurs in inter disciplinary fields of engineering and technology.
PEO3: Demonstrate high regard for professionalism,integrity and respect values in diverse culture, and have a concern for society and environment.

PROGRAMME OUTCOMES (PO'S) AND PROGRAMME SPECIFIC OUTCOMES(PSO'S)

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3: Design and development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to Assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
PSO1: Adopt Standard Practices: Ability to design and engineer, innovative, optimal and elegant computing solutions to interdisciplinary problems using standard practices, tools and technologies.
PSO2: Research and Innovation: Ability to learn emerging computing paradigms for research and innovation

THE ADEPT'S OUTLOOK

Jyothi Vaidyanathan

Make sure you focus on the following things:

1. Coding: Ensure you can code well in at least two languages. Solve regular coding questions for the initial rounds, as well as learn to code design based questions, OS topics like LRU cache, multithreading, any feature using OOPS concepts, etc as these types of questions would be asked during interviews/ long coding rounds. For coding, you can practice from GeeksforGeeks, HackerRank, HackerEarth, etc.

2. Core subjects: Only learning theory and not knowing how to apply concepts to a problem won't help much. Quizzes can help you a lot in this. Apart from that, go through frequently asked questions, practice writing queries, understand which data structure can be used best for a problem, etc. You must know the 'basics' of all the core subjects- the content that you learn during the semesters. If you have done a project/ certification in any of the subjects, you may be asked questions in detail. The subjects that you learn as your electives may also help.

3. Projects/ Certifications: This helps a lot during the interviews. Please understand that if you do a certification, do not forget the concepts that you have learnt. Work out those concepts out as much as possible. If you are using a particular concept, try to understand how it came about, what issues did that concept solve. Generally, if you do a project in a team, you would split up the work and assign few modules to each person. You obviously won't know the lines of code that your teammate has done, but it is a good practice to know what tech stack has been used in the project as a whole, what approach has been followed by your teammates. The companies look at this point keenly. It doesn't matter if your projects are in progress at the time of the interview, what matters is how confident you are about it. You may be asked questions, for example- to add a particular feature to the software that you had developed, what modifications will have to be made, in what ways can you make your software even better, etc.

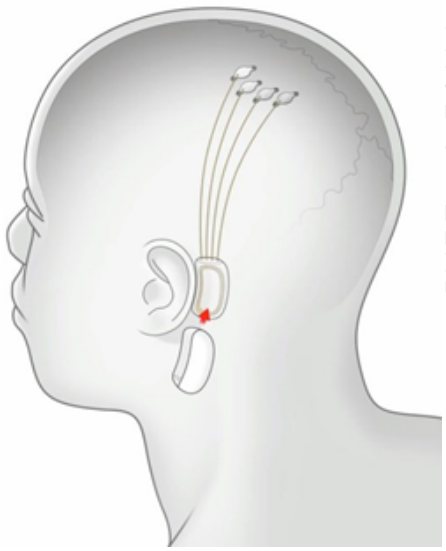
THE ADEPT'S OUTLOOK

Your extra curricular and co-curricular activities also matter a lot- be it conducting events, participating in social events, taking part in tech fests/ competitions, etc. Be sure of what you put on your resume. Try to know well about the company before the interview.
Pay attention to what the recruitment team speaks during the interactive session. It shows your interest towards the company and helps you learn more about the company. Once your interview is over, the interviewer(s) would ask you whether you have any questions to ask them. Use this opportunity to know more about the company. When asked a question, always stick to the point.

Don't be stressed during the interview. A calm mind will help you think better. During the online tests/ interviews, if you weren't able to answer a question from any topic, or you didn't know how to approach the problem, later that day or the next day, try to approach it again and learn it. Maintain a notebook for notes or save important articles in your phone to revise the day before the exam/interview.

Please have proper food before attending the tests/ interviews (an empty stomach doesn't help :P) Relax a little before you leave for the test/ interviews. Discuss with your friends during preparation/ before exam if possible, you will learn a lot together, but please don't discuss during the online tests. Be consistent with your preparation. Please don't compare your results with others, compare your current result with the previous ones, it will help you more. It is very important to be strong not only technically but also emotionally. Be confident in your abilties.

All the best pals!



CREATING SUPER-HUMANS WITH NEURALINK

ARVIND BALAJEE A

We constantly hear about new phone and new applications, but we hardly hear about a new technology that has the potential to change humanity. Today we are going to talk see about Neuralink, a company founded by Elon Musk. Elon musk believes that AI is advancing in an enormous rate and computers are getting superfast and that we are getting slower compared to those. Our input (gathering information) speed is fast but our output (interaction with system) is slower that eventually means that we are not using the computers to their complete potential. So neuralink manages to have a solution for this. They use implantable brain-machine interface to gather information from our brain and transfer wirelessly to a machine, which reduces the input delay by a lot. This means that if you want to order something online you just need to think about it and the system will do it for you. They manage to do this by implanting electrodes of size 4 to 6 µm, in our brain. These electrodes capture the electrical pulses between neurons and translate them to useful information. These electrodes are inserted in our brain using a robot so that our blood vessels in our brain are not damaged. They also claim that using this they can even cure brain disorders like Parkinson's diseases.

But it does not stop with just that. All our body parts are controlled by our brain, so they believe that with this we can do wonders.

. A person who cannot speak can get his ability back by connecting a speaker to a BMI to the brain.

Not just that we can also improve the functionality of the prosthetic body parts by linking them with the neurons directly. All this sounds very painful right? But they have a way to get rid of that too. A general neural surgery will need your nice hairstyle to be shaved clean, a good generous cut in your head and an anaesthesia to make you to sleep. Neuralink removed all those. To implant this only a small hole cut in your head is enough to get those electrodes implanted. Still this seems awfully painful, but they claim that these holes are so small that you won't feel that uneasy at all. This is not ready to deploy yet. Animal trials are on the process and soon this will be a reality. They also believe that on further development we can achieve high bandwidth BMI and eventually achieve a symbiosis with AI. Sooner or later we are going to remove touch screens, just like Steve jobs removed the keypad.

The tradition of passing on doesn't only exist in families among siblings as exchanging school books, clothes and so on, this reuse heritage is exhibited by a wonderful wildlife lifeform, the decapod crustaceans, the Hermit crabs. Hermit crabs uses abandoned seashells as its shelter. When the crab grows, its growth spurt outweighs its shell. Eventually, it needs to upgrade to a bigger one for the ease of space and convenience. So, the community of crabs which are longing for the new homes begin their hunt. But the suitable seashells which washes ashore are few and far between, so the species gather themselves and starts inspecting each other's shells. When the group allocates a perfectly fitting shell for the biggest crab, it's the moment of the miraculous event. The crabs arrange themselves in an orderly queue, the biggest in the front and the smallest at the back. Then the trial starts to exchange their houses with the previous ones by moving themselves ahead. And this is how a reusable cohabitation occurs.

Humans move from one place to another by various transportation. Ever wondered how the most diverse group of arthropods, the insects do? One such remarkable creature is the DARWIN'S BARK SPIDER, which is an orb weaver spider. Like a real-life spider woman, the female ones produce the wide-reaching orb webs. She sprays strands of silk in one long, continuous flow and it stands like a sail and so taken care by the drift of wind. The thread is crimped every few seconds, in order to stop spreading them widely. Then the thread is woven into a bridge line which ranges up to 25 metres. At last it is reinforced again to avoid the hanging of webs. The spider discovered in Madagascar, in Andasibe- Mantadia National park is fascinating, isn't it?

MINI 'N' NATURE

SAI BRAHADEESH B

Loved binge watching the thriller Money Heist in Netflix? Well, take a deep insight at ant heist and slavery, the ants who can't feed themselves, the kidnapper ants. Kidnapper ants raids other ant species by digging into other ant species colonies. They abduct the young ones, the developing juveniles, especially the black ants. The kidnappers use their pointy, oversized mandibles to snatch and haul the young ones back to their nest. The ants then imprint their scents by coating on the new arrivals to prevent it from distinguishing their breed. When the enslaved babies grow up, the kidnapper ants trick them into captors and use it for hunting food, cleaning their nest and even to regurgitate their food into mouth. Thus, making it a slave for the rest of their life.

CREATIVITY SPLASH

G. LAKSHMI YAMINI

Logic
WILL GET YOU FROM
A => B
Imagination
TAKES YOU
EVERY
WHERE