ACE NEWSLETTER

DEPt OF COMPUTER SCIENCE and ENGINEERING

AUGUST-2K17

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ELON MUSK

THE ROCKET MAN WITH A SWEET RIDE

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ELON MUSK.

The Rocket Man With a Sweet Ride.

The winner of the Smithsonian Ingenuity Award for technology hopes to launch a revolution with his spaceship and electric car.

Musk wants to fundamentally alter the way we travel, the energy we consume and our legacy as earthbound human beings. Listening to the self-confident and boyish 41-year-old wearing blue jeans and a black and white checked shirt rocking back and forth in his Aeron chair, he sounds ridiculous: He talks about nuclear fusion and colonizing Mars and airplanes that take off vertically. You want to slap him, put him in his place, or just laugh and dismiss him, which is what the aerospace industry did when he first announced plans to disrupt an industry so technically difficult and capital intensive that it has belonged to the world's richest governments.

But Musk looked skyward and said he could build a rocket that would put cargo and humans into orbit cheaper and more reliably than any nation or corporation had ever done before, and that he could do it faster than any other private company. Today he is CEO and chief designer at Space Exploration Technologies, known as SpaceX, whose Dragon space capsule first docked with the International Space Station in May in a test flight, a feat achieved by only three nations and the European Space Agency—and, for now, the United States' sole means of reaching the ISS without foreign help. SpaceX has sent five rockets into orbit, has $1.6 billion in contracts from NASA, 45 launches on order and employs 2,000 people designing and building more rocket engines than any other company on earth

When he's not launching rockets, Musk is disrupting the notoriously obdurate automobile industry . While industry giants like Chevrolet and Nissan and Toyota were dithering with electric-gasoline hybrids, this upstart kid said he would design and manufacture an all-electric car that would travel hundreds of miles on a single charge. The Tesla Roadster hit the streets in 2008 with a range of 200 miles, and the far more functional Model S, starting at $57,000, was introduced in June. It's the world's first all-electric car that does everything my old gasoline version does, only better. The high-end model travels 300 miles on a single charge, leaps from zero to 60 in 5.5 seconds, slows from 60 to a dead stop in 105 feet, can seat up to five, has room for mulch bags and golf clubs, handles like a race car and its battery comes with an eight-year, 100,000-mile warranty. If you charged it via solar panels, it would run off the sun. One hundred a week are being produced in a former Toyota factory in Fremont, California, and nearly 13,000 people have put deposits on them.

As if the space and cars weren't enough to tackle, Musk is simultaneously trying to revolutionize the energy industry as well. He is the biggest investor and chairman of the board of Solar City, one of the largest suppliers of solar energy technology and a key piece of his aim to change not just energy consumption, but energy production.

Musk's rocket docking with the space station on only its second flight required a "sequence of miracles that was a phenomenal achievement," says Michael Lopez-Alegria, a former Navy test pilot, a veteran of four NASA space shuttle missions and president of the Commercial Spaceflight Federation.

"Musk said here's what I'm going to do and he did it," says Gen. Jack Dailey, director of the Smithsonian National Air and Space Museum. "He's the real thing and that's pretty clear now."

- Suba K V
3rd CSE.B

Year Plan (2017-2018)

Date / Day	Program/Activity Name	Type of Program	Beneficiaries
18/08/2017 Friday	ACE Inauguration	Ceremony	All CSE Student
12/08/2017 Saturday	Technical Seminar	Enrichment	IV CSE Students
31/08/2017 - 01/09/2017	III CSE – Industrial Visit	Study Visit	III CSE Students
09/09/2017 Saturday	Workshop on MATLAB	Enrichment	IV CSE Students
23/9/2017 Saturday	C/JAVA/MATLAB Training	Skill Development	II ,III &IV CSE Students
06/01/2018 Saturday	C++, PHP Training	Skill Development	I &III CSE Students
06/01/2018 - 17/01/2018	North India Tour	Study Visit	IV CSE Students
03/02/2018 Saturday	C++, PHP Training	Skill Development	II &III CSE Students
16/02/2018 Friday	II CSE – Industrial Visit	Study Visit	II CSE Students
24/02/2018 Saturday	NS3 workshop	Enrichment	III CSE Students
03/03/2017 Saturday	C++, PHP Training	Skill Development	II &III CSE Students
10/03/2017 Saturday	C++, PHP Training	Skill Development	II &III CSE Students
23/03/2018 Friday	ACE-Valedictory function	Ceremony	All CSE Students

Year Plan (2017-2018)

24/03/2017 Saturday	C++, PHP & Networking Training	Skill Development	II &III CSE Students
31/03/2017 Saturday	C++, PHP Training	Skill Development	II &III CSE Students

Past Events.

Final year tour on 06-01-2017 to 16-01-2017

Past Events.

Industrial Visit to UST Global at Trivandrum was organised on 22 february 2017

JOB FAIR SUCCESS TIPS AND TRICKS FOR ENGINEERS

<u>*BEFORE THE FAIR*</u>

Dress to Impress –

- Buy a suit, get a haircut 1-2 weeks before and don't forget to shave. Be sure that you have <u>comfortable</u> dress shoes and everything is clean, pressed, shined and matched. Check it out while you still have time to fix it. Conservative is best for engineers – black, gray, navy, brown/tan and a basic solid shirt and tie for guys and solid or subtle print for women.

- Go easy on the smells – what you think is perfect in cologne may remind someone else of their ex-wife or may cause an allergic reaction. And don't forget the deodorant – it will get hot and crowded.

- Jewelry should be limited to a professional watch and 1 ring per hand, small earrings for women – generally none for men at a job fair or interview. Ladies - watch clunky or noisy bracelets and keep any makeup or hairstyles simple. Use the basic rule – if you look in the mirror and wonder if it looks okay or if an item is too much, you probably need to remove it or change it. YOU, your personality and your abilities should stand out, not your appearance.

- Invest in a professional portfolio to carry your resume copies, your memo pad and at least 2 working pens.

Be Prepared –

- Develop a strong resume that is error-free, concise and easy to read. The formatting should guide the eye to sections that highlight your unique skills, training and accomplishments. Plan on having <u>double</u> the number of copies you think you will need – you will always find more companies that you want to leave a copy with for their review.

- Be sure that the copies are on quality resume paper (not copy paper) – it does not have to be the most expensive brand. Just get a standard weight and choose white, light gray or cream. All your written correspondences will be on this paper (cover letter, references, thank you or acceptance/rejection letters), so buying a box with at least 10 matching envelopes is a good ideal.

- Obtain a list of the attending companies before the job fair – see http://career.utk.your HIRE-A-VOL account, Office of Professional Practice, Conference Agendas/Information. Check out websites or call the organizers to get the lists.

- Build your "Top 10 List" and "Second 10 List" based on the time you have to spend at the job fair. Choose the companies based on what majors they are recruiting, your interest in working for them based on your research and style (large vs. small, international vs. regional, location, culture of company, specific career opportunities, products, mission, etc.). Your "Top 10" will be the 10 you are most interested in talking to and then you build from there.

- DO YOUR RESEARCH on your "Top 10" and develop your 30-second commercial about yourself, along with 2-3 individualized questions for each company. This can start out the same for each company, but should then focus on personalizing for each company or position.

Nothing impresses an employer less than a student who asks "So what do you do?" Be one of the few students who know something about the company. The company should feel that you have chosen them specifically and that you have really looked at their company and thought about why you would be a good fit for their needs. Enthusiasm and real interest is the key, along with your ability to show them your unique skills that can fit their organizational goals. <u>The more informed you are, the more positively you will be remembered.</u>

For example: *"Hi, my name is Leslie Fox and I will be graduating in May 2008 with my Bachelor of Science in Civil Engineering with an emphasis in Construction Management. I have had the opportunity to do 2 summer internships with XYZ Construction and ABC Development and am completing my senior project with WWW Company on ….. . During those internships, I particularly enjoyed the training and hands-on experience I received in large-scale projects such as the Baptist Hospital West addition and the planning for the new Washington Convention Center. In researching your organization, I saw that you specialize in large-scale developments, particularly governmental and medical facilities. Can you tell me more about those projects and are you hiring full-time Civil Engineers to work on those developments?*

Or: *I am a senior graduating in May 2008 in Electrical Engineering and I am particularly interested in working with companies who have an international presence. I noticed that your company has multiple locations throughout Europe and Asia and is looking at entering the South American market as well. Can you tell me more about the position and your international opportunities?*

▪ PRACTICE, PRACTICE, PRACTICE! But don't become robotic – be sincere and confident and show your enthusiasm. And remember, you will be changing your commercial at least a little bit for each company.

▪ Prepare notes on a memo pad (in your portfolio – leave at least 5 clean sheets on top for quick notes during fair) for each company – 1 page per company – and then take a moment to review those notes and questions before you walk up to each booth.

<u>DURING THE FAIR</u>

▪ Visit the restroom and do a final check before you enter the fair. Pop a breath mint, check your appearance, get a drink of water and take a moment to review your notes from your research.

▪ Try to get a map of the companies at the fair and locate your "Top 10". Plan how you will proceed to maximize your time.

▪ If you have a backpack, try to find a place to leave it along with your coat or jacket. Most fairs will have a designated place for this. You should only have your portfolio and a small purse (if needed) as you continue through the job fair.

▪ Don't start with a company that really matters. Choose a company that is lower on your list or one that you identify as something that might be interesting, but you did not put on your targeted list. You may even choose 2 or 3 to "practice" on before you visit your primary companies. You may discover a new opportunity!

▪ Focus on what you can offer the companies at each visit – not what they can do for you and your career. Remember, it is not about the "give-aways", but it is okay to take them if you can carry them without looking like a pack rat!

▪ After speaking with each company, walk away from the booth and then flip to their page in your portfolio and add additional notes, comments and dates to follow-up or action steps to take. Do it immediately, so you don't forget the specifics for each company.

▪ Get a business card or obtain contact information from each of the companies you speak with at the job fairs. This will be used for all follow-up after the fair.

▪ Thank the companies for coming to the job fairs – helps you stand out and the company feels that they made a good choice to choose UT – Knoxville as a recruiting opportunity. If they see you as a strong representative of UT, they will see as a strong representative for their company.

AFTER THE JOB FAIR

▪ Spend time after the event to reflect on the companies and your conversations with the representatives. Write down your thoughts and consider your next steps. Are there things you need to do to improve your next recruiting opportunity or interview?

▪ Follow-up on your promises – any action steps or items to review that the company requested or you offered to provide.

▪ Send thank you e-mails or notes – written letters are usually stronger. You will want to follow-up with all of your "Top 10" and any other companies you are interested in and thank them for speaking with you at the fair and indicating that you have completed any requested action items. If you receive an immediate interview, then you will follow up with the thank you after the interview. Thank you e-mails or notes should be sent within 24 – 48 hours after any contact occurs.

Top Qualities/Skills Employers Want from YOU *(NACE Job Outlook 2008)*
Communication Skills
Strong Work Ethics
Teamwork Skills (works well with others)
Initiative
Interpersonal Skills (relates well to others)
Problem-solving skills
Analytical skills
Flexibility/Adaptablity
Computer skills
Technical Skills

What Employers Want You to Know About THEM *(UT and Clemson Research 2007)*
What are the primary products or services and the history – what do they make or do?
What is the company standing in the marketplace – are they the leader, #2 or just getting started?
Who are their typical clients and/or customers?
Where are the headquarters located? Any other main locations?
What are the specific details of the position/program you are interested in?
Who are their competitors?
What is the organizational mission?
What are the emerging issues that may affect the industry or the organization?
What divisions make up the organization?
What is the corporate/organizational culture?

- Priya Darshini K
4th CSE.B

QUANTUM COMPUTER

What is Quantum Computer?

A computer which makes use of quantum states of subatomic particles to store information.

Quantum:

A discrete quantity of energy proportional in magnitude to the frequency of the radiation it represents.

What is Quantum Computing?

Quantum computing studies theoretical computation systems (quantum computers) that make direct use of quantum-mechanical phenomena, such as superposition and entanglement, to perform operations on data. *Quantum computers are different from binary digital electronic computers based on transistor*. Whereas common digital computing requires that the data be encoded into binary digits (bits), each of which is always in one of two definite states (0 or 1), *quantum computation uses quantum bits*, which can be in superpositions of states.
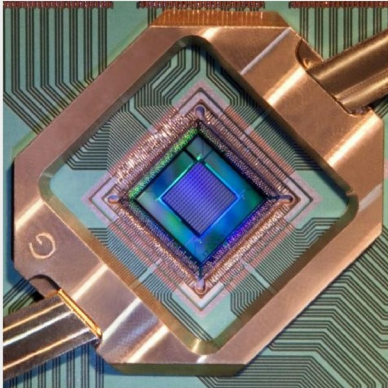
Basics of Quantum computing:

A classical computer has a memory made up of bits, where each bit is represented by either a one or a zero. *A quantum computer maintains a sequence of qubits.* A single qubit can represent a one, a zero, or any quantum superposition of those two qubits state a pair of qubits can be in any quantum superposition of 4 states, and three qubits in any superposition of 8 states. *In general, a quantum computer with qubits can be in an arbitrary superposition of up to different states simultaneously (this compares to a normal computer that can only be in one of these states at any one time).*
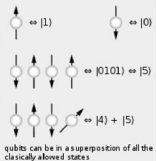
Will we ever have the amount of computing power we need or want? If, as **Moore's Law** states, the number of transistors on a microprocessor continues to double every 18 months, the year 2020 or 2030 will find the circuits on a microprocessor measured on an atomic scale. And the logical next step will be to create quantum computers, which will harness the power of *atoms and molecules* to perform memory and processing tasks. Quantum computers have the potential to perform certain calculations significantly faster than any silicon-based computer.

Computer scientists control the microscopic particles that act as qubits in quantum computers by using control devices.

➢ Ion traps use optical or magnetic fields (or a combination of both) to trap ions.
➢ *Optical traps* use light waves to trap and control particles.
➢ *Superconducting circuits* allow electrons to flow with almost no resistance at very low temperature

D-Wave Systems, Inc. is a quantum computing company, based in Burnaby, British Columbian, Canada. D-Wave is the first company in the world to sell quantum computers.

The D-Wave One was built on early prototypes such as D-Wave's Orion Quantum Computer. The prototype was a 16-qubit quantum annealing processor, demonstrated on February 13, 2007 at the Computer History Musium in mountain View,California D-Wave demonstrated what they claimed to be a 28-qubit quantum annealing processor on November 12, 2007. The chip was fabricated at the NASA Jet propulsion Laboratory Microdevices Lab in Pasadena, California

- Ayyappan
3rd CSE.A

Terms and Defenitions.

Term	Definition
AppleTalk Address Resolution Protocol	Provides for the dynamic assignment of node identifiers to nodes within an AppleTalk network.
Agent Building and Learning Environment	A Java framework and toolkit for constructing and deploying intelligent agents.
Active Directory	The directory service portion of the Windows 2000 operating system. AD manages the identities and relationships of the distributed resources that make up a network environment.
Body Area Networks	an emerging field of technology that has the potential to revolutionize healthcare and pathbreaking applications in sports, communications and security.
Bulletin Board System	A computerized meeting and announcement system that allows people to carry on discussions, upload and download files, and make announcements without the people being connected to the computer at the same time.
Binary Gateway Interface	Provides a method of running a program from a Web server. Similar to a Common Gateway Interface (CGI). The BGI uses a binary DLL which is loaded into memory when the server starts. While more efficient han a CGI, the BGI must be compiled and is not easily portable to other environments.
BLade Server	An HP brandname for ProLiant BladeServers, which are designed for the performance, management, density and total cost of ownership (TCO) savings requirements of data centers.
CA Productivity Accelerator	a set of interactive features and functions to help ease training, navigation, use and process adoption of the product once it is live and in use in the field.
C Beautifier	A tool for tidying the syntax of source code.
Closed captioning	A service that transmits text captions for a television program and can be displayed on any modern television with a display size measuring greater than 13 inches (33 cm) diagonally.
Cell Broadband Engine	A breakthrough microprocessor with unique capabilities for applications requiring video, 3D graphics, or high-performance computation for imaging, security, visualization, health care, surveillance, and more.
Disk Array Enclosure	The DAE is a JBOD (Just a Bunch Of Disk) enclosure without a storage processor (SP). The DAE supports up to 10 Fibre Channel drives per enclosure and is connected by dual Fibre Channel loops into the DPE.
Dedicated Advertiser	A type of iTV ad in development, online advertisers are proposing Simple DALs and Complex DALs. A Simple DAL refers to the data that users reach on the screen, once they leave a video

Location	(TV) stream. Viewers will be able to leave a broadcast stream, beyond the duration of an ad, but will then get rapidly returned to it after navigating past some qualifier screens.
Data Display Debugger	a popular graphical user interface for command-line debuggers such as GDB, DBX, JDB, WDB, XDB, the Perl debugger, and the Python debugger.DDD is licensed under the GNU GPL and is open source.
directory harvest attack	an attempt to determine the valid e-mail addresses associated with an e-mail server so that they can be added to a spam database.
Density Line	An HP brandname for the ProLiant Density Line, which are servers in one-, two- and four-socket designs, optimized for rack-mounted server environments.
dynamic link library	A Windows mechanism that links executable code modules to an application program or process. A DLL is loaded at runtime by the application or process that invokes it.
Electronic discovery	the collection, processing and review of large amounts of ESI within an enterprise to meet the mandates imposed by common law requirements for discovery. These demands may be due to civil or criminal litigation, regulatory oversight, or administrative proceedings. An independent group of consultants, legal scholars and vendors have created and put into the public domain an "E-Discovery Reference Model" ([EDRM)
Elastic Compute Cloud	Amazon EC2 allows customers to rent computers on which to run their own computer applications. EC2 allows scalable deployment of applications by providing a web services interface through which a customer can create virtual machines, i.e. server instances, on which the customer can load any software of their choice.
eCommerce integrator	A service provider that offers strategy, marketing, design, and technical services for eBusiness. Technical services are custom development, commerce package implementation, and application integration, not hosting or network services.

- Annie Richie R
4th CSE.A

TOP 10 trending jobs of 2017

- Java Development
- Algorithm design
- Play architecture
- Network and information security.
- User interface design.
- Storage systems and management.
- Mobile development
- Statistical analysis data mining
- Cloud and distributed computing.
- Infrastructure systems.

Top 20 tips to be a smart engineer.
Tip #1: Learn how to learn
Tip #2: Commit to a reading schedule
Tip #3: Improve your health
Tip #4: Practice interviewing
Tip #5: Create a blog
Tip #6: Upgrade yourself
Tip #7: Launch a side project
Tip #8: Make connections now, not later
Tip #9: Start tracking your time
Tip #10: Utilize a productivity technique
Tip #11: Work on your Soft Skills
Tip #12: Join the community
Tip #13: Develop a routine
Tip #14:Start Coding.
Tip #15: Plan your year
Tip #16: Learn a new technology
Tip #17: Get to know your IDE better
Tip #18: Have your resume professionally written
Tip #19: Create a personal brand
Tip #20: Specialize

Computers and Internet
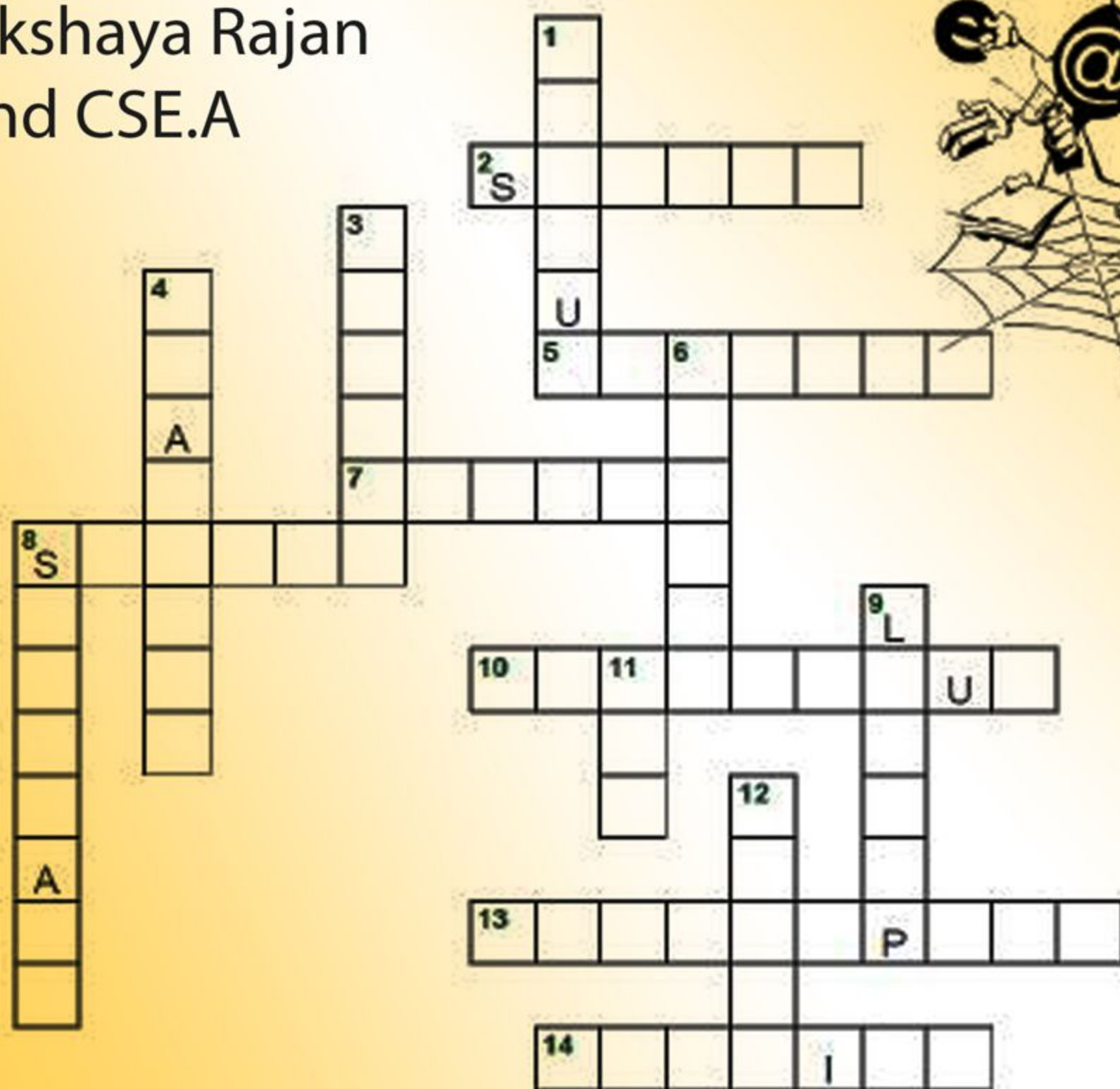
Using the Across and Down clues, write the correct words in the numbered grid below.

- Akshaya Rajan
  2nd CSE.A

ACROSS

2. the part of the computer that you look at

5. instructions for a computer to follow

7. a type of communications systems that sends messages via internet

8. person who is always using and constantly online

10. a person who uses the Internet

13. the imaginary place where electronic messages, etc. exist while they are being sent between computers

DOWN

1. (making a) copy of a file, program, etc.

3. a person who secretly finds a way of looking at and /or changing information on somebody else's computer without permission

4. an area on the Internet where people can communicate with each other

6. on the Internet

8. computer programs

9. a portable personal computer