

Srinivasa Ramanujan Centre
Kumbakonam

AI – Yatra
SASTRA-TIC Initiative

Summer Vacation - 2026
Learn to Learn Magic
LLM@SRC
Artificial Intelligence in 21 Days

Compiled by

Dr.B.Santhi
Dean
Srinivasa Ramanujan Centre

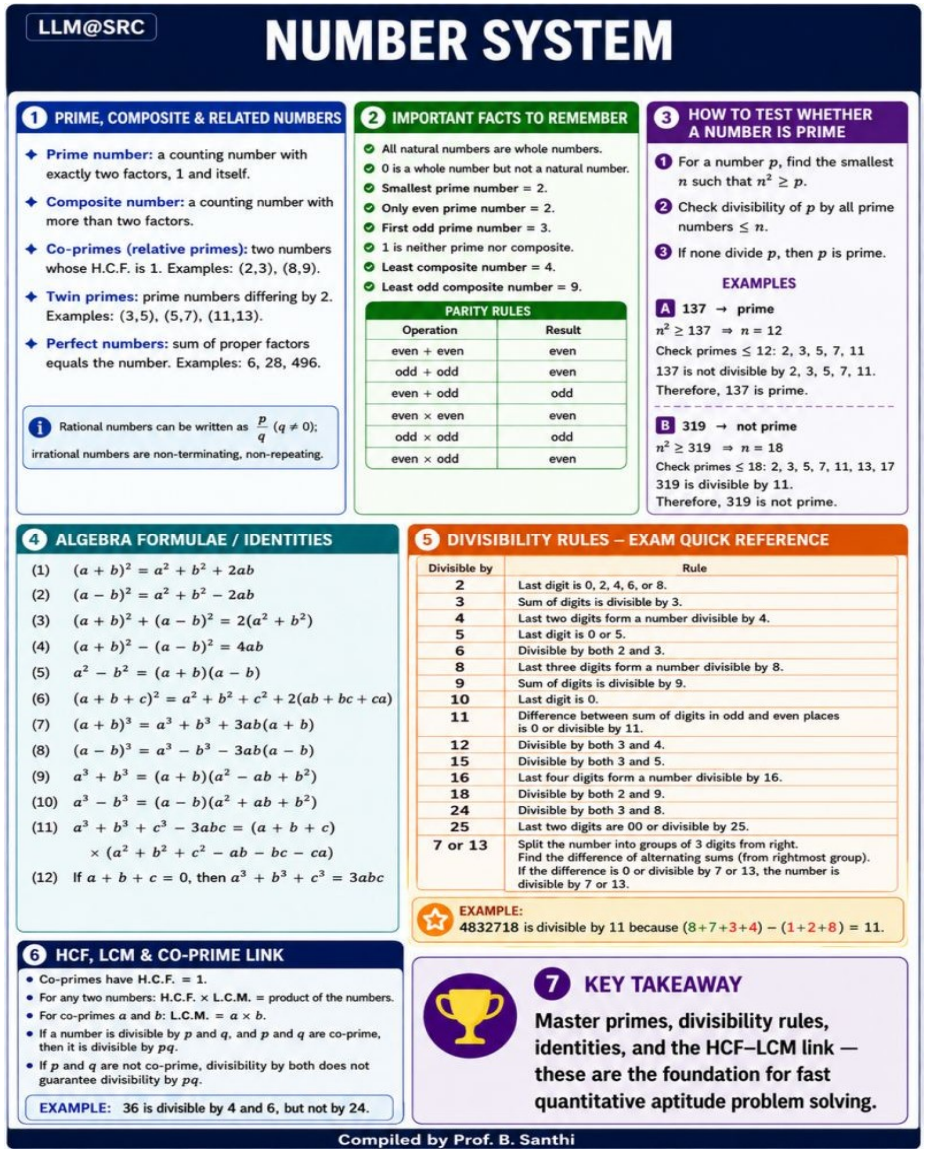
OBJECTIVES



LEARN TO LEARN – MAGIC (LLM @ SRC)


Learning Doesn't Take a Vacation!
51-Day AI & Machine Learning Skills Campaign
SRC | SASTRA University
51 DAYS
51
LEARN GROW LEAD
01 Why this initiative?
At SRC, we believe a vacation should never become a vacation from learning. Every break is an opportunity to nurture curiosity, build new skills, and prepare students for the future.
02 What we launched
A 51-Day AI & Machine Learning Skills Campaign delivering one crisp, informative infographic every day.
AI
03 How it helps
DAILY INFOGRAPHIC
Keeps students connected with emerging AI concepts
Promotes micro-learning without formal classroom pressure
Builds curiosity, consistency, and future-ready skills
Supports AI-ready & Industry-ready learning
04 Core message
"Education is not defined by the academic calendar – it's defined by the willingness to learn, every single day."
One infographic. One new concept.
One step closer to becoming
AI-ready & Industry-ready.
#ArtificialIntelligence | #MachineLearning | #MicroLearning | #FutureSkills | #DigitalLearning
#StudentSuccess | #LifelongLearning | #SRC | #SASTRAUniversity

Day 1 Number Systems



LLM@SRC

NUMBER SYSTEM

1 PRIME, COMPOSITE & RELATED NUMBERS

- **Prime number:** a counting number with exactly two factors, 1 and itself.
- **Composite number:** a counting number with more than two factors.
- **Co-primes (relative primes):** two numbers whose H.C.F. is 1. Examples: (2,3), (8,9).
- **Twin primes:** prime numbers differing by 2. Examples: (3,5), (5,7), (11,13).
- **Perfect numbers:** sum of proper factors equals the number. Examples: 6, 28, 496.

Rational numbers can be written as $\frac{p}{q}$ $(q \neq 0)$; irrational numbers are non-terminating, non-repeating.

2 IMPORTANT FACTS TO REMEMBER

- All natural numbers are whole numbers.
- 0 is a whole number but not a natural number.
- Smallest prime number = 2.
- Only even prime number = 2.
- First odd prime number = 3.
- 1 is neither prime nor composite.
- Least composite number = 4.
- Least odd composite number = 9.

PARITY RULES

Operation	Result
even + even	even
odd + odd	even
even + odd	odd
even × even	even
odd × odd	odd
even × odd	even

3 HOW TO TEST WHETHER A NUMBER IS PRIME

1. For a number p, find the smallest n such that $n^2 \geq p$.
2. Check divisibility of p by all prime numbers $\leq n$.
3. If none divide p, then p is prime.

EXAMPLES

A 137 → prime

$n^2 \geq 137 \Rightarrow n = 12$

Check primes ≤ 12: 2, 3, 5, 7, 11

137 is not divisible by 2, 3, 5, 7, 11.

Therefore, 137 is prime.

B 319 → not prime

$n^2 \geq 319 \Rightarrow n = 18$

Check primes ≤ 18: 2, 3, 5, 7, 11, 13, 17

319 is divisible by 11.

Therefore, 319 is not prime.

4 ALGEBRA FORMULAE / IDENTITIES

(1) $(a+b)^2 = a^2 + b^2 + 2ab$

(2) $(a-b)^2 = a^2 + b^2 - 2ab$

(3) $(a+b)^2 + (a-b)^2 = 2(a^2 + b^2)$

(4) $(a+b)^2 - (a-b)^2 = 4ab$

(5) $a^2 - b^2 = (a+b)(a-b)$

(6) $(a+b+c)^2 = a^2 + b^2 + c^2 + 2(ab+bc+ca)$

(7) $(a+b)^3 = a^3 + b^3 + 3ab(a+b)$

(8) $(a-b)^3 = a^3 - b^3 - 3ab(a-b)$

(9) $a^3 + b^3 = (a+b)(a^2 - ab + b^2)$

(10) $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$

(11) $a^3 + b^3 + c^3 - 3abc = (a+b+c) \times (a^2 + b^2 + c^2 - ab - bc - ca)$

(12) If $a+b+c = 0$, then $a^3 + b^3 + c^3 = 3abc$

5 DIVISIBILITY RULES – EXAM QUICK REFERENCE

Divisible by	Rule
2	Last digit is 0, 2, 4, 6, or 8.
3	Sum of digits is divisible by 3.
4	Last two digits form a number divisible by 4.
5	Last digit is 0 or 5.
6	Divisible by both 2 and 3.
8	Last three digits form a number divisible by 8.
9	Sum of digits is divisible by 9.
10	Last digit is 0.
11	Difference between sum of digits in odd and even places is 0 or divisible by 11.
12	Divisible by both 3 and 4.
15	Divisible by both 3 and 5.
16	Last four digits form a number divisible by 16.
18	Divisible by both 2 and 9.
24	Divisible by both 3 and 8.
25	Last two digits are 00 or divisible by 25.
7 or 13	Split the number into groups of 3 digits from right. Find the difference of alternating sums (from rightmost group). If the difference is 0 or divisible by 7 or 13, the number is divisible by 7 or 13.

EXAMPLE:
4832718 is divisible by 11 because (8+7+3+4) − (1+2+8) = 11.

6 HCF, LCM & CO-PRIME LINK

- Co-primes have H.C.F. = 1.
- For any two numbers: H.C.F. × L.C.M. = product of the numbers.
- For co-primes a and b: L.C.M. = $a \times b$.
- If a number is divisible by p and q, and p and q are co-prime, then it is divisible by pq.
- If p and q are not co-prime, divisibility by both does not guarantee divisibility by pq.

EXAMPLE: 36 is divisible by 4 and 6, but not by 24.

7 KEY TAKEAWAY

Master primes, divisibility rules, identities, and the HCF–LCM link — these are the foundation for fast quantitative aptitude problem solving.

Compiled by Prof. B. Santhi

Day 2 Why AI Hallucinates?



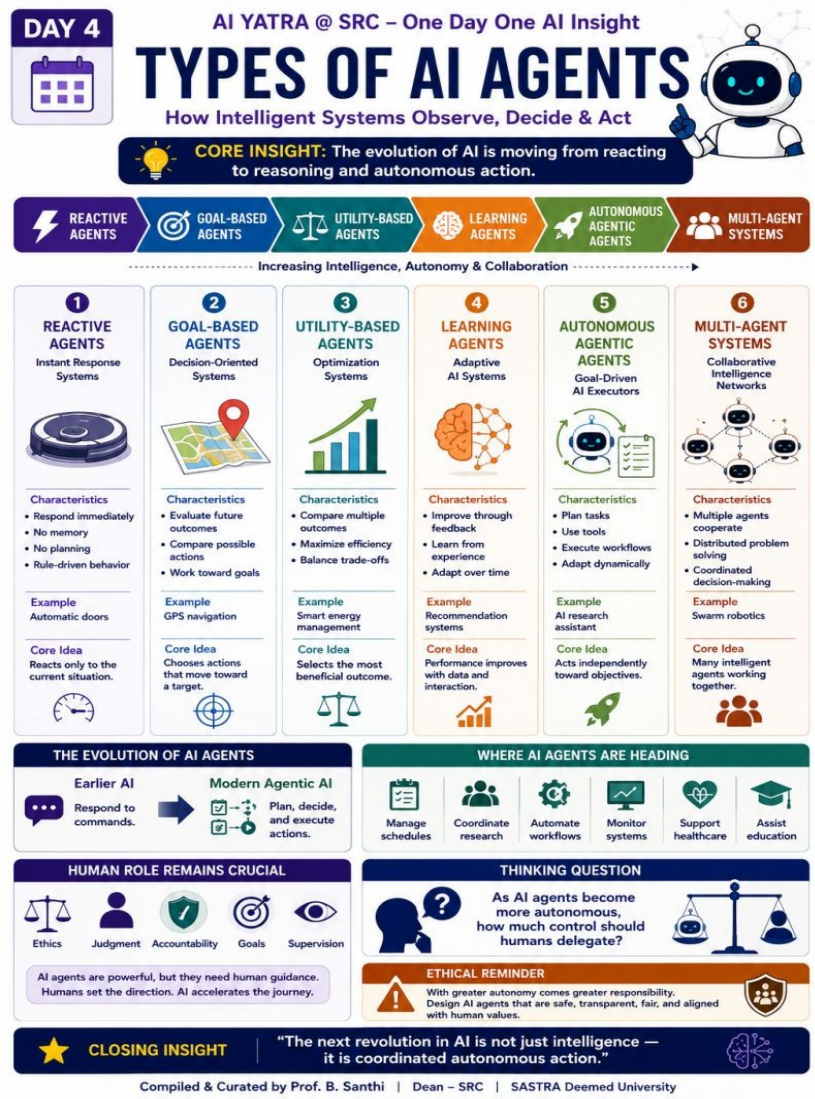
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 3-Prompt Engineering



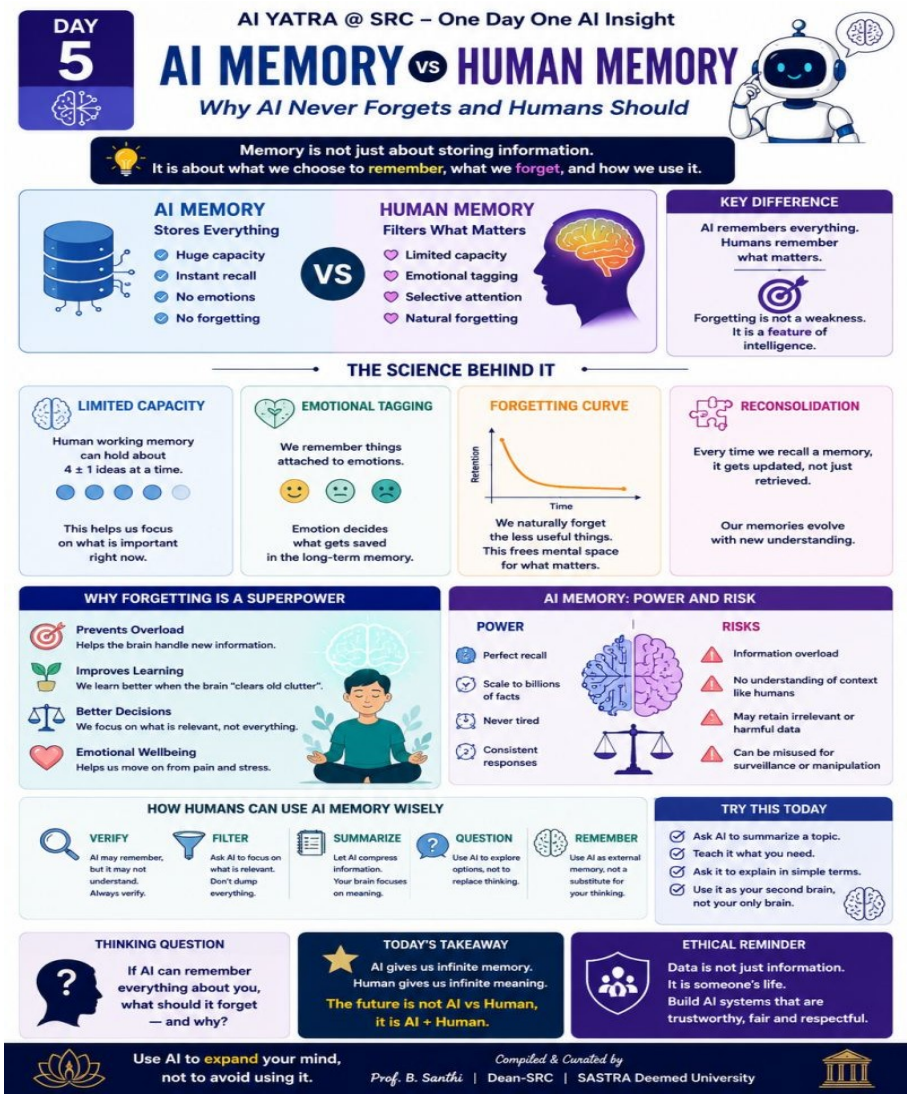
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 4 Types of AI Agents



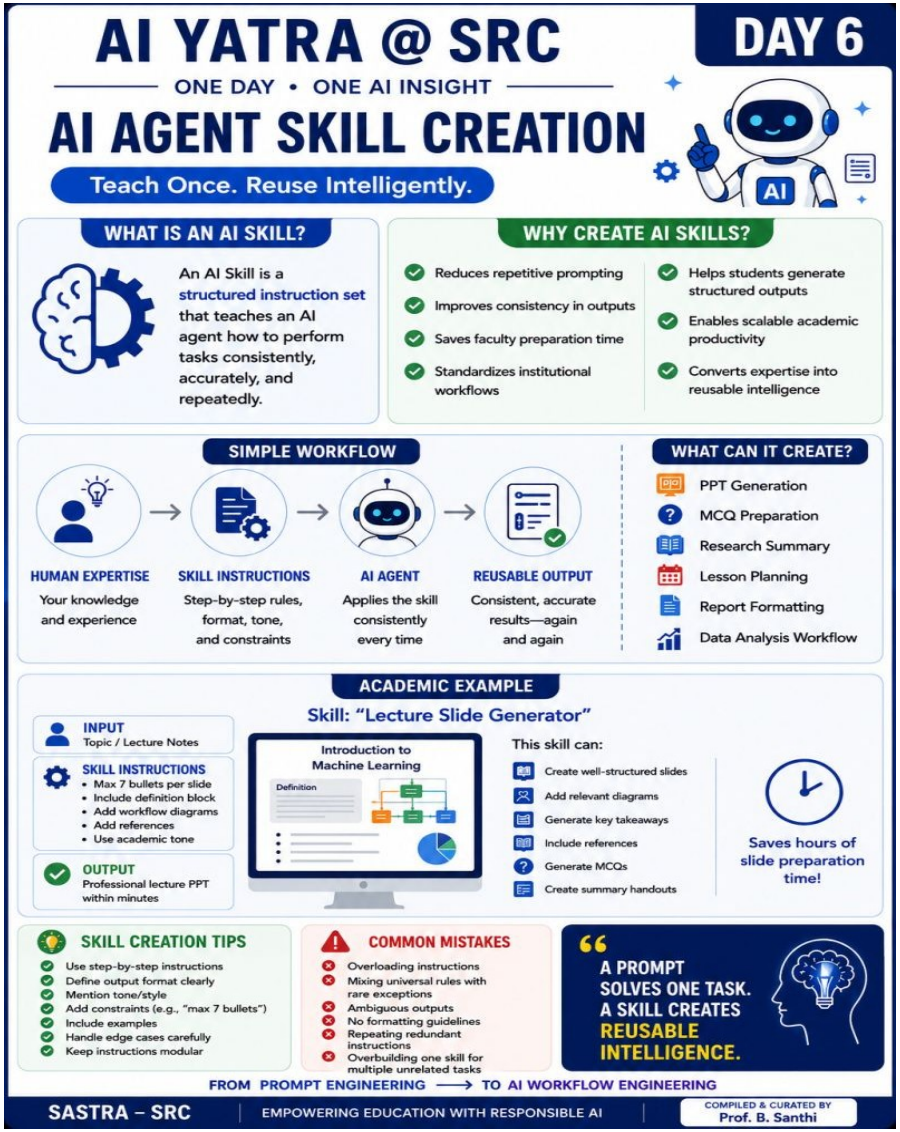
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 5 AI Memory vs Human Memory



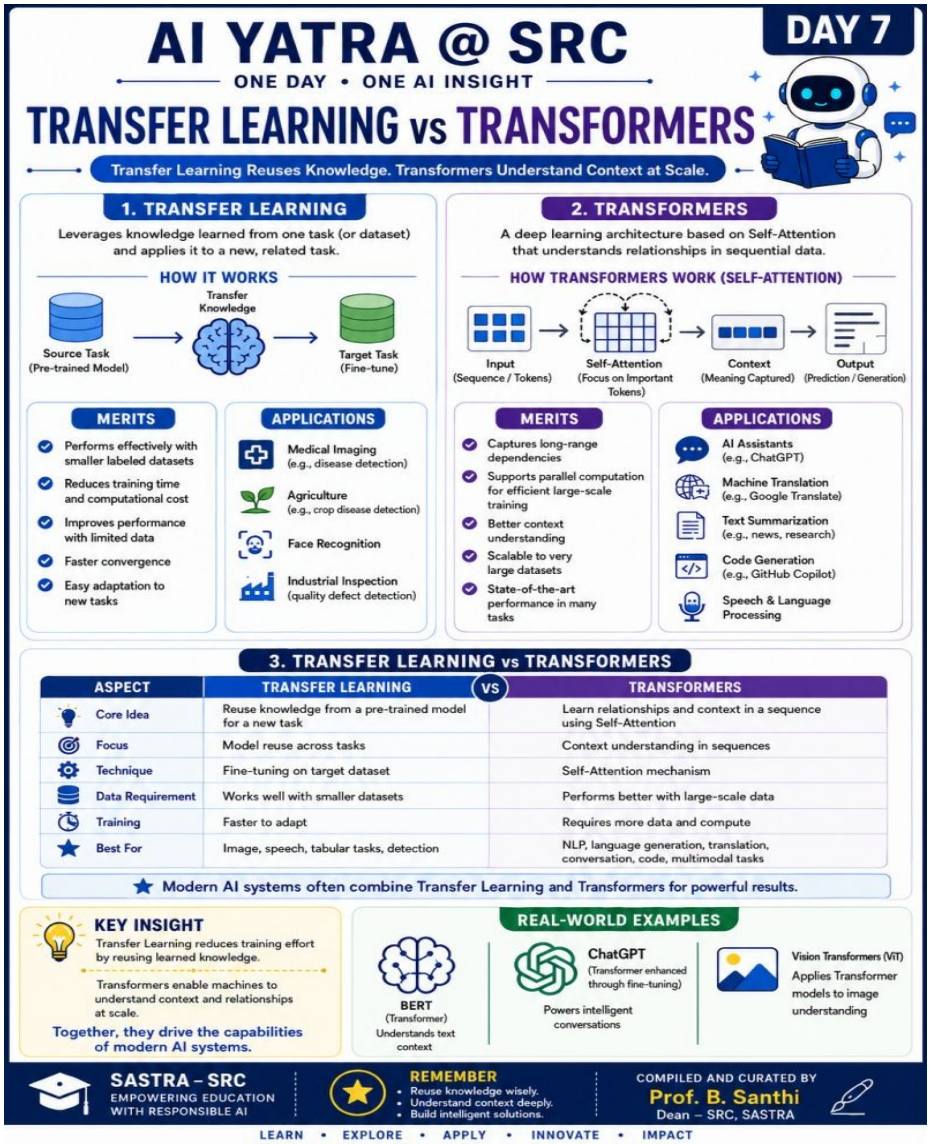
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 6 AI Agent Skill Creation

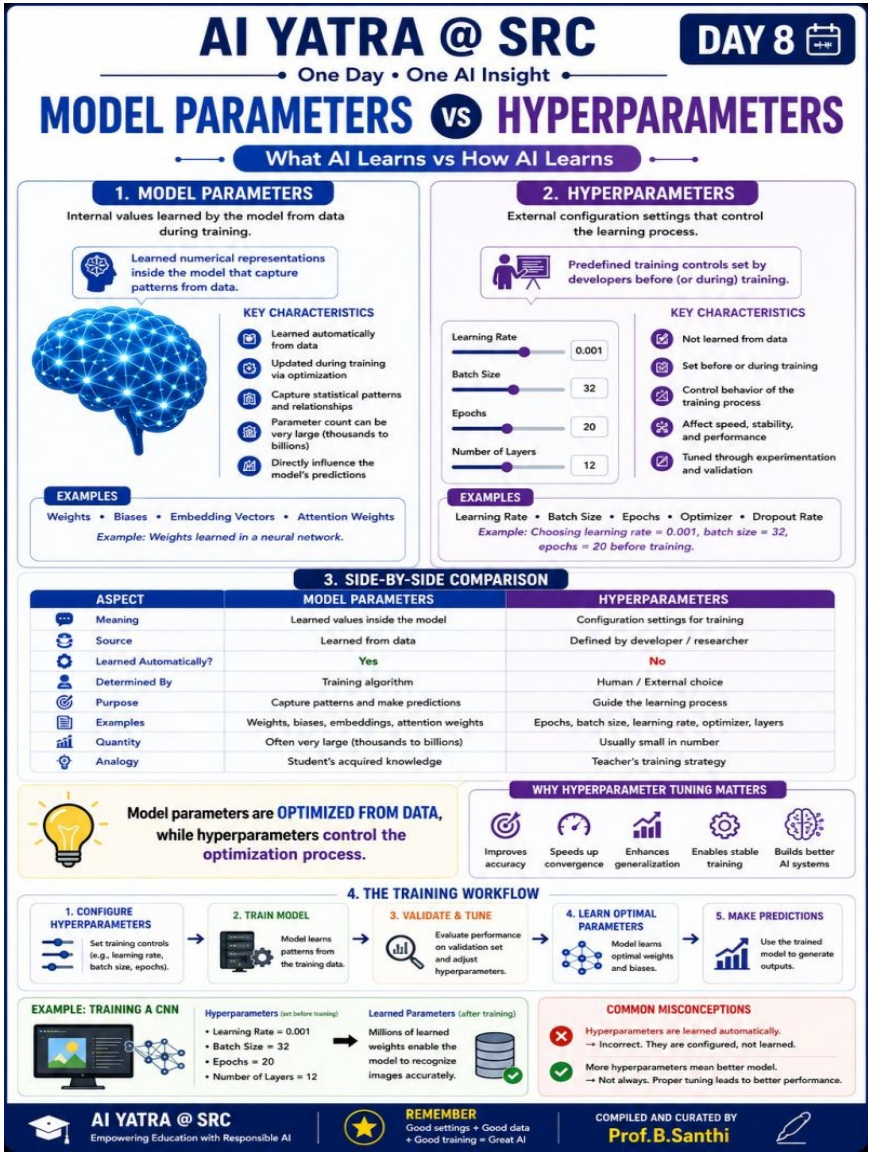


LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 7 Transfer Learning Vs Transformers



Day 8 Model Parameters vs Hyperparameters



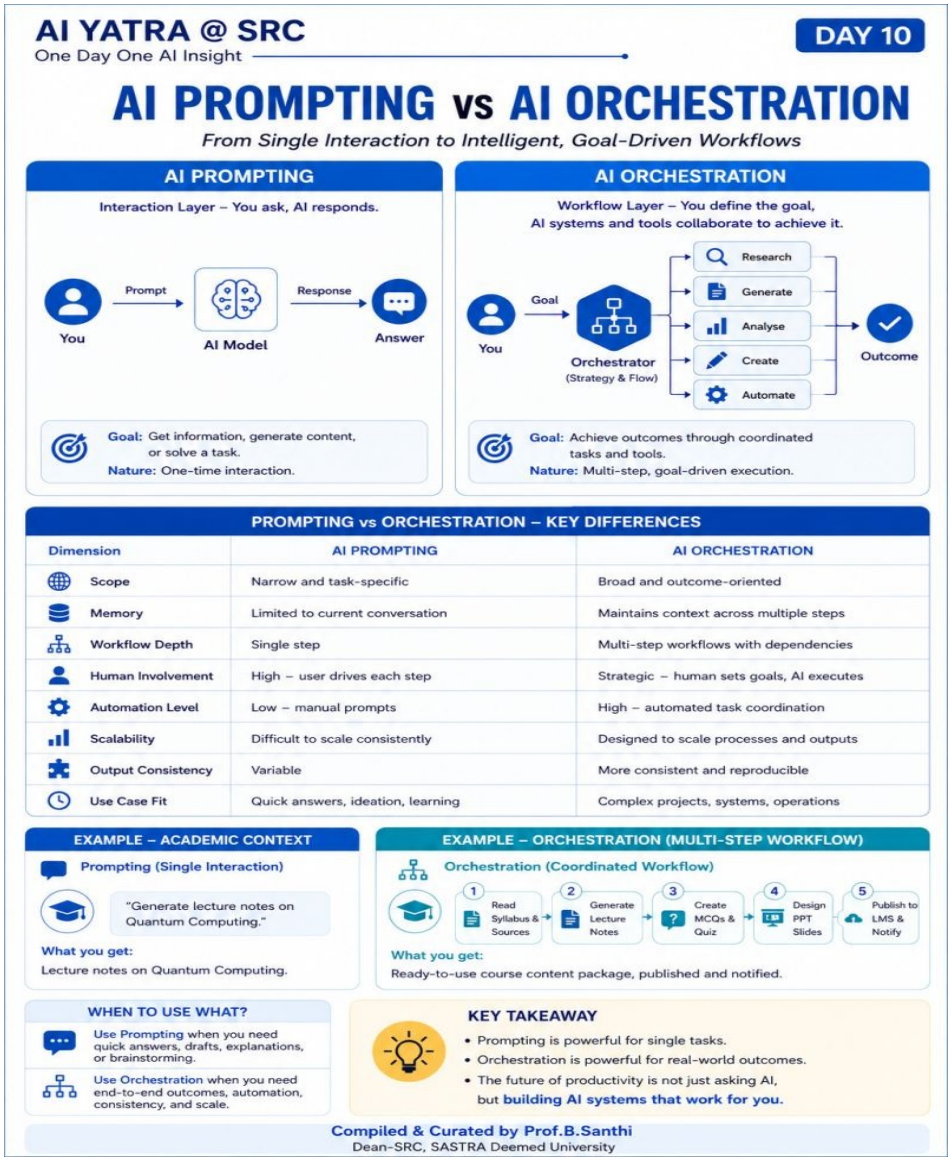
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 9 RAG Architecture



LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 10 AI Prompting Vs AI Orchestration



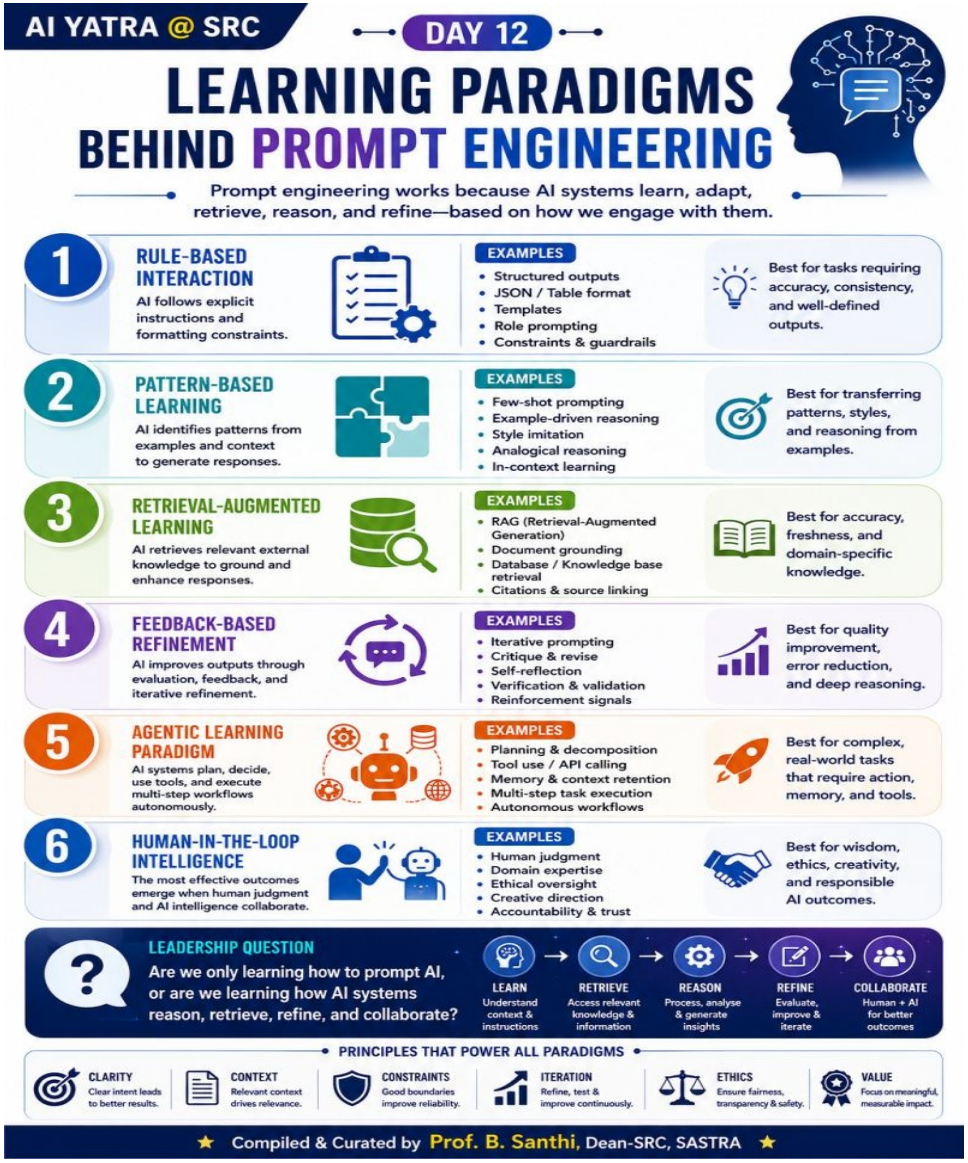
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 11 Productivity to Transformation



LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 12 Learning Paradigms behind Prompt Engineering

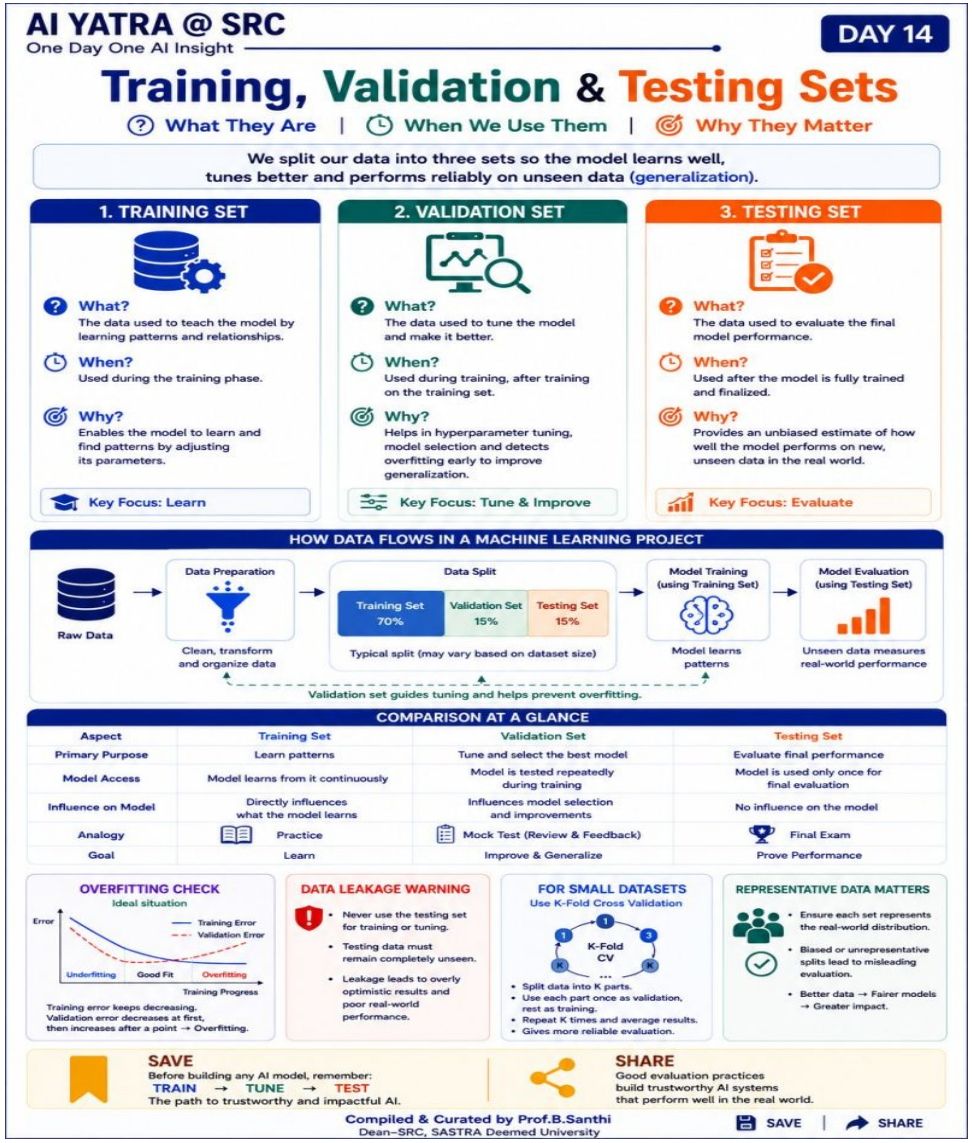


Day 13 Chain-of-Thought (CoT) Prompting



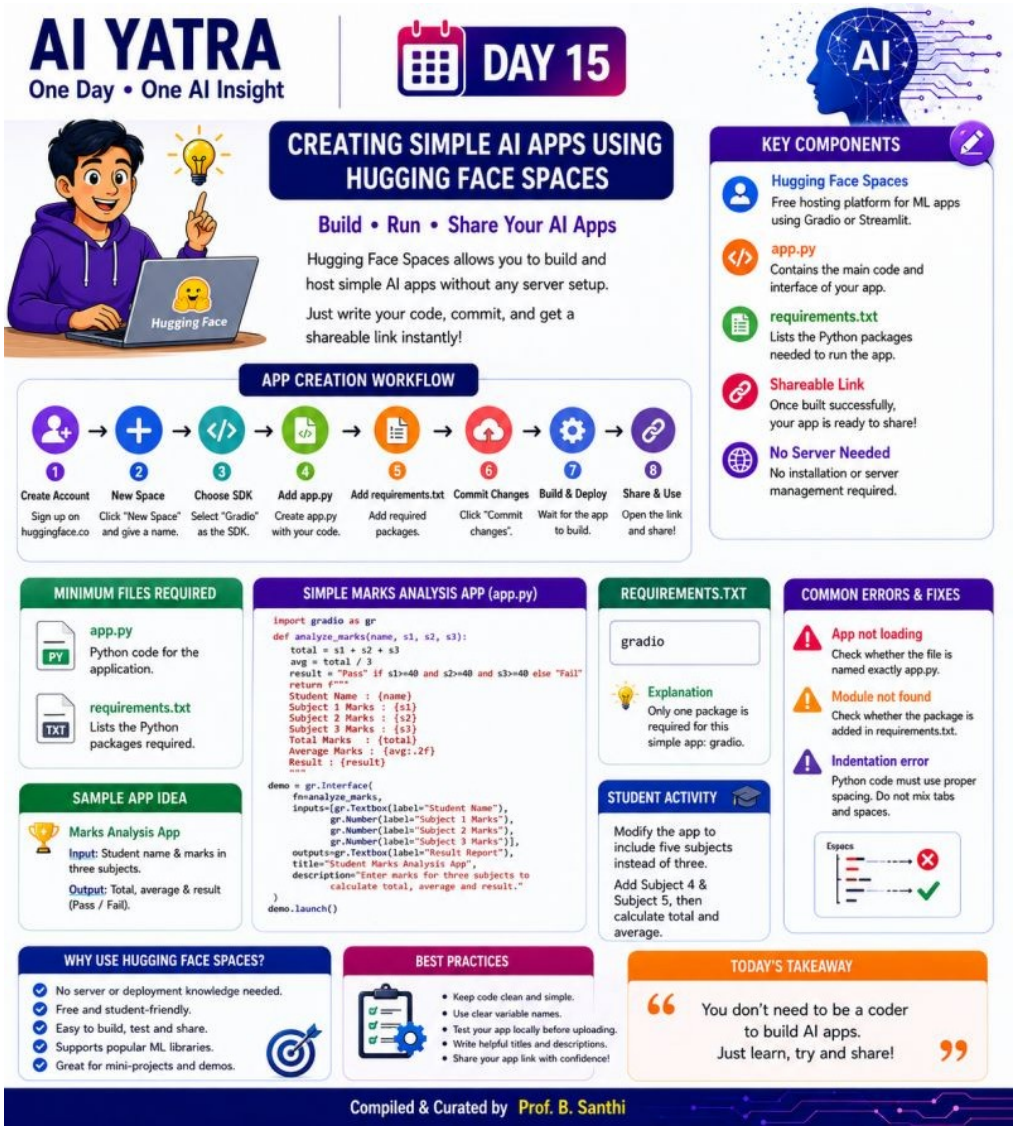
LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 14 Training, Validation & Testing Sets



LEARN TO LEARN – MAGIC (LLM @ SRC)

Day 15 Creating Simple AI Apps using Hugging Spaces



Day 16 Upload-Prompt-Compile-Teach

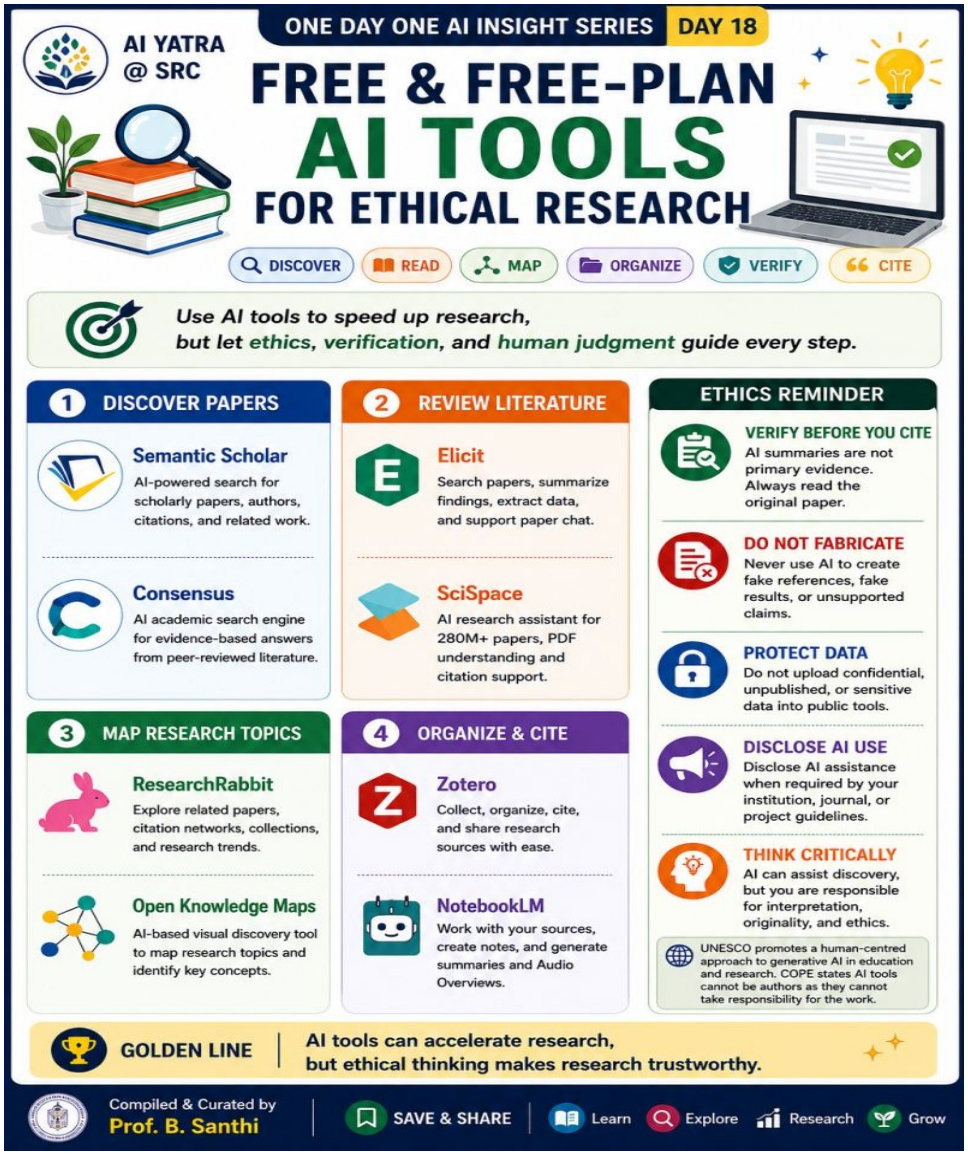


LEARN TO LEARN – MAGIC (LLM @ SRC)

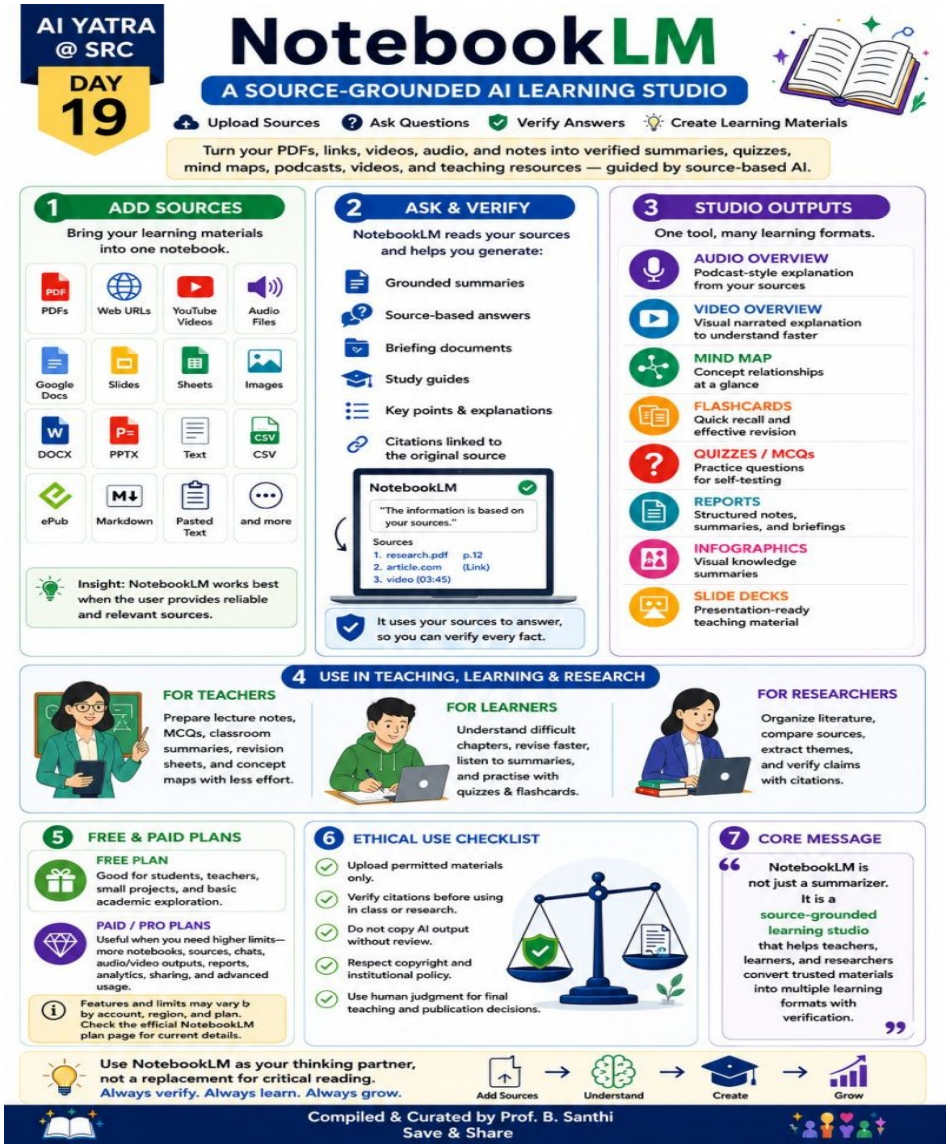
Day 17 Research with AI Tools



Day 18 AI Tools for Ethical Research



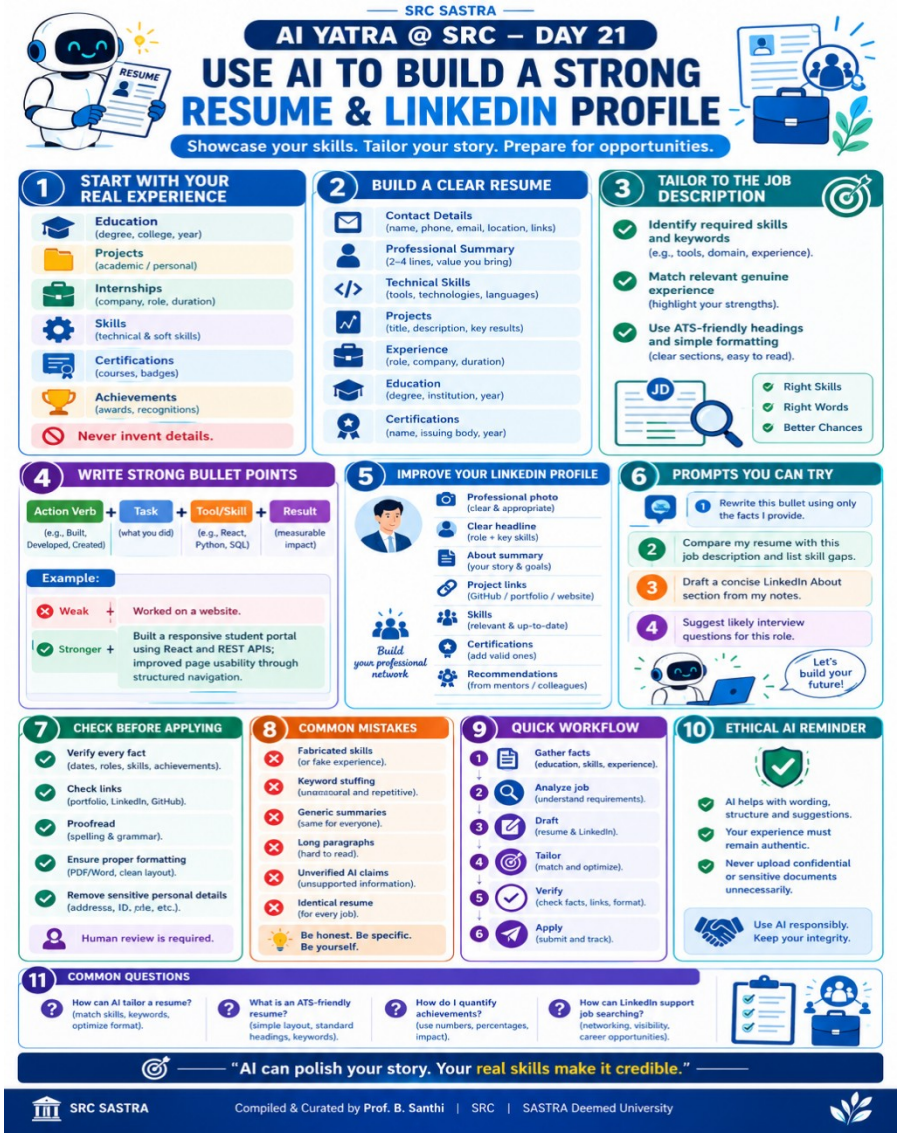
Day 19 Notebook LM



Day 20 Use ChatGPT-For Interview Training



Day 21: Use AI to Build a Strong Resume & LinkedIn Profile.




Thank you