

Indian Institute of Technology, Guwahati

Mehta School Of Data Science And Artificial Intelligence



Generative AI for Industry

Symposium on “GENERATIVE AI FOR ELECTRONICS AND
COMMUNICATION ENGINEERING”

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West's First Data Scientist

Florence Nightingale

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From Wikipedia, the free encyclopedia



"The Lady with the Lamp" redirects here. For the 1951 film, see [The Lady with a Lamp](#). For other uses, see [Florence Nightingale \(disambiguation\)](#).

Florence Nightingale OM RRC DSJ[ⓘ] (/ˈnaɪtŋɡeɪl/; 12 May 1820 – 13 August 1910) was an English [social reformer](#), statistician and the founder of modern [nursing](#). Nightingale came to prominence while serving as a manager and trainer of nurses during the [Crimean War](#), in which she organised care for wounded soldiers at [Constantinople](#).^[4] She significantly reduced death rates by improving hygiene and living standards. Nightingale gave nursing a favourable reputation and became an icon of [Victorian culture](#), especially in the persona of "The Lady with the Lamp" making rounds of wounded soldiers at night.^{[5][6]}

Recent commentators have asserted that Nightingale's Crimean War achievements were exaggerated by the media at the time, but critics agree on the importance of her later work in professionalising nursing roles for women.^[7] In 1860, she laid the foundation of professional nursing with the establishment of [her nursing school](#) at [St Thomas' Hospital](#) in London. It was the first secular nursing school in the world and is now part of [King's College London](#).^[8] In recognition of her pioneering work in nursing, the [Nightingale Pledge](#) taken by new nurses, and the [Florence Nightingale Medal](#), the highest international distinction a nurse can achieve, were named in her honour, and the annual [International Nurses Day](#) is celebrated on her birthday. Her social reforms included improving healthcare for all sections of British society, advocating better hunger relief in India, helping to [abolish prostitution laws](#) that were harsh for women, and expanding the acceptable forms of female participation in the workforce.

Nightingale was a pioneer in statistics; she represented her analysis in graphical forms to ease drawing conclusions and actionables from data. She is famous for usage of the [polar area diagram](#), also called the Nightingale rose diagram, equivalent to a modern circular [histogram](#). This diagram is still regularly used in [data visualisation](#).

Nightingale was a prodigious and versatile writer. In her lifetime, much of her published work was concerned with spreading medical knowledge. Some of her tracts were written in [simple English](#) so that they could easily be understood by those with poor literary skills. She was also a pioneer in data visualisation with the use of [infographics](#), using graphical presentations of statistical data in an effective way.^[7] Much of her writing, including her extensive work on religion and [mysticism](#), has only been published posthumously.

Florence Nightingale

OM RRC DSJ[ⓘ]



Nightingale, c. 1860

Born	12 May 1820 Florence, Grand Duchy of Tuscany
Died	13 August 1910 (aged 90) Mayfair, London, England
Nationality	British
Known for	Pioneering modern nursing Polar area diagram
Awards	Royal Red Cross (1883) Lady of Grace of the Order of St John (LGStJ) (1904) Order of Merit (1907)

Reality

People also ask :

When did Harvard became coed?

In 1946, Harvard's classes became co-ed, though Harvard faculty members were responsible for the academic training of Radcliffe students, and played no part in their social or extracurricular involvements. Then-Radcliffe president Mary I. 27 May 2019



The Harvard Crimson

<https://www.thecrimson.com> › article › harvard-radclif...

[When Harvard Met Radcliffe | News](#)

People also ask :

Is Oxford University coed?

Most of Oxford's graduate colleges were founded as coeducational establishments in the 20th century, with the exception of St Antony's, which was founded as a men's college in 1950 and began to accept women only in 1962.



Wikipedia

<https://en.wikipedia.org> › wiki › University_of_Oxford

[University of Oxford - Wikipedia](#)

Search for: [Is Oxford University coed?](#)

1969

November 1968

The Yale Corporation secretly votes in favor of full coeducation, or accepting women into Yale College, in the fall of 1969. On November 4th, Coeducation week commences. 750 women from 22 colleges arrive on campus.



Yale University

<https://celebratewomen.yale.edu> › history › timeline-wo...

[A Timeline of Women at Yale - 50WomenAtYale150 |](#)

Women were first admitted in 1947, and the university was racially integrated in 1958. Notable alumni include physicist John V. Atanasoff (a developer of the electronic digital computer), Olympic swimmer Tracy Caulkins, and Nobel laureate biochemist Marshall Nirenberg.



Britannica

<https://www.britannica.com> › ... › Education

[University of Florida | Gainesville, Gators, SEC - Britannica](#)

Data Science in Ancient India



Wikipedia

<https://en.wikipedia.org/wiki/Panjika>

Panjika

The **Panjika** is the Hindu astronomical almanac, published in Assamese, Bengali, Maithili, Nepali and Odia languages and colloquially known as Panji (IAST: ...



American Institute of Vedic Studies

<https://www.vedanet.com/nakshatras-and-upanakshat...>

Nakshatras and Upanakshatras

The Nakshatras are a **twenty-seven or twenty-eight division of the zodiac based upon the Moon**, which takes 27-28 days to go around the zodiac (to be more ...

Data Science in Ancient India

- Panjika
 - Patterns and Astronomical Calculations
 - Shubh Days and a-Shubh Days
 - Birth Characteristics and their influence in other years.
 - Defines Life Cycle.
- Nakshatra
 - Human Nature
 - Human Drawbacks
 - Human Compatibility

Corporate Training
Corporate Activities
Corporate Interview

Data Science in Ancient India

- Years of Observations by Group of People
 - Nalanda
 - Vikramashila
 - etc
- Years of Validation
- Knowledge for society
- Documentation
 - Books
 - Transferable Contents for People

Vaccination In Ancient India



Agenda

- AI in Biometrics
- What is Generative AI?
- Fashion
- Chip Fabrication
- Materials and MicroStrip Antenna
- Language Correction
- Style in Language
- Voice Generation
- Limitations of Generative AI
- Drawbacks of Generative AI in Industry

AI in Biometrics (Finger Scanner)

- Is it a real AI application ?



Dr Chiran

AI in Biometrics (Finger Scanner)

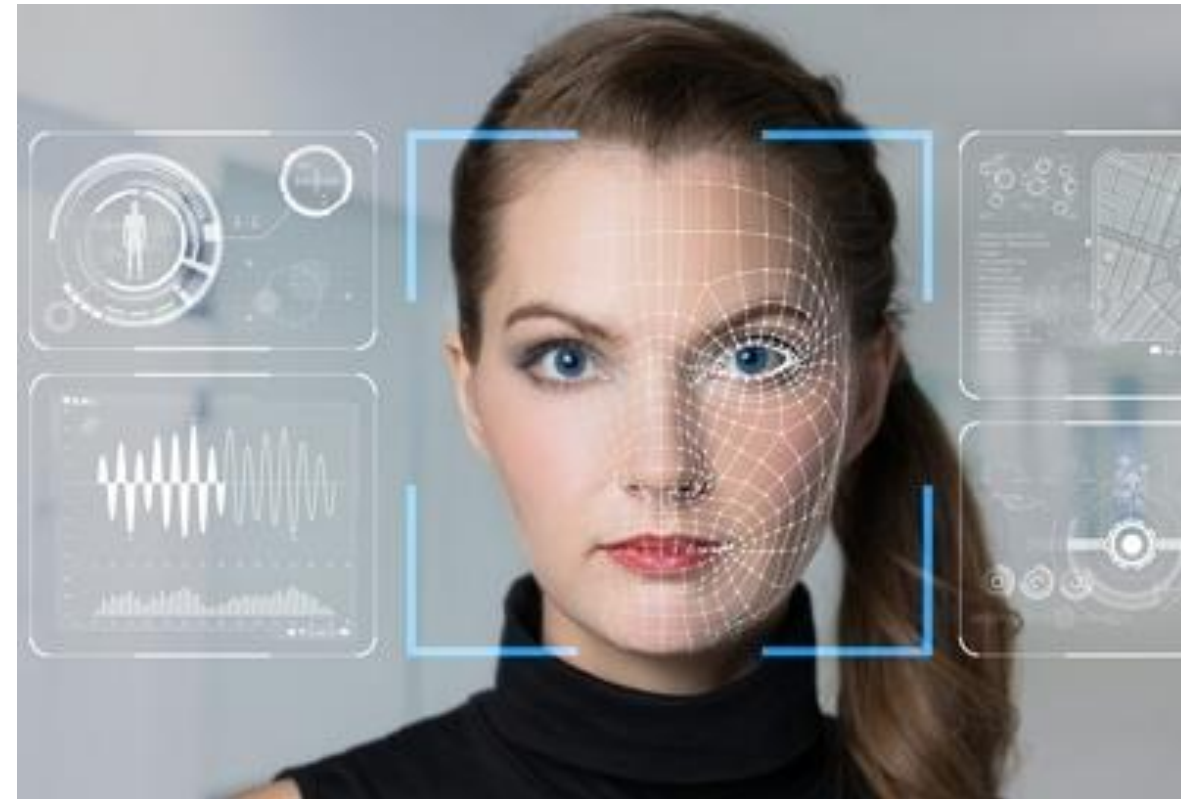
- Takes Multiple Scans
- Chops the Scan into multiple segments
- Saves the hash value of segments
- Nearest neighbor search during authentication.



Dr Chiranjit

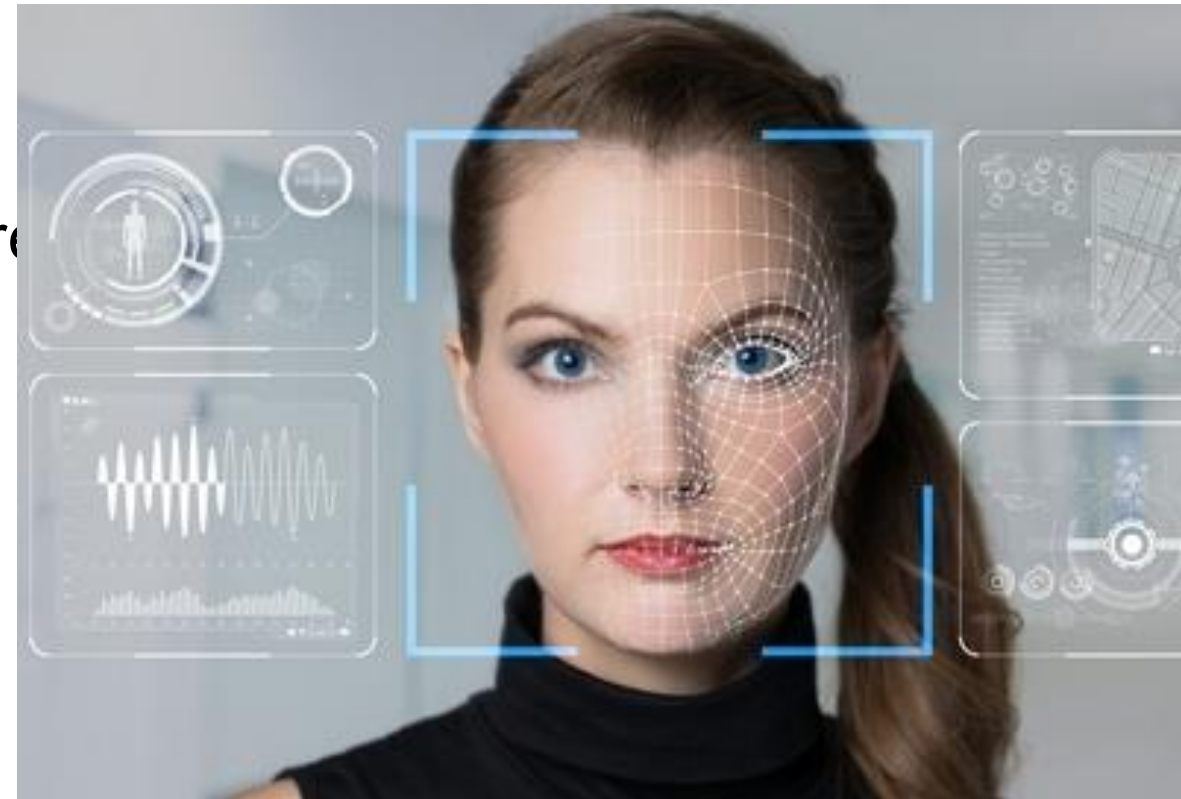
AI in Biometrics (Face Recognition)

- Apple has the best facial recognition system.

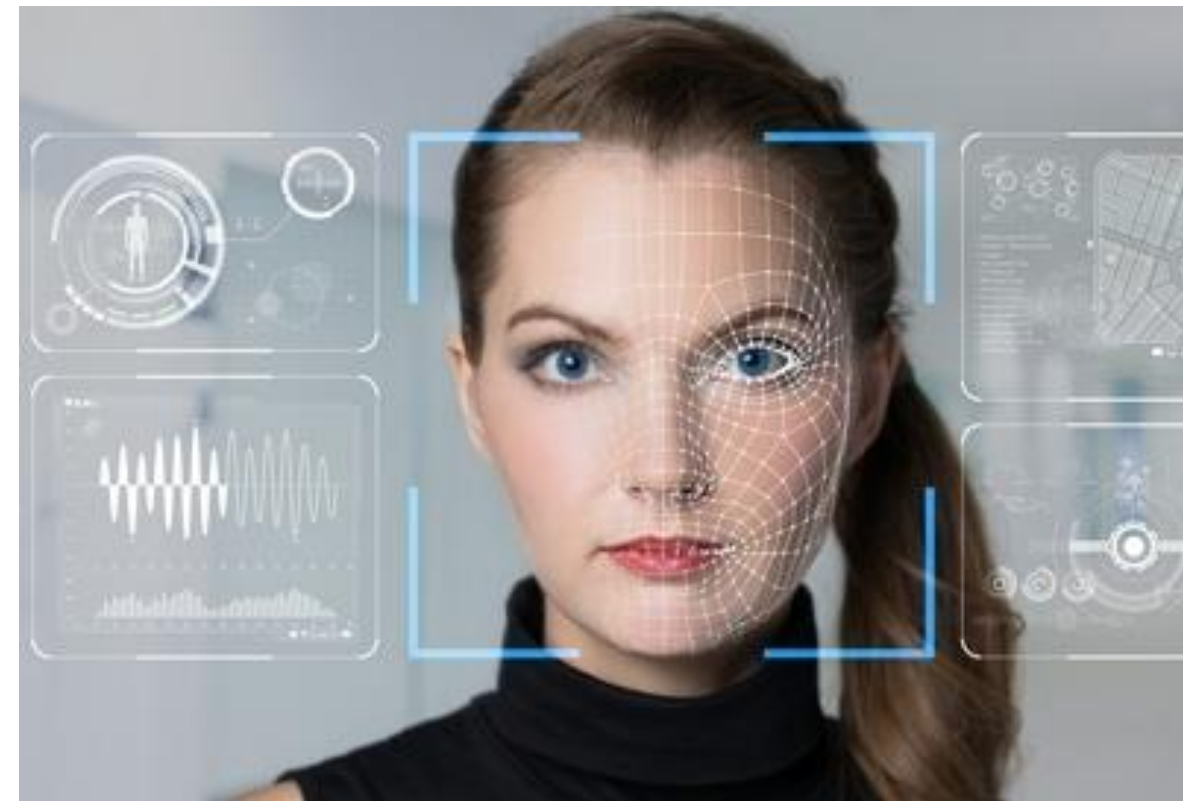


AI in Biometrics (Face Recognition)

- Apple has the best facial recognition system.
- Mostly, only Identical Twins have broken the system.
- Other cases exist – may be a hardware failure.
- Even a masked person can be identified.

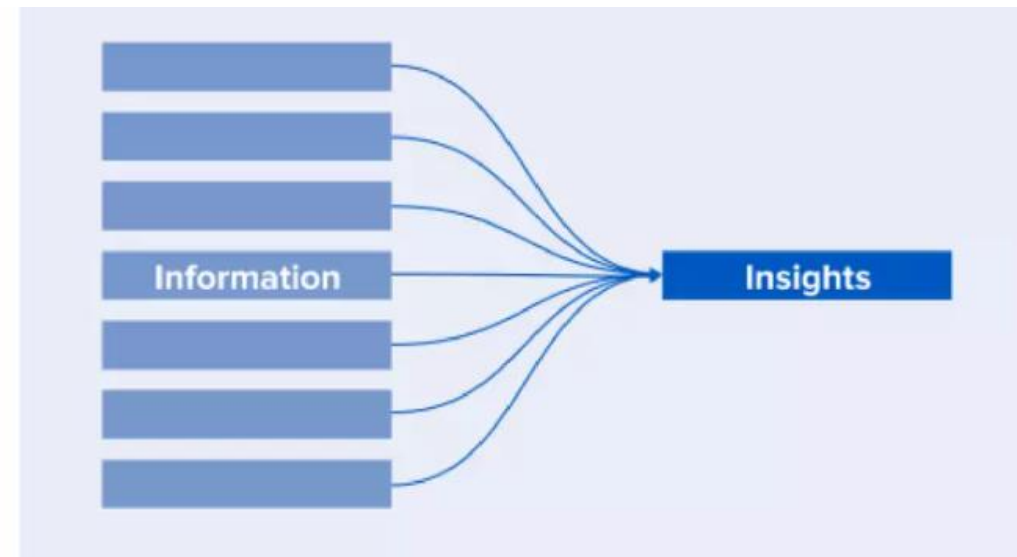
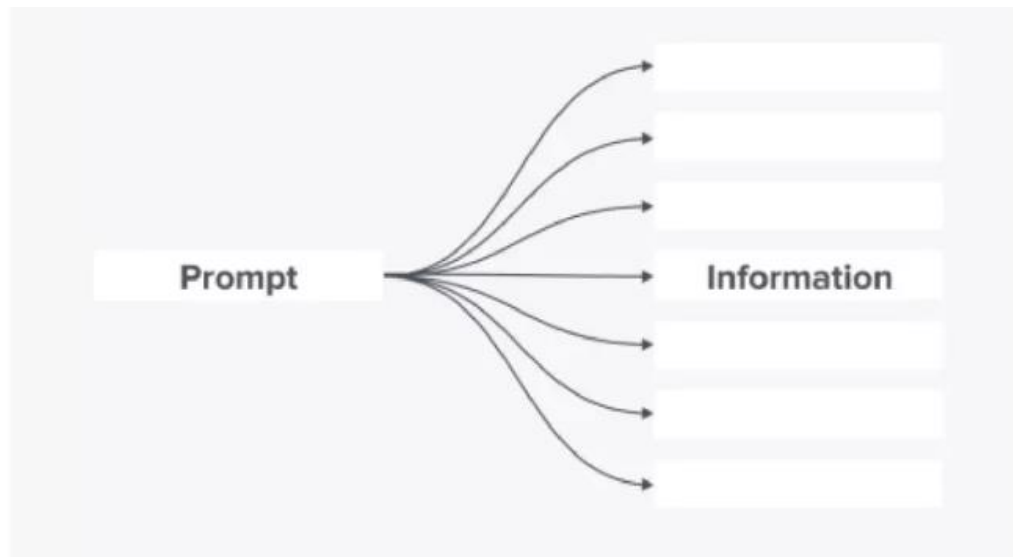


AI in Biometrics (Face Recognition)



What is Generative AI ?

- Information to Insight
- Prompt (Insight) to Information
- KISS (Keep It Simple and Stupid)



Fashion Technology

- Generating multiple clothes for a model.
- Sometimes, generating the models as well.



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Fashion Technology

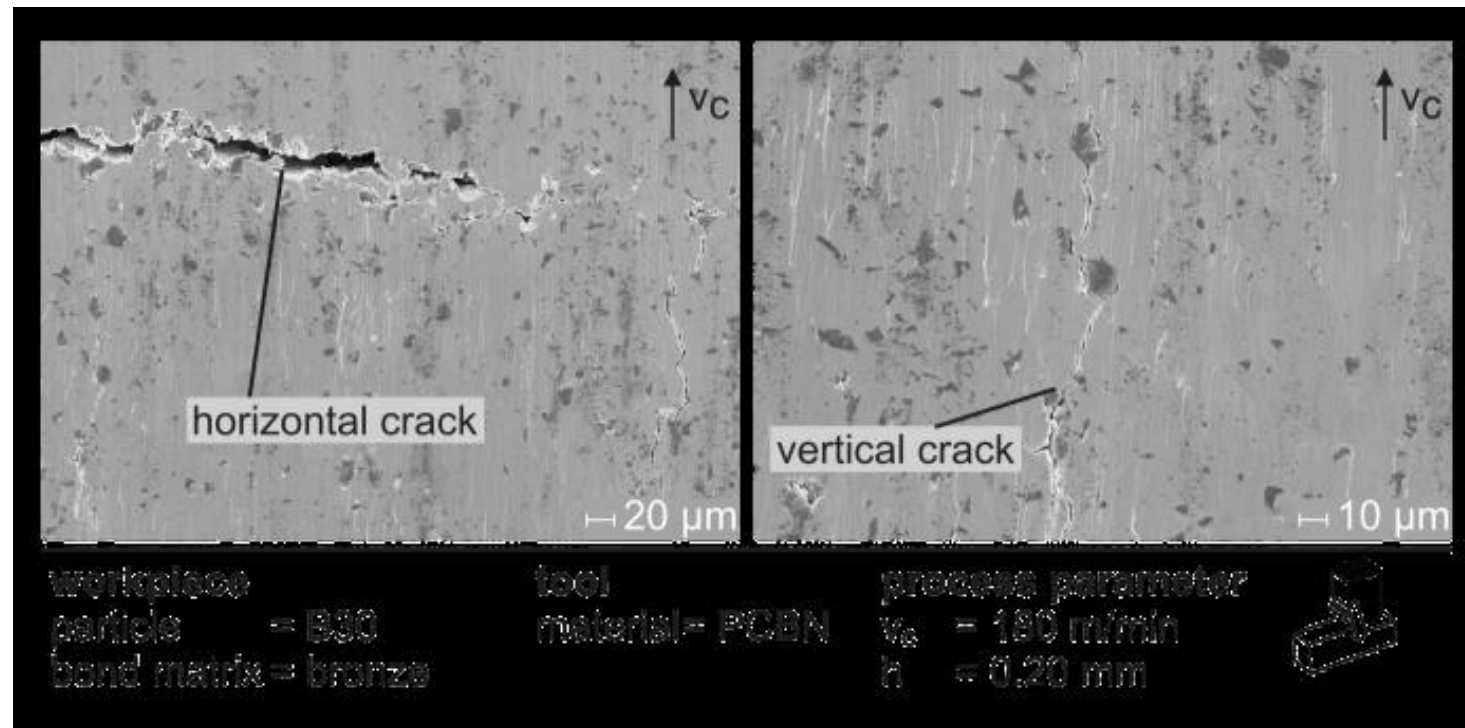
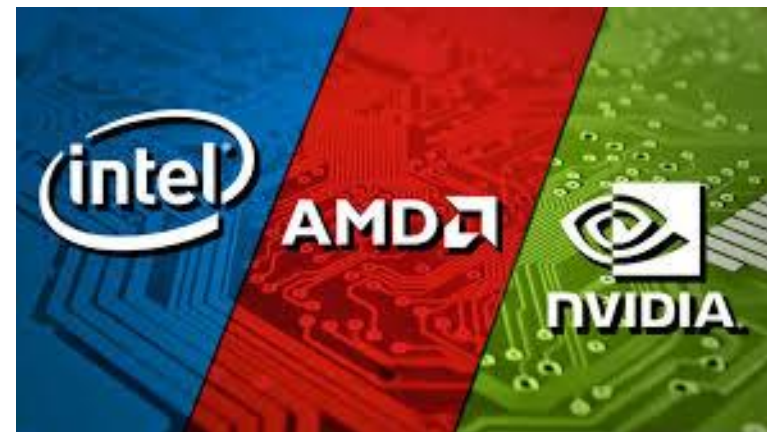
- Driven by Business
- Driven by Solutions for people and society
- No Bazooka to kill a mosquito



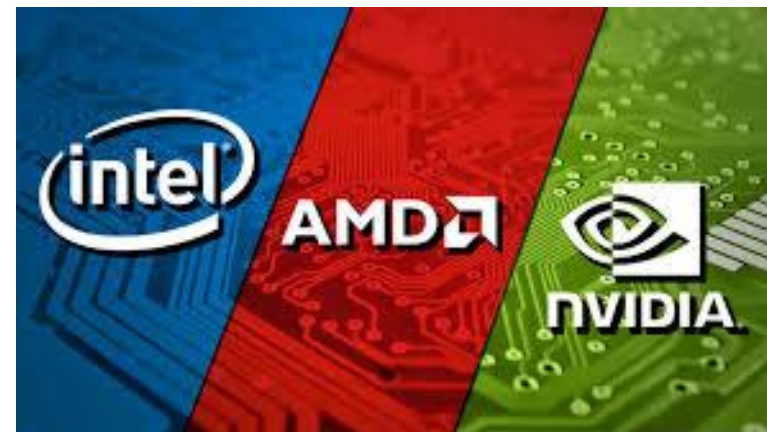
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Crack in Chip Fabrication

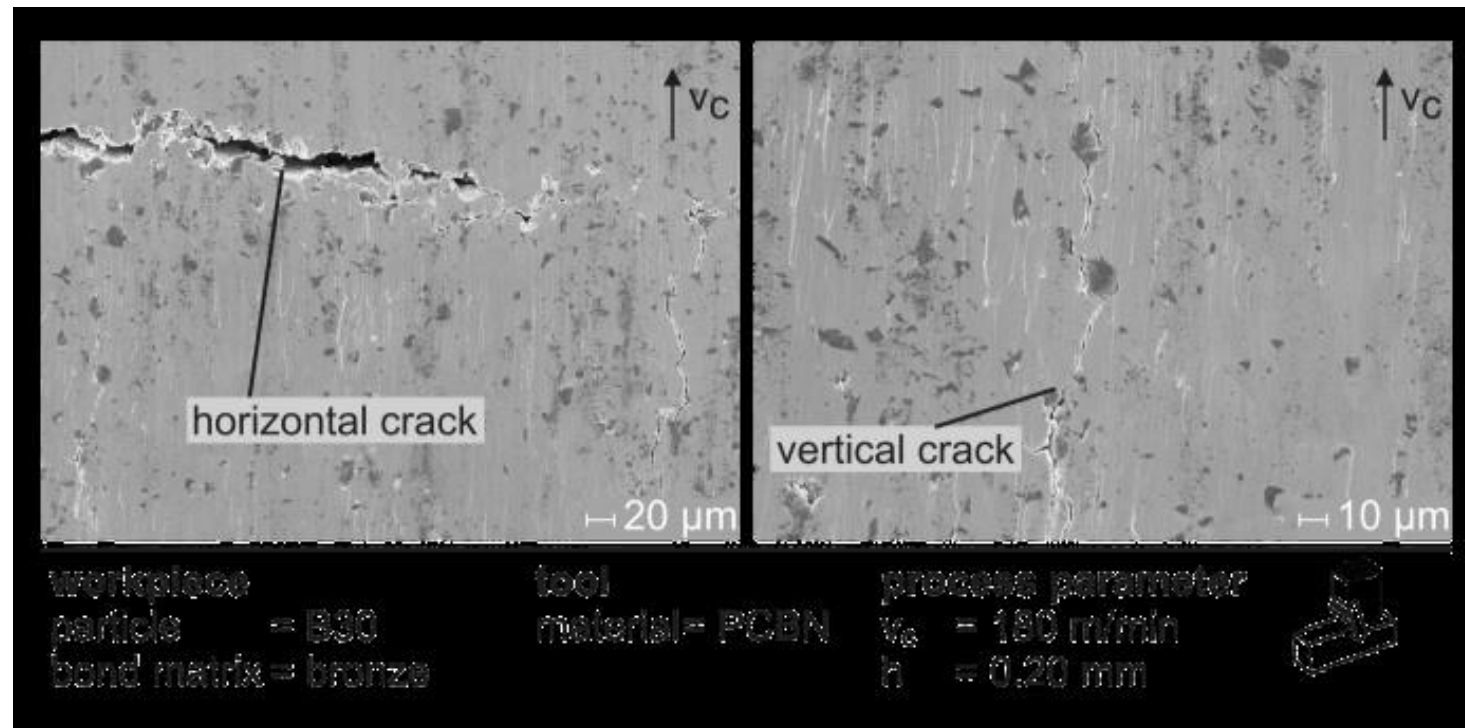
- Whole Chip fails
- Identification leads to saving billions of dollars



Crack in Chip Fabrication

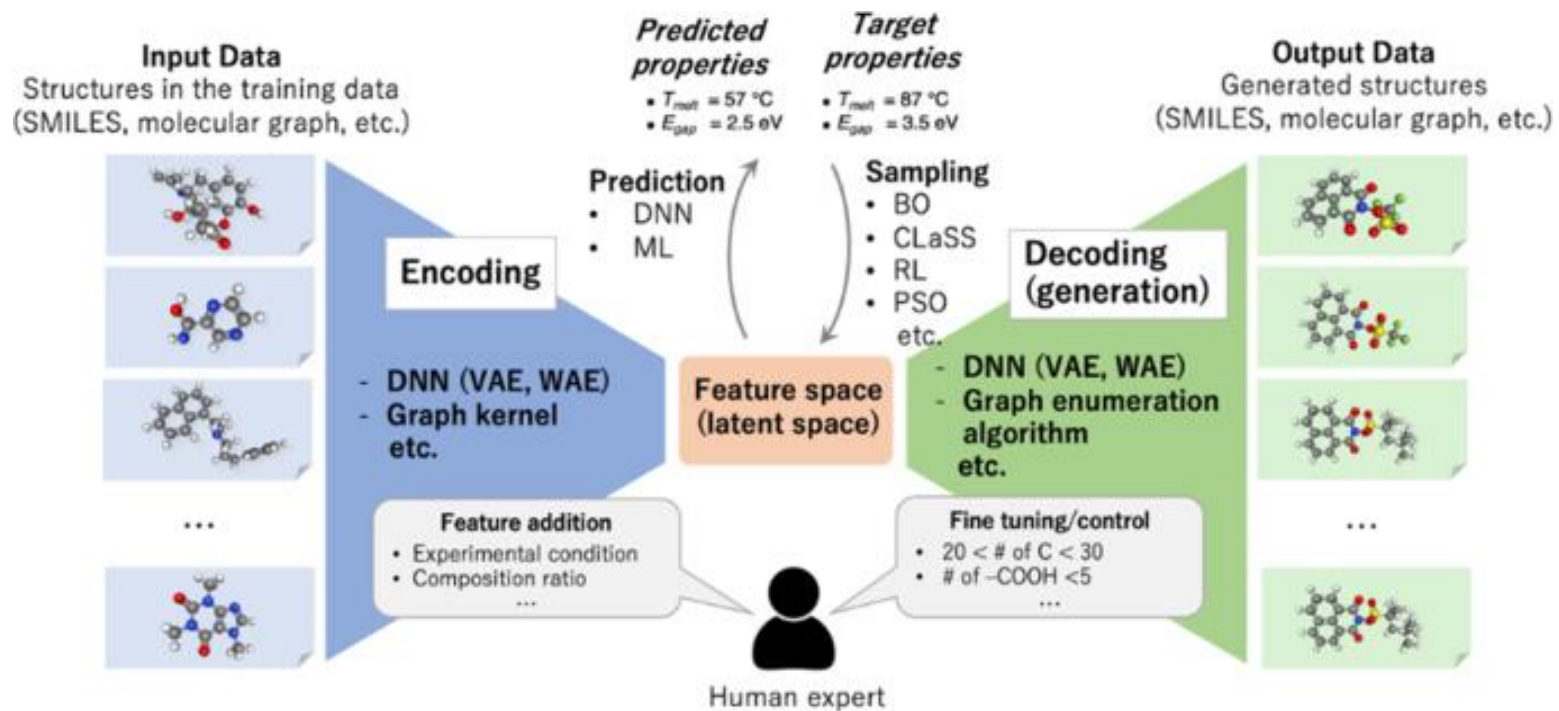


- Will it be possible to collect data before fabrication?
- Will it be possible to define the problem before the fabrication?



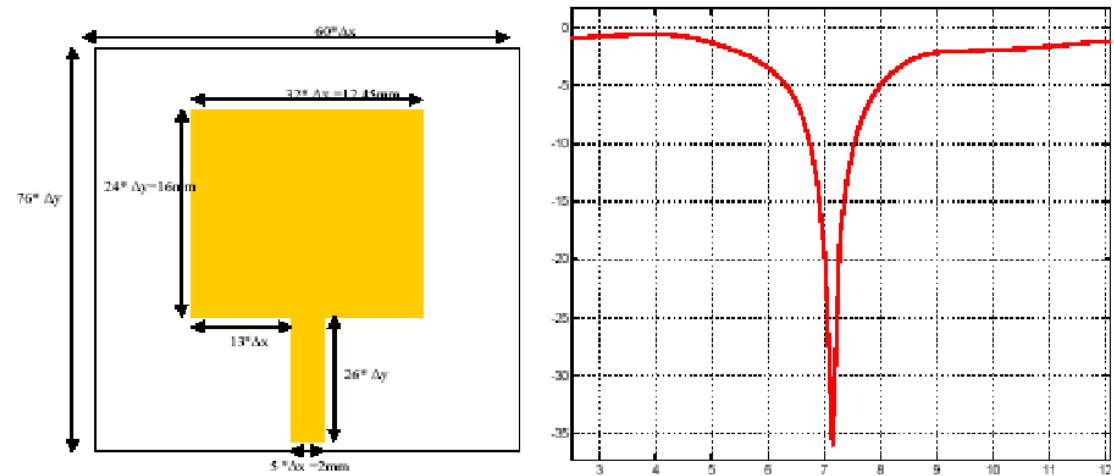
Materials Discovery

- Materials for Chip fabrication.
- Materials for Microstrip Antenna
- Materials for Microwave materials like receiver.

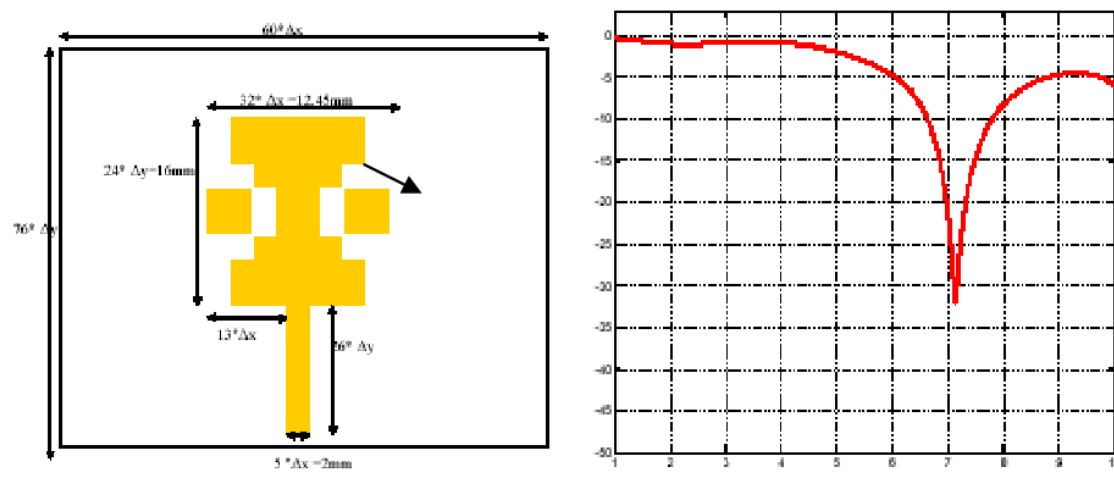


MicroStrip Antenna

- Manually vs Automated (Exhaustive)

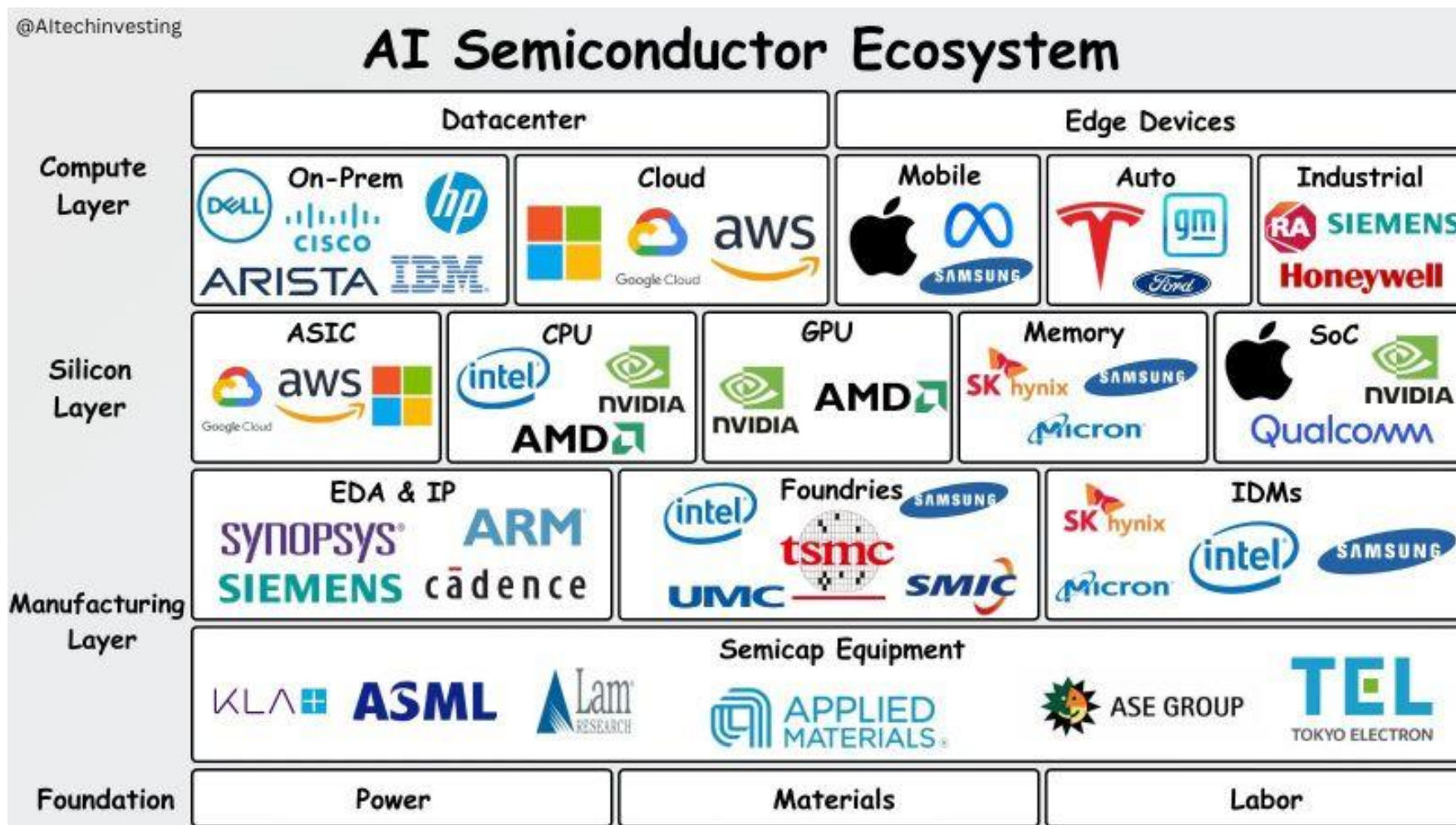


(a) (b)
Fig. 3. (a) Rectangular patch, (b) return loss.

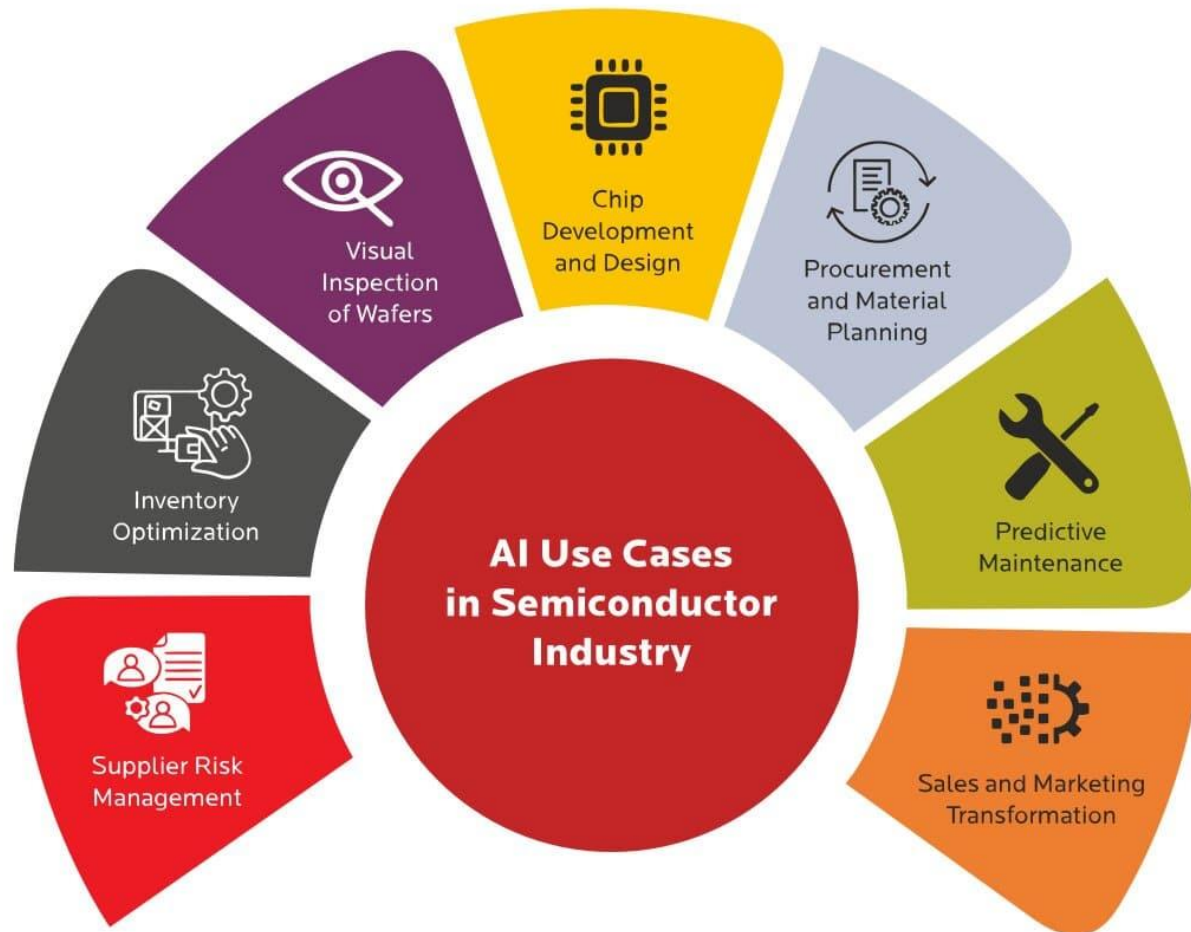


(a) (b)
Fig. 4. (a) Optimized patch (b) return loss.

Scope for Semiconductor Industry in Assam



Scope for Semiconductor Industry in Assam



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Language Correction

- Prompt (Insight) to Information
- Replaces
- Prompt (Insight) to (Permissible/Feasible) Information

Apostrophe Usage

- It is my **friends** house in England.
- It is my **friend's** house in England.

Missing Comma

- Alan came to my house and Jim joined him.
- Alan came to my house, and Jim joined him.

Mixing up similar words

- The book has a good **affect** on my mood.
- The book has a good **effect** on my mood.

Pronoun Disagreement

- Every girl must bring **their** books to school.
- Every girl must bring **her** books to school.

Comparison

- She is **more taller**.
- She is **taller**.

Prepositions

- I went to church **at** Sunday.
- I went to church **on** Sunday.

Style in Language

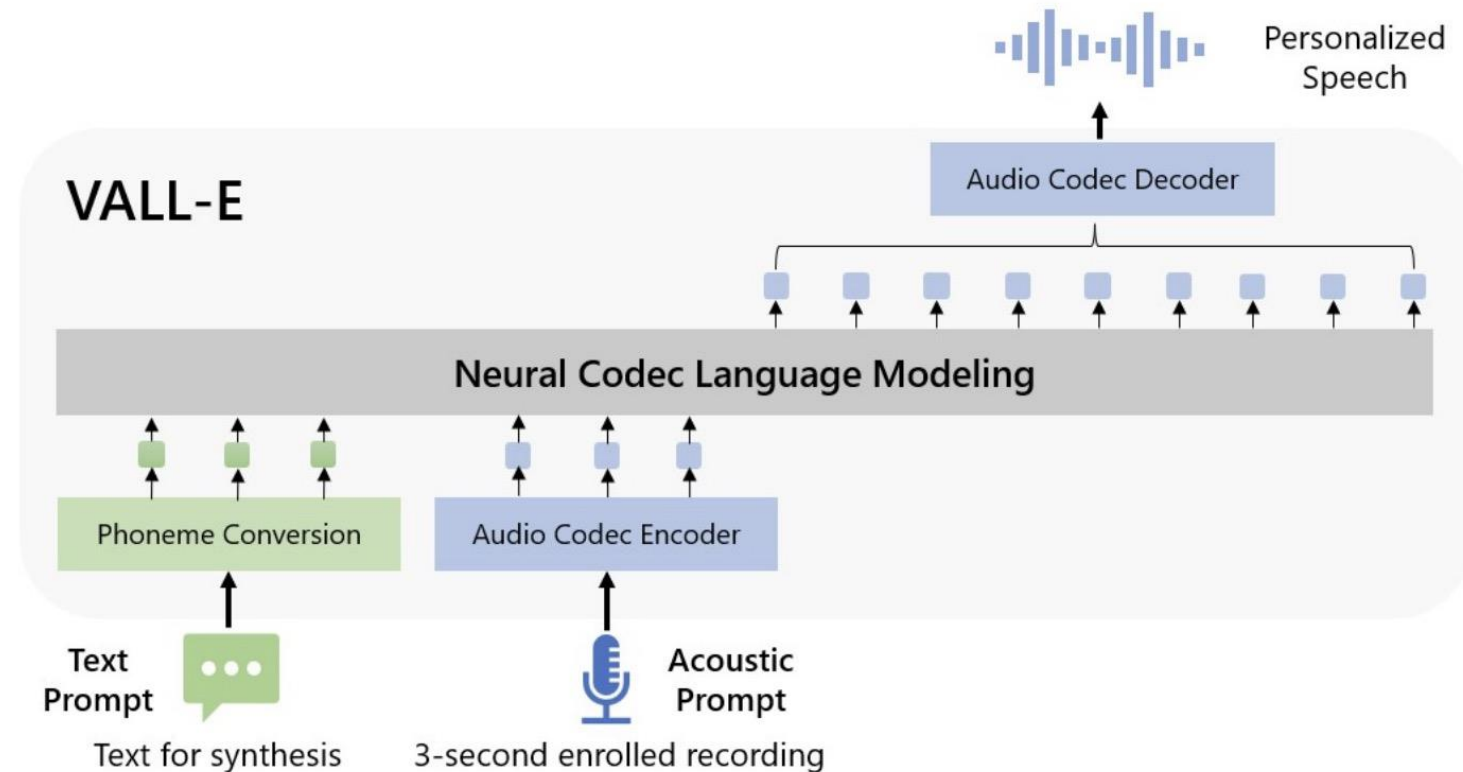
- Can define the story, but no writing skills, but still can write like Rabindranath Tagore or William Shakespeare.



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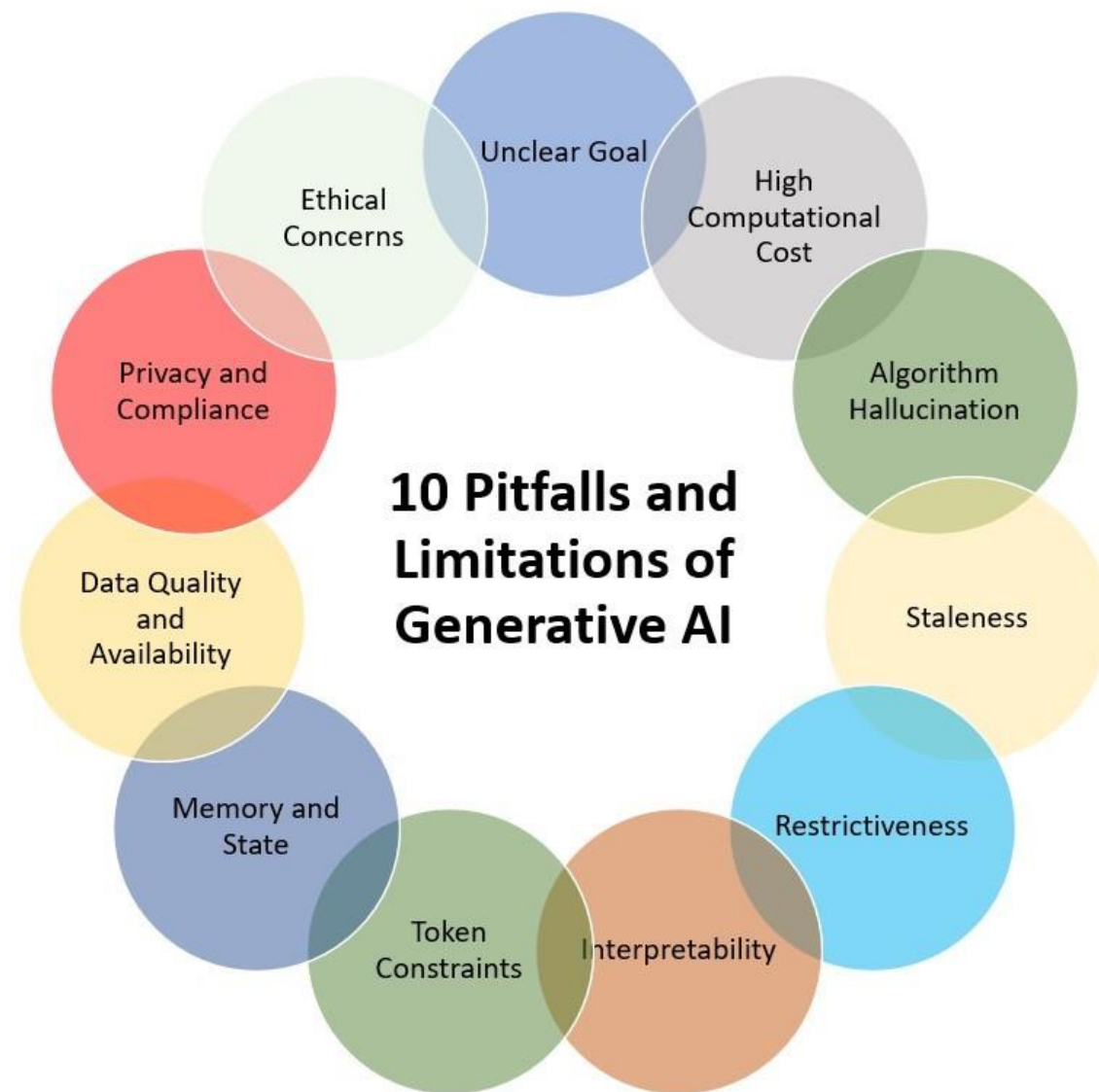
Voice Generation

- Indian Railways
- Flow was discrete but valuable
- Present improvements are more focused on naturalization, style, and audible aesthetics.



Limitations of Generative AI

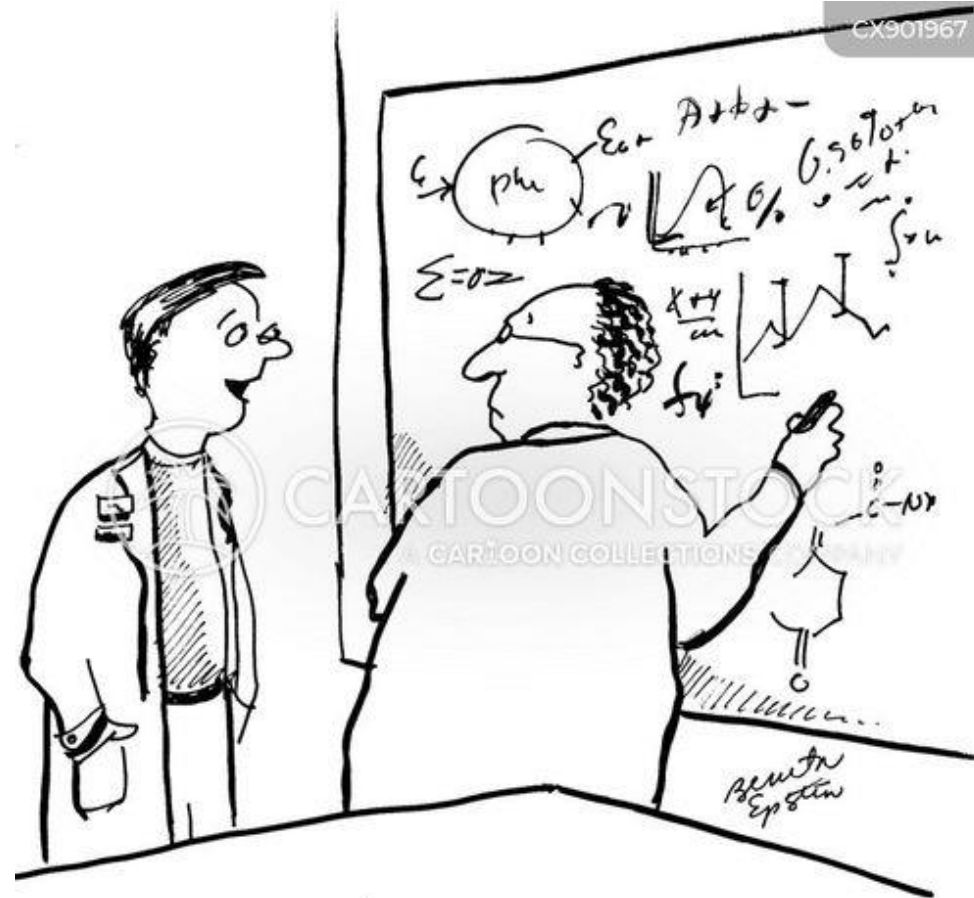
- Specific Knowledge or Deterministic Information. Like what was the profit of Amazon.com last year.
- Feelings and Sentiment Creation.
- Food, Taste, and Recipe Prediction.
- Understanding (Stammering) Voice Recognition
- Will it rain in Hyderabad?
- Etc.



Drawbacks of Generative AI in Industry

- Lack of Consistency (Hallucination): Not deviating from reality
- Bias: towards a particular community or an event
- Interpretability: lacks and requires attention
- Real-Time Knowledge: No updates of facts.
- Memory: no efficient memory to remember important details of conversation over a long period of time.

Your Role



“You’ve just proven that your job doesn’t exist.”

THANK YOU FOR LISTENING.

QUESTIONS!