

Episode 48

Aanay Vala Kal

Let's Go Onwards...Together

Research and script: Dr Anurag Sharma
Concept and Coordination : Dr. B.K. Tyagi

Introduction

Anchor: Namaskar Here we are again with another interesting episode concerning Artificial Intelligence. We usually focus on the potential of AI for example AI did this or AI did that. We also talk about AI-enabled machines or robots doing this or that. Yet are we aware just how far India has come in the field of Artificial intelligence? Do we know how far India has progressed in developing this technology that is being hailed as the future of human civilization? It involves a few surprises, it encompasses a little anxiety and yes, also represents an enormous amount of hope...let's explore all these in this episode of our Radio Serial Aanay vala kal....Once again...let's go onwards...together!

Characters

Three friends

Prof. Sandip: 50 years. Professor of IT.

Prashant: 50 years. Army man.

Rakesh: 50 years. Journalist.

Soft sounds of crockery and cutlery in the background like in a hotel. Sounds of waiters shouting Yes Sir etc., Kids being noisy etc.

Rakesh: (**exasperatedly**) Look Prashant, this Sandip is never on time! After so long, we decided to meet up here at our old hotel for a meal but he is late again...must have started explaining artificial intelligence to someone...

Prashant: Never mind, Rakesh. Sandip has been tasked by the government to disseminate information and these days Engineering classes are being held online, it may have been that a student has asked a question regarding machine learning.

Rakesh: Prashant, ever since childhood, you have always sided with Sandip...we have crossed the half century mark but you have not changed. I agree, Sandip is now Professor of Computer Science in an Engineering college...but even I have made time from my duties at the news channel....and you...you are a Colonel in the Army...I admit it is difficult to find time but you must make time for childhood friends.

Prashant: Come on Rakesh...Oh! Look who is here...Mr Late Taif himself! Welcome Prof. Sandip, welcome.

Sandip: (**in a laughing way**) I see both of you have reached on time...sorry...I just could not avoid that meeting...but I see Rakesh is just as offended as he used to be as a kid!

All laugh loudly

Rakesh: Laugh all you want...first you come late and then you laugh at the early bird...such are the times we live in...but come now...let's hug.

More laughter

Sandip: So, what have you ordered?

Prashant: We just had tea while we were waiting for you...order whatever you want.

Sandip: That is difficult considering the restrictions I am under...it becomes difficult to decide what to eat and what not to eat in a hotel.

Rakesh: Honestly, this is the trouble with you two!! So fussy about healthy food and junk food...what to eat and what not to eat. When the day of death is preordained how far can we run?

Prashant: Must you talk about death on a day like today. Besides who is afraid of death when surrounded by friends? So, Sandip...what do you say...should we order that?

Sandip: Sure Prashant. Now that our learned friend Rakesh has blessed us with such wisdom...let's order that...is it Ok, Rakesh?

Rakesh: Yes, why not? It isn't as if we are eating it everyday...order that Prashant.

Prashant: **(loudly)** Waiter.

Waiter: Yes Sir.

Prashant: Three plates *Choley baturay* with cottage cheese...and make sure it is cooked in pure clarified butter...desi ghee! Follow it up with three plates of rasmalai and finally, we will have Coffee.

Waiter: Yes Sir.

Rakesh: And don't forget the sweet chutney on the side...with pomegranate seeds!

Sandip: Wow Rakesh, you still remember.

Prashant: Why would I not remember...I am not so old that I have forgotten my childhood memories...I still recall that you used to eat Choley bhaturay only in places that served sweet chutney with pomegranate seeds along with it.

All laugh

Prashant: So, Sandip how is your project on AI going? Has it picked up pace?

Sandip: Yes, why not. Just give it a few years and you will find that India is a force to reckon with in the field of AI.

Rakesh: Yes the work on AI will definitely progress...but India being a force to reckon with...I don't think so.

Prashant: What makes you say so?

- Rakesh:** There must be something to show for it...and all I see around me are of foreign origin....and this concept...this technology...all these are foreign in origin so how can India make phenomenal progress in the next 2 or 3 years?
- Sandip:** That's the problem with you journalists...criticism is your only response...and you hardly collect all the facts because you chase exclusivity and swiftness of reporting.
- Rakesh:** I haven't said anything about the Army but even though you two are students of science ...you will not be able to brow beat me....Look what they have done...they are using Amitabh's voice and broadcasting messages over the speakers. And guess what ..it is an American company that has done this. ...where is the Indian AI? And do not argue that Amitabh is Indian.
- Sandip:** **(laughingly)** You are right but if there is one country that stands to benefit the most from AI, it is India.
- Prashant:** Rightly said, Sandip. AI holds great promise in one of the fastest growing economies of the world and the second most populous country. The best part is that our country is a global hub for technology and can serve as a centre for AI...and why should I say can...when it has already begun to serve as one.
- Rakesh:** Prashant, you two are talking as if AI is the staff of life. Just because a hotel in Ahmedabad is using robots to serve food to customers you cannot claim this is an example of India's enormous progress in the field. I can bet that 75 to 80 per cent of these robots are foreign in origin...well, maybe more.
- Sandip:** Prashant, don't you think Rakesh has become a little negative in his outlook ever since he took up journalism? I say, let the robots have 95 per cent imported parts but even if the remaining 5 percent i.e., the software is Indian, it is nothing to sneeze at. When it comes to investment in AI, India is at a global third or fourth position.
- Prashant:** Yes indeed. Quite a few start-ups are working on AI-based solutions in fields as diverse as Education, Healthcare, Financial services, and even Agricultural sector. A case in point is that Technology provider company Hexagon Capability Centre India has launched HexArt Institute, an Artificial Intelligence Community Centre in Hyderabad. The centre will train more than 350 students every year...and there are hundreds of such institutes.
- Rakesh:** Look here Sandip, as a journalist I know where each state stands when it comes to AI. The Telangana government has launched a new project called Sagu-Bagu, recently.
- Sandip:** Sagu-Bagu project. Isn't this the one that is aimed at promoting the use of artificial intelligence Agricultural sector so that the farmers can increase their earnings?
- Prashant:** Yes, Sandip...exactly.
- Rakesh:** I am glad you two know about the Sagu-Bagu project. The Telangana state government may have launched it but it was the media that disseminated the information, isn't it? And to think you called me "negative" just a little while ago. Look, we will definitely ask questions. Now, as I was saying, under the Sagu-Bagu project there is no doubt that AI-enabled technology is being used to enhance the

earnings of our farmers...yet, the AI technology is not a 100 per cent indigenous, is it?

Sandip: **(excited tone)** What do you mean, Rakesh? Do you mean India is not doing any research on AI? As early as in 2020, the Indian government sanctioned about 36 crore rupees to encourage AI, IoT, big data, cybersecurity, machine learning and robotics.

Prashant: **(calmly)** Look Rakesh, Sandip is correct. You are aware that the government is making the internet more accessible to everyone. India has one of the cheapest Internet rates in the world. The government is promoting e-governance, e-banking, e-education and e-health...and AI is emerging as the single most important facilitating technology in all these. As a journalist you must be aware that the Finance Minister has gone on record that the government would give industry-relevant skill training for 10 million youth in India in technologies like AI, Big Data and robotics.

Rakesh: You two are missing the point. I am not denying what you are saying. All I am asking is why every initiative seems to blossom in developed countries...western countries and then we in developing countries with emerging economies rush to adopt these and boast that we are *numero uno* in a said technology---by then, the world has welcomed some other novel technology. This is what I am saying!

Sandip: That isn't correct. It may be that previously the ecosystem wasn't there in the country for research etc., but now everything is changing and people are describing AI as the pinnacle of technology...it has the property of self-correction and can evolve too. That means AI can develop along the line best suited depending on the developing needs.

Rakesh: So Sandip you mean there is nothing above and beyond AI?

Sandip: No not at all. However, it is now possible to achieve many things by using artificial intelligence, genetic engineering and nanotechnology. In the days ahead these technologies seem replete with possibilities. India is ahead in all three areas and especially in the area of AI, India is headed for a major revolution.

Prashant: Very right, Sandip. facial recognition, biometric identification, criminal investigation, traffic and crowd management, wearables to empower women safety, optimising revenues in the forest, cleaning river, tiger protection, digital agriculture, student progress monitoring, healthcare especially drug development etc., are areas where India has made progress or else are areas being prioritized by the government.

Sandip: Prashant, you forgot to mention share markets, financial services, defence etc. And for the information of my journalist friend I would like to point out that the Defence Research & Development Organization or DRDO has already set up the Defence Research & Development Organization. It is dedicated to research on AI, robotics, Command and Control, networking, and cyber security. Its main task is not only to secure the country's defence but also use technology to protect our jawans. The laboratory is reporting overwhelming levels of success.

Rakesh: So, you are saying that the bipartite agreement between USA and India that was signed on 18 March 2021, that is, US- India Artificial Intelligence (USIAI) Initiative will work in India's favour? Can you not understand that this is a conduit via which our creative and hardworking youth will be exploited by foreign nationals?

Prashant: (somewhat angrily) Really Rakesh! It surprises me that in this era of science our thoughts appear to be limited by national boundaries when it comes to scientific research. Science isn't the property of any one country or a person...science cannot be limited or directed by caste, gender and things like that. If a scientist decides to work only for **the community** or only for the nation it reflects poorly on that scientist. Science is universal. Everyone has a right to it. The Telengana state government has tied up with Intel India to launch Intel AI. This is an initiative that applies AI to focus on identifying and solving challenges in the healthcare and smart mobility segments through strong ecosystem collaboration. Do you think this initiative will remain limited to just one country? India has always concentrated on projects that have ben of benefit to other economically backward countries which have not been able to spend substantially on technology development.

Sandip: Look Rakesh you have managed to anger our placid Prashant. Things will only change if you change your thoughts. It seems to me that it is necessary that the younger generation has a positive outlook. Take for example, Responsible AI for Youth which is the National Program for Government Schools. The aim is to make the youth 'AI ready' and reduce the AI skill gap. This will help our school going generation to identify with this new technology and to embrace it and thus, the necessary skill-set will blossom. I think this is a grand step.

Rakesh: I can't help it if you are upset. On one hand we are afraid of being exploited of having everything snatched from us but on the other hand, we invite other countries and gift them everything.

Prashant: Oho Rakesh, very recently the Ministry of Corporate Affairs launched its new website 3.0. It incorporates artificial intelligence, big data and machine learning. This will help companies in filing, and the idea is to facilitate business enterprises and to tack corporate compliance easily. This is why foreign investment is growing by leaps and bounds and basic amenities are also flourishing in the country.

Rakesh: You two are talking like true government servants. I am aware that the Ministry of Electronics and IT together with NASSCOM have launched India's national Artificial Intelligence Portal in June 2020. This portal works as a one- stop digital platform for AI related developments in India. Every bit of news related to AI-related news and development or advantages and benefits will be available here.

Prashant and Sandip: Who is aware of all this? YOU!!!

Both laugh

Rakesh: Laugh all you want but I reiterate...no one knows anything.

Sandip: That's the job of journalists like you, isn't it?

Prashant: Whatever are you saying Sandip? Can a journalist ever do something positive? Won't that work to benefit people?

Laughter

Rakesh: It is my turn to laugh now.

Sandip: Whatever for?

- Rakesh:** **(laughing)** First of all ...the cholley bhaturay are arriving but above all, I have recorded this conversation.
- Prashant:** The arrival of cholley bhaturay is good news but recording someone without prior intimation is a legal offence. Why did you do this?
- Rakesh:** Journalists are intellectuals and as such I am to deliver a talk entitled The advancing footsteps of AI in India...you would not have given me speaking points ...so I dented your ego a little and you contributed such a lot of information,

Laughs

Sounds of crockery and cutlery

- Waiter:** Three plates of cholley bhaturay with pomegranate added sweet chutney.
- Sandip:** Wonderful.
- Prashant:** Have you got enough information? Do you need more?
- Rakesh:** Now that you know the truth I expect you to tell me more...but the bhaturay are hot and the cholley is steaming.

Laughter

- Sandip:** Just like you have realized that the cholley bhaturay are sizzling hot, people exploring the depths of AI are also finding out more details about its true potential.
- Rakesh:** **(eating)** How so?
- Sandip:** The amazing thing is that AI touches every facet of life. As a journalist you will be familiar with 'writer's block.'
- Prashant:** Like there is an obstacle to free thought and the ability to write.
- Sandip:** Yes, Prashant.
- Prashant:** But this happens sooner or later in every profession.
- Sandip:** What happens is that a writer may think of a plot but tehn is unable to go on with developing the story.
- Rakesh:** Yes it is as if the brain falters and is unable to process anything smoothly. And sometimes the reverse happens, the brain is flooded with ideas ...yet when writer's block strikes we are unable to go on with the writing.
- Prashant:** So, Rakesh this seems to keep happening with you.
- Rakesh:** So true Prashant. Just last week I was supposed to write an article for a children's magazine. I began well enough but halfway through I hit such a writer's block that I simply could not proceed.
- Sandip:** Worry not my friend. A software has been developed using AI that can complete the unfinished work of any writer.

Prashant: Heh!! You mean all that is needed to do is to think of a plot and AI will take it to the conclusion keeping in mind the reader's requirements! Amazing.

Rakesh: Get me one of those...that will be such a great investment.

Sandip: Now you are recognizing the use of AI!

Laughter

Rakesh: More seriously though, isn't this a trifle more dangerous?

Prashant: What new danger have you spotted, my journalist friend?

Rakesh: We writers are in danger of losing our jobs to AI which will execute all our assignments ...won't we writers starve?

Sandip: Rakesh's negativity is coming to the fore again. Look, it can even mean that the writers are now free to push on and forge ahead ...to explore fresh areas...isn't this what creativity is? Who knows but you may stumble across an idea from outside of the box.

Rakesh: It is this "out of the box idea" that has ruined writers. For example, when the speed of Internet increased we got OTT platforms and webseries and movies of all kinds have cluttered the space...out of bag ideas are making us go crazy...from where will we get out of box ideas?

Prashant: That's it! Think how many books you will read, how many movies you will see and how many newspapers you will study...now, the AI-software has all this information and it proceeds to take cognisance of things that are above and beyond this information that is available to all.

Sandip: However, this software has a unique feature...it will complete your story in your own unique style.

Rakesh: Heh! How is that possible?

Sandip: I have polished off my cholley-bhaturay I will open my mouth now to eat the rasmalai...only then will I tell you more.

Rakesh: Yes, Yes...Ok Ok. Prashant...finish your cholley bhaturay quickly.

Prashant: I am almost done.

Rakesh: Waiter, get us the rasmalai, please.

Waiter: Three plates, Sir.

Rakesh: Yes.

Prashant: Let me be clear that I hurried to finish my cholley-bhaturay because I wanted the rasmalai...not because I wished to hear you discuss.

Laughter

- Rakesh:** Well, the rasmalai is here...now tell me Sandip, how can the AI understand my thought process and complete the story in my style?
- Sandip:** Tell me, Rakesh...your circle includes many writers, doesn't it? And you may even have a few as assistants.
- Rakesh:** Correct. In Mumbai, almost all well-known writers have teams.
- Sandip:** Have you ever wondered how those movie- story authors who become assistants determine if the Head will like a certain scene or appreciate a certain dialogue?
- Prashant:** They are familiar with what the Head's choices are...just like as a family member we know that Daddy will like this shirt and sister will like this one or the other...it is all because of familiarity with their likes and dislikes.
- Sandip:** That's a nice point you have made about likes and dislikes. We all learn from experience. That is how elders are able to take one look at a kid and say...this child pays attention, or that one is a creative child or the other one will become a good engineer.
- Rakesh:** Yes, this ability comes from experience and their power of observation.
- Sandip:** Absolutely correct. However reflecting on and understanding what you observe is also a requirement for this ability.
- Rakesh:** Well it comes from our conditioning, our upbringing, our education, our memories ...all these play a part.
- Prashant:** Rakesh is correct. These factors play a role in our ability to observe and assess.
- Sandip:** Both of you are correct. See, memory plays a crucial role. Memories define us...make us who we are. Makes me, me.
- Rakesh:** I think our Professor friend is becoming slightly senile... "*make us who we are. Makes me, me.* Look here, your face, your nose, your eyes... your entire body makes you who you are. Clear?

Laughter

- Sandip:** **(slight laughing tone)** My words aren't so difficult to understand anyway, actually we are a collection of our memories...whatever we have seen, heard or understood is stored in our brain...AI is able to simulate the brain and capture the memories...it creates an artificial neural network or a synthetic brain and then it will load it with memories and then, it will be capable of thinking like us.
- Rakesh:** Bro! Are you saying it will make an artificial brain and fill it with memories with the power of recall...there are over 700 crore human beings on Earth at this moment...how many brains will it make?
- Prashant:** That's a silly question. Take for example a shop...most people fit into a size 3 or a size 4...there are only a few outliers.
- Sandip:** Quite right. In a shoe shop, most people fit into a size 5.

Rakesh: I do not agree with your analogy of clothes and shoes...customer sizes may vary a little...but we are talking about brains. Can we classify brains into 4..or 5 or even 10 categories?

Sandip: Why not? Do you know how many types of people there are in the world?

Rakesh: Do people have types?

Prashant: Yes, why not? Based on personality, people have been classified under 8 types although some experts say there are 10 personality types.

Rakesh: So, Prashant you think that all of humanity can be classified under these 8 or 10 personality types and based on these few types you can design an efficient system based on artificial intelligence?

Sandip: Spoken like a journalist, my friend. Personality types are Ok and the machine can be educated too but the catch is to make a brain...one that mimics the human brain to perfection.

Rakesh: and how will you make such a brain?

Prashant: This is what the artificial neural network is all about! There are about 100 billion neurons in a human brain.

Sandip: The interesting thing is that there are about that many stars in our Milky Way.

Rakesh: What is the connection between the brain and the Milky Way?

Sandip: That is the fun...100 billion stars and 100 billion neurons...who can forecast if AI allows us to visit the stars some day or who knows, allows us to speak to stars.

Rakesh: This is a foray into the realm of science fiction whereas you were telling me about artificial neural networks.

Prashant: Yeah Rakesh...these neural networks, data and the intelligence needed to decode these: data analysis depends on all these. And together it forms an artificial neural network. The 100 crore I spoke about? Well data from a hundred crore people is all that is needed to create the synthetic or artificial brain.

Sandip: And machines these days are capable of thinking and understanding. AI has almost infinite potential. India is exploring the use of AI to find solutions to its many problems. Results are emerging too.

Rakesh: So, do you two think that the future of India...like that of the rest of the world... is tied to the use of AI?

Prashant: It is tied to humanity...but if the world is exploiting AI to achieve something, India too is on the frontline of that work. In the days to come you will surely see kids do coding...design algorithms...and....

Sandip: Journalists like you will quit asking questions although I want to add a comment.

Rakesh: Go on...don't stop...since you have said so much already...why stop now? Go on state everything...unburden your mind.

Sandip: I simply want to confess that AI has infused fresh life into a boring Professor like me. Now it is just a matter of time for the youth to use it to take the nation to the pinnacle of success...and the role of journalists such as you is crucial. You study an unknown topic in depth to understand every nuance...how hard you struggle...it is commendable indeed how dedicated you remain to the demands of your profession...keep it up. Keep asking questions. These questions are the foundations beneath the story of human progress.

Rakesh: Sandip, my dear...you are making me sentimental. My lecture material is complete. And I can say I have understood quite a bit of India's role in AI...I do have a few more questions but those can wait. I can promise you my questions will continue to be asked without fear or favour...like the one I am going to ask you two. May I?

Prashant: You don't need to ask a question before you ask the question!

Rakesh: So we had the chooley bhaturay and the rasmalai...and the tummy is pretty full...do we stick around for coffee or do we say Goodbye?

Laughter

Sandip: Of all the questions you have asked....this one is the most pertinent. Our tummies may be full but there is always space for coffee but we may go for a walk first.

Prashant: I have an observation. We ate and drank all this without a care when we were in our teens...I vote we can do it again.

Shouts: Waiter...three coffees.

Waiter: Yes Sir.

Rakesh: Sandip is an Armyman...he will be able to handle all this...we two might not be able to.

Sandip: Never mind, as friends we must eat and drink together...so come on!

Laughter

Conclusion

Anchor: This episode points out the limited vision most of us have regarding AI and elucidates the infinite potential that it actually has. India has stepped into the arena of AI and the nation is marching towards a new destination. Investment in AI has seen a rise and technology in government and private sectors are on an upswing. The new Age has arrived. There is renewed hope and energy. We are all connected to technology and now, there is the need to embrace AI in the same manner. Oh what am I saying? The need to embrace AI has been replaced by the actual adoption of AI and therefore, to learn about AI in more detail...do not forget to tune in to our next episode of Aanay vala kal. Till then, Goodbye and good cheer. Namaste.

--End--