

Aanay Vala Kal

Episode 49

Towards Immortality with AI

Script and Research: Dr. Anurag Sharma

English translation: Sukanya Datta

Concept and Coordination: Dr. B. K. Tyagi

Introduction

Anchor: Namaskar. We are now well acquainted with Artificial Intelligence or A.I and now, its presence is ubiquitous in every walk of life. Additionally, although discussions about AI abound, there are concerns and unfounded fears about A.I. Also, just how well-founded are our hopes centred on A.I? Will A.I transform us into slaves of machines? Has humankind scripted its own demise by its own hand? If there is a shred of truth in any of these statements then it needs deep reflection, indeed. Yet can we, with our limited abilities be able to shed light on the limitless potential of this technology? To conquer the anxiety about AI we not only need to enter into discussion and debate but also to keep an open mind. Is AI truly a quantum leap taken by human evolution? May be so! However, what if it is a wrong move? AI machines are increasingly being able to self-assemble. So, what if this ability places the entire human existence at a disadvantage? Let us explore all these possibilities armed with a bit of amazement, some worries and a whole lot of hope. In today's episode of Aanay Vala Kal we present - **Towards Immortality with AI**

Characters

Prof. Sunil: 50 yrs. Physics Professor. Father of Annay and Anushri

Anany: 24 yrs. Works in IT sector.

Anushri: 21 yrs. BSc Physics

Dr Sneha: Doctor. Mother of Annay and Anushri

Dadaji: 75 yrs. Retired Hindi Professor

Morning-appropriate music

Sounds of argument in the background

Dadaji: (Almost scolding tone) What is this singularity, singularity you are talking about...nothing like this is ever going to happen.

Ananay: No, no Dadaji...we are advancing towards singularity...without a thought...like we are progressing from AI to AGI or Artificial General

Intelligence in such a way that it will no doubt be the end of human civilization.

Dadaji: Oh Ananay! It has been just about 6 months that you have started working and just about dipped your toe in the field of data analytics ...it is raining...sit back, eat pakoras and enjoy the weather instead of fretting over singularity.

Ananyay: But Dadaji, it is important to face the truth, isn't it? To take it into account and plan for the future accordingly is important. Singularity is a fact...may be tomorrow's truth if not today's. We cannot negate it.

Sounds of rattling crockery

Sneha: Onion and potato pakoras are ready...but what is the argument between grandfather and grandson about?

Dadaji: **(happily)** Wow...the pakoras are just what I have been waiting for while trying to drum some sense into Ananay: the representative of the new generation...and Sunil, my son...come...come...what are you doing here, my Physics Professor?

Sunil: **(from afar)** Father...this Physics Professor fried the pakoras for you although the chopping was done by our cook Manisha who also rustled up the tasty chutney. Your granddaughter Anushri helped fill the bowls which have been served with love by your daughter in law Dr Sneha!

All laugh

Dadaji: **(Good humouredly)** And to think all the credit was about to go to one person **(raises his voice)** Manisha, Thank you.

All laugh

Ananay: You cannot hide behind the pakoras to avoid our debate on the future of mankind and AI.

Dadaji: Go and argue with your father...I am off to savour the pakoras.

Sunil: So, what is the topic of today's debate?

Anushri: Let me tell you. Your son...the employee of a multinational IT company...my brother, Ananay is of the opinion that thanks to AI, machines will soon surpass humans in intelligence...and then the machines will lord it over humankind...in time human beings who devised AI, smart machines, machine learning etc., for their own convenience will become slaves to the machines.

Sunil: Oh so, Ananay you subscribe to the theory of singularity. **(Laughs.)** Been watching a lot of Hollywood movies, have you?

All laugh

- Sneha:** There is no need to laugh about this. I think Ananay makes a valid point. No one knows when machines will become truly intelligent and start taking decisions. In medical Science, AI is already aiding in diagnosis and drug development. You can take the Corona virus vaccine development and the search for new drugs as examples. All this would have taken years but AI made it possible in months...if not just, days.
- Dadaji:** The pakoras are very tasty...but Sneha dear if AI is doing all what you say it is doing...what appears to be the problem?
- Anushri:** That is exactly what I have been thinking. ...If AI can aid drug development or assist in diagnosis of diseases then, what is the trouble especially when it is doing so extremely quickly. It is good isn't it?
- Ananay:** And what about the AI that deals with Management, Administration, Accounting, Share markets, Policing, Traffic control, driverless transport etc?
- Sunil:** What about these? These are excellent examples of AI working in our service ...for our comfort...there is less corruption...and proper selection of capable candidates ...no wonder Human Resource Departments of companies rely so much on AI.
- Sneha:** **(loudly)** Manisha can you get me some more tea, please? **Normal voice.** But are we going in the right direction? The rate at which we are filling these machines with data ...all in the name of convenience ...making these machines self-reliant... even smart in a way...aren't we running the risk of turning these into aggressive robots?
- Ananay:** Make them? Mummy we have already created extremely smart drones, missiles that can identify their targets and launch attacks by themselves.
- Anushri:** Well, all of you are my elders but as a student of Physics I understand that all possible safeguards have been embraced while designing these AI-based machines. There must be some reason to create anti-humanity machines or are we to believe in conspiracy theories? We have been on Erath for lakhs of years...how can a machine just wipe us out?
- Dadaji:** Anushri has made such a valid point that I must celebrate it with another pakora...and yes...ah! Some of this wonderful chutney too. **Laughs.** That machines will rule over us in the days to come is not a new idea...it has been around for a very long time. Yet the next quantum leap of human evolution will definitely be facilitated by these AI-enhanced machines. But I have a question. All of you are students of science... Tell me, what do you envisage to be the future of hum civilization?
- Sneha:** Well, the way human greed is growing by leaps and bounds and the way the Earth is being exploited and biodiversity is being destroyed coupled with the advance of AI which I am witnessing in the form of machine learning and Internet of Things...the domination of machines over humankind is evident. Although they are not doing so yet, in the next few years machines will certainly dominate mankind completely. I agree with Ananay. We are

advancing towards AI-singularity or machine domination albeit in a slow and steady manner.

Dadaji: OK Sneha. Now, Sunil. What is your opinion?

Sunil: I am a Professor of Physics but I do understand a little of IT, AI etc., I think there is no need to be apprehensive about AI-machines. Afterall, technology is designed to make human lives easier and more comfortable. I think this is just a quantum jump that will take us further on a new and pleasant road.

Dadaji: I know Ananay and Anushri want to speak their minds too but before that I want to ask Sunil a question about this new and pleasant road. (**Humorous manner**) Well...I was a Professor of Hindi but I did have a knack for science...so, tell me what happened when a country such as America transitioned from being an agricultural economy to being an industrialized one. And Sneha dear...you can also add your words to Sunil's.

Sunil: The change was a gradual one so, the people had time to adjust and adapt.

Dadaji: Even then, there must have been some effect on the people...on society at large.

Sneha: I have not quite grasped where you intent to take this debate with this question of yours. But to answer you, I want to say that whenever the economy transitions then citizens do initially at least...struggle to cope. Employment issues may arise. But slowly normalcy is regained and prosperity comes after that. Now, if we are to transition to AI-based economy then everyone has to be conversant with coding or computer programing at least!

Dadaji: (**amazed**) How very perceptive of my doctor daughter in law...wonder why she agreed to marry my son!

All laugh

Dadaji: You are correct Sneha. When America faced the Great Depression people lost their jobs, flourishing businesses stagnated, and the numbers of suicide spiralled. But as Sneha pointed out, when AI truly comes into its own people will have to learn coding etc. I think in the next 5 or 6 years, kids will rise to the challenge and master the art of coding. Many traditional job opportunities will, no doubt, vanish. AI has already entered the fields of Transportation, manufacture, health, education, media, consumer-services, agriculture etc., However, although you two have stated your views you have not answered my question. So, I will now ask the younger generation ...Ananay and Anusri...what are your views regarding the future of humankind under the circumstances.

Anusri: Well, we have a fair idea about what Anannay thinks. So, I will go first. Every technology fills me with hope although I have to admit that a few have resulted in loss. Technology is like fire...you can use it to cook food or to burn down the home. I feel AI holds the key to advancement in sectors such as

Environment, Water, Fuel, Disease-control etc. and that we can use it to make the planet more beautiful and life-sustaining.

Dadadji: You have put forward extremely positive views but do you think the Earth will always sustain life?

Ananay: **(Perplexed tone)** What are you saying, Dadaji? Why would life not remain on Earth...these are challenging days no doubt but life will persist on Earth forever.

Sneha: Life will always remain on Earth.

Sunil: Yes Father...there will always be life on Earth.

Dadadji: Is that so? But why? Why will life always be sustained on Earth? You do know about the last five mass extinction events, don't you? These led to rapid decrease in the biodiversity on Earth. 99.5 percent of all of life on Earth vanished. These creatures enjoyed their time on Earth for so long...compared to the time they had...humans have lived on Earth for just one second in a 24 hour day. But yes, there is one major difference.

Ananay: What difference? And what is it that you want to say, Dadaji? What connection does AI have to mass extinctions? And that the technology used to make life easier may one day rule humankind is a fear many have expressed...so what is the difference you are talking about?

Dadaji: That we are not dinosaurs.

Sunil: **(perplexed voice)** We aren't dinosaurs...what do you mean? And what connection does this have to human existence?

Sneha: We aren't dinosaurs. What connection does this have to have with our debate today?

Dadaji: I am always amazed to see the negativity in people. We have just about developed a technology...not even enjoyed its full potential as yet...but people are already thinking in a negative manner. Yes, extinctions happened. We faced so many dangers. So many epidemics struck. Yet humankind surmounted all these challenging situations and times. Humankind survived. Why?

Anusri: Because we are not dinosaurs.

Dadaji: Well said, Anusri. Humans are stubborn. Full of fire. They are intelligent. Let me tell you a story. About 75000 years ago, Mount Toba, a volcano erupted in Indonesia.

Ananay: Yes and the eruption ash plume blocked the sun's rays from reaching Earth for a thousand years and led to global volcanic winter.

Sneha: They say that it resulted in a severe reduction in the size of the total human, that is *Homo sapiens*, population which crashed to about 2 to 3 thousand only. But look at the population on Earth today! Almost 8 billion humans!

- Dadaji:** At that point of time there was no technology. No AI. Yet human beings survived. Humans leveraged their intelligence...their courage...their patience. No wonder Carl Sagan, the famous writer and astronomer wrote, **Life is so precious that it is unfair to limit it to one planet. It ought to be spread to all planets that can support life in the universe. Humanity should be spread to all parts of the universe...and that is how we will find everlasting life...life eternal.**
- Ananay:** Are you talking about the prospect of using AI to colonize space?
- Anusri:** You mean humankind will make a quantum jump in space thanks to AI?
- Sunil:** But, but...what makes you think so?
- Sneha:** Because we are not dinosaurs.
- Dadaji:** Absolutely right...because we are not dinosaurs. The dinosaurs did not have a space programme...did they? And think what will happen when the Sun comes to the end of its cycle and envelopes the orbit of the Earth in its fiery embrace. Galaxies collide. Larger galaxies swallow smaller ones and gain energy in the process making them larger. This kind of galactic warfare goes on in the universe. Sunil, you told us once that the Milky Way which is home to our Solar system is on a collision course with the Andromeda galaxy. The collision will destroy the Andromeda galaxy and lead to an enormous release of energy.
- Sunil:** Yes father, that is correct but the event is predicted to happen only around four and a half billion years later. Galactic collisions keep happening...what role does AI have in these?
- Dadaji:** Son, in 2017, we have found not one but seven Earth-like planets just 39 light years from Earth. Three of these are in the habitable zone and likely to have liquid water.
- Sneha:** **(perplexed tone)** Exo planets are discovered all the time...what connection is there between AI and the future of human beings?
- Dadaji:** Sneha, recently an Earth-like exoplanet has been discovered. It has been named Proxima Centauri B. It orbits the habitable zone of Proxima Centauri, which is the star closest to Earth and which is approximately 4.2 light-years away from us. Scientists are speculating that this may be the first planet to be experimentally colonized by humans.
- Ananay:** Yes indeed ...but again, what connection does this development have with AI or machine learning?
- Dadaji:** Why wouldn't there be a connection? AI facilitates each and every technology. It helps resolve many problems. Just imagine...a star around which a life sustaining planet is in orbit and then, that star becomes a Red giant destined to die. Imagine some of the population on that planet are able to escape and embark on their search for other solar systems while the rest are doomed to

remain on the dying planet. Imagine how it must have been ...and imagine also that somewhere this scenario is unfolding.

Sunil: Yes father, this is possible...but what do you envisage as AI and human-future?

Dadaji: So you think humans will only enjoy the fruits of AI while sitting at home. Robots toiling in agricultural fields and Robots serving cold drinks. Robots massaging us and Robots taking us on vacations.. Robots preventing diseases....is this all you think is possible?

Sneha: Well, that is the way human life should be with AI.

Anusri: Dadaji, you did say AI exists to make human life easier...smoother!

Dadaji: If we attain positive singularity that is a state where machines rule...will we become utterly lazy? I mean with machines doing all the work and human beings not lifting a finger to do any work? What do you think?

Sunil: We can lift our fingers to eat the pakoras at least.

All laugh

Ananay: I think I am understanding a little bit of what you are trying to say. All these technologies...AI, smart machines are all geared to lead us...the human species towards immortality.

Anushri: Don't take a U-turn, bro...how can human beings become immortal?

Ananay: Look sooner or later, according to the Laws of Physics, Planet Earth is due for destruction. If nothing else, we face a series of natural disasters...who knows when a Mount Toba like super volcano will erupt again? We cannot afford to let the fruits of our intellect...AI, and technologies...go to waste.

Dadaji: This is absolutely correct. My tale (Laughs) about singularity is this...just one major natural disaster can wipe out this amazing human species, along with its legacy of collected and transmitted knowledge over the generations. From hunting with sticks and stones to AI...what a journey it has been. Imagine...all this is threatened with annihilation. Even if restoration is possible in time...no memory of this legacy will exist...the beginning will be from Zero that too after an immeasurable number of years. Technology, AI especially, can help preserve human civilization, culture, knowledge....for ever. Time is at hand for humans to initiate space exploration in the quest for new planets and new life.

Sunil: But father, even if human want to eternally perpetuate their existence, the enabling technology is much too primitive to make it a reality. We are identifying planets that are many light years away...but the technology to reach those planets is till decades or even hundreds of years away.

Anushri: But Papa, we have to begin somewhere...the journey from earthen vessels and bone weapons to today's achievements took a few thousand years...with AI, the pace will be greatly accelerated.

- Dadaji:** Excellent Anusri. This is the kind of positive thinking that we need. Otherwise we will be trapped in doubts and no solution will ever be found. Human life is priceless. Agreed that we are currently mired in problems that perhaps have no relevance to our future. We can see and think only about the immediate future. It is correct to talk about eco-friendly matters but can that stop earthquakes, volcanic eruptions or other similar natural catastrophes? And even if it is after countless millennia, the end of the Solar system is a given! Then what? Will we be galvanized into action when the peril is on us?
- Sneha:** So what do you think? In which direction are we being taken by AI and technologies such as smart machines?
- Dadaji:** Sneha dear, I visualize human beings as multi-planetary species. I also see AI as a tool that will help actualize this dream.
- Anusri:** But we have not found any trace of life anywhere else in the universe. Are you sure human beings are not planning to embark on something that is way beyond their capabilities?
- Sunil:** Anusri is correct. Though now we also have space tourism, the talk about colonizing other planets seems a bit of a stretch.
- Ananay:** But Papa, I can see the logic in Dadaji's arguments. We are looking at AI perspective limited to car driving, agriculture or health services whereas the potential is limitless. Life is valuable and we have the responsibility to safeguard it. AI is one of the means of doing so.
- Sneha:** Hmm, so Ananay you support the idea that AI can take us towards immortality. Father, just how many planets and how many galaxies must we explore before we are able to do so?
- Dadaji:** **(Laughing):** Sneha dear, our Milky Way or Mandakini galaxy alone contains approximately **1 billion stars and at least a hundred billion planets**. Now, can you imagine how many planets may be there in the Universe? **It is 21.6 sextillion or 21,600,000,000,000,000,000,000 (2 followed by 23 zeros)**
- Anusri:** Who is going to explore so many planets?
- Dadaji:** **(Laughing)** Who knows but it can be you! Look the Space station is being constructed and AI is assisting in making more efficient spacecrafts. I feel that in the years to come we will witness colonizing groups depart Erath for newer destinations in space. Depending on the planets they reach, these pioneer colonizers will establish themselves and technology will evolve further. Who knows but in time AI-may facilitate teleporting and travel between two planets can be accomplished in the twinkle of the eye. Then, humankind will spread across the entire Universe
- Anusri:** Excellent. But promise you will visit Mars on the occasion of Teej every year.
- Ananay:** Why Mars?

Anusri: Because I will settle in Mars.

All laugh loudly

Ananay: I may be delayed a bit.

Sneha: What is your problem?

Ananay: Well, it will take a little time to come there from my office in Proxima Centauri, won't it?

All laugh

Sunil: Father you are absolutely correct when you say that we have narrow vision. We begin to discuss the adverse effects of a new technology even before it truly arrives...till it feels like there is a conspiracy afoot.

Laughter

Dadaji: That is true, Sunil. Positive thinking is so necessary in life! And inequity has increased the distance between people and that is why we are unable to act unitedly as humankind. Yet it is commendable that scientists forged ahead and blazed the path forward.

Sneha: Truly, you opened up a new vista but sharing a new perspective on AI. Actually we can just about visualize 50 years or at best a hundred years of the future. And in the billion-year history of the Earth, humankind has played a role in only about a few thousand years. We cannot conceive of enormous stretches of time. We think of AI-machines as novelties and with our limited vision, we only take into account immediate losses and gains. Whereas AI, machine learning and related technologies have unlimited potential about which we have not even dreamt.

Anusri: Now Mummy is making a U-turn! This proves the need to ignore all our fears and fallacies about AI and the need to take a broader view of AI. Even if today AI is limited to agriculture and health or even to the development of weapons of war there is no doubt that ultimately it will serve as an agent of human prosperity.

Ananay: **(Clapping)** Well said Anusri. I agree with her splendid summation. I agree that AI has great potential and the need of the hour is to use it productively for human gain. Taking into account human intellect, human courage and the human mind, I think the apprehension of machine singularity...where machines rule can safely be put to rest. AI and human beings will together traverse a long path. However, Anusri, I have a question.

Anusri: What?

Ananay: You could not even make it to Granny's home...how will you go to Mars?

Anusri: Don't worry. Covid made it necessary to use technology that enabled us to study from home. Necessity will take me to Mars!

Sunil: Wonderful, Anusri. Well, today's discussion was a great one. Father! What are you thinking about?

Dadaji: You had made such tasty pakoras and now talking about AI and space travel has made me hungry again. If there is some batter left over...can you make me some crepes...I'll have those with ketchup.

All laugh

Sunil: Yes, yes.. why not. Manisha is still around.

Sneha: Let's go and help her.

Dadaji: Good idea. I think we should keep making and eating pakoras and crepes made with besan.

Ananay: Why so, Dadaji?

Dadaji: Who knows if you will get these in your office on Proxima Centauri!

Loud laughter

Anchor: So now you understand what a limited vision we have about AI when its potential is truly limitless. AI is revolutionizing Medical sector, Service sector, Agricultural sector, Education sector and it appears that it can contribute towards making human species immortal too. The need is to indulge in positive thinking. The use of AI in making intelligent machine is an ongoing project where what comes to pass may fall short of expectations or maybe it will exceed it...who knows? Yet there is no denying the beautiful promise that it is holding out about a future replete with hope...a future that will take human aspirations to newer heights. To learn more about AI and all aspects related to it keep tuning in to the next episode of Aanay Wala Kal. We will return with the next instalment of this interesting topic. Till then, Namaskar.

****End****