

Mind Your Message

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(This episode elaborates on the concept of General AI and efforts for the same going on across the world. It has a robot called Robu that is designed by a physics teacher with encouragement from his students at the coaching centre. It lends a helping hand in flood relief operations. But the robot has limited capabilities as far as responding to human emotions. It however springs a surprise at the conclusion of the episode. The various characters talk about the research and application of artificial intelligence to fathom and respond to human emotions.)

[Rahul, aged around 45, a businessman by profession, is relaxing in the drawing room. His wife Suhrita, almost Rahul's age, is supervising the studies of their daughter Asmita who is a eleventh standard science stream student. Meena, the maid, aged around 30, is busy at the kitchen. The doorbell rings. Rahul opens the door.]

Characters

Ragul (Age 45, Husband)

Delivery Boy (Age 24)

Suhrita: 9 Wife Age 42)

Meena (Age 30, Domestic help)

Ashmita (Daughter)

Bhaskar:

Naveen and some other students.

Rahul: Yes...what do you want?

Delivery boy: Good morning sir. I am from the departmental store. Here is the butter you ordered.

Rahul: Butter! Wait a minute...Suhrita! (calls his wife aloud. Suhrita comes in a hurry.)

Suhrita: What is it? Why are you shouting? You frighten me sometimes.

Rahul: No need to get frightened. Calm down. This boy is from the departmental store. He says that we had ordered some butter. Did you do that?

Suhrita: Me? Why should I? There is plenty of butter in the refrigerator!

Rahul: That's what I was wondering. Why should someone order something that is already in ample stock?

Suhrita: Right...I mean...

Rahul: But this fellow cannot be wrong either! He must have received some information that looks like an order.

Boy: Exactly sir, see here...the information on this slip clearly has your name, house number and cellphone number...here...see...two units of 200gm of butter...

Suhrita: Hmm...there is no confusion as far as this slip is concerned. It mentions the time also. Last night 9pm.

Rahul: What? Last night, 9pm? Just a minute...let me have a look inside my refrigerator...

(Rahul departs from the scene. Sound of opening of the refrigerator door. After a second Rahul yells 'Meena'. Meena stops cooking to attend to the call.)

Meena: (Somewhat frightened) Yes saab...is there anything wrong?

Rahul: Look here, where have you kept the butter?

Meena: Where...I mean I haven't moved it out of the refrigerator!

Rahul: That is ok Meena but where have you kept it? Not on the butter tray at least!

Meena: Actually, I took it out to....

Rahul: And there lies the mystery of the order. From now on keep every item where it belongs. You understand Meena!

Meena: Sorry saab. I won't forget henceforth...

Suhrita: (Shouts) The boy is waiting here. Come and sort this first.

Rahul: Coming! Everything sorted. (Rahul heads for the door again.)

Boy: Is there anything wrong with the order sir?

Rahul: It's my new refrigerator that has played spoilsport!

Boy: Refrigerator sir?

Rahul: Yes! It is a new product and they say that this is part of the Internet of Things!

Boy: I can't follow sir. Shall I take this back?

Rahul: No, please don't. I honour your prompt service. Leave the butter here and you can credit the amount to my monthly bill.

Boy: And the refrigerator sir?

Rahul: Oh! It is designed to place an order when particular items are found missing. The butter was misplaced by Meena, our maid, and so the machine thought that an order should be sent online!

Suhrita: Oh these machines! They give more headache than comfort!

Boy: That is very funny sir! Machine placing order...he he...

Rahul: Thank you for the delivery anyway.

Boy: Welcome sir. He he...machine...butter misplaced...order sent... (Messenger departs.)

Rahul: Close the door please Suhrita. (Sound of door being shut.)

[Asmita walks into the drawing room.]

Asmita: What was that all about papa? Was that some salesman?

Rahul: No the boy was from the departmental store down the street. It is an autonomous marketing activity by our new refrigerator that brought him here.

Asmita: Your new IOT refrigerator giving trouble so early in its life?

Suhrita: New technology means new trouble Asmita!

Asmita: I can't accept that Ma! New technology gives you so many new advantages. How can you ignore those?

Rahul: That is the point Asmita! Suppose that we all leave the house for some reason and not even Meena is in the house. Suddenly one of us remembers that we have left our water-pump running. What do we do then?

Suhrita: Do what? Why should you leave the house like that?

Asmita: It could happen by accident Ma!

Rahul: If the pump is a part of Internet of Things then we could turn it off just with our cellphone. We could do it from just any place. It remains connected all the time! That's the advantage.

Suhrita: And your pump also might place some order, erroneously, for spare parts some day! And the boy would...

[Rahul and Asmita breaks out in laughter]

Asmita: Ma! You are just...

Suhrita: (With pseudo anger) I am what? Stupid?

Rahul: (Still laughing) No-no, not that. Asmita is just...

Asmita: Ok, whatever, you two stop this laughing chorus. And Asmita, what about your preparations for tomorrow? Have you packed everything?

Rahul: You are going somewhere tomorrow Asmita? You haven't told me anything about it!

Asmita: Umm...papa, I was about to tell you about this. In fact, our coaching centre has decided to distribute relief materials among the people affected by the recent cyclone.

Rahul: I see. Where are you going? Is it the Sunderbans?

Asmita: (A bit hesitant) Yes papa. You know that people over there are so badly hit...

Rahul: I know very well about the situation and I am not against relief work. But you must understand that many of the places there are waterlogged. It is not very safe for students like you who are not trained to cope with such situation!

Suhrita: I told her that it's not safe! But she is so stubborn...

Asmita: You know papa, tomorrow we are doing another thing that might take care of your concern.

Rahul: I do not get your point. Are you hiring trained relief workers?

Asmita: Come on papa! What we are doing is employing a robot to negotiate difficult terrains. It's powered with artificial intelligence and our physics teacher has designed it.

Suhrita: Again new technology? I am getting more concerned Asmita!

Rahul: Is it the first time that you are putting it into action? See, I am a businessman. You know that I trade in several types of products and people like us do not trust items that are not well tested.

Asmita: We did test it during the school fest. Robu was a hit!

Suhrita: Who is Robu Asmita? You are hiding things from me. I have a right to know...

Asmita: Oh Ma, Robu is the name of the robot! You are always so suspicious!

Rahul: I am still not very impressed. But when you are so eager....let's see what comes out of your experiment.

Suhrita: And don't strain yourself too much. Do not forget that you are in the eleventh standard and this is the most crucial period of your life. Another thing! Do not take off the mask from your face and frequently use sanitizer to disinfect your hands.

Asmita: Ma, do you think that I am here from some other planet? Don't I know that the novel corona virus is still with us? Please do not worry so much! Your daughter will remain safe.

Rahul: Better be on your guards Asmita. These are difficult times. Let's end this discussion here. It's time for my bath.

Suhrita: You also go and finish your studies Asmita. We shall have lunch in an hour.

Asmita: Ok Ma!

[Change of scene. The vehicle carrying Asmita and others from the coaching centre is nearing the spot called Jharkhali in the Sunderbans where they will distribute relief materials. Sound of engine and then birds chirping. The team is led by Bhaskar and also has Naveen, Antara and Ranjan among others.]

Bhaskar: Driver, stop the car here. We have reached.

Ranjan: Sir, you are sure that this is the spot? I cannot see any gathering of people around. Who is to receive the relief materials?

Ranjan: I am pretty sure Ranjan. My internet connection is still working. You see that dilapidated building over there? That is the landmark for us. The BDO will be here soon. The people will also arrive.

Antara: Bhaskar sir, will all of them assemble here?

Bhaskar: Look at that stretch of water.

Antara: Yes sir, there are some huts on the other side.

Asmita: A two storeyed building is also there...

Bhaskar: Right. The displaced people are housed in that building. They will come out of that house and Robu will sail over across the water and distribute relief materials.

Naveen: I can see the need for relief here. It is not easy to cross this waterlogged here. Who knows how deep this is!

Asmita: Sir, we could have hired some boat and reached the other side! That would have been perfect.

Bhaskar: A boat will arrive but that will take another two hours. In the meantime we shall test the efficiency of our robot.

Ranjan: Sir people are slowly coming out of the house, look!

Bhaskar: Let's switch on our Robu Here...(a mechanical sound signals that Robu has started working.) Let me talk to Robu first. Good morning Robu. (a slight pause is there as Robu does not reply but the mechanical noise is heard.)

Antara: Sir it's not responding. Anything wrong?

Bhaskar: Be patient. It will speak... (and Robu comes to life)

Robu: Morning Bhaskar.

Naveen: It can identify you instantly.

Bhaskar: It's my child Naveen. I have built up with so much of care and diligence! Now we will assign the coordinates so that it can reach the people there. Here...umm...right...thirty four and...(Makes a sound by mouth of trying to switch buttons on a panel.) Now it's fine.

Asmita: It will not be able to carry much load across the water Sir. What to do?

Bhaskar: I have planned it perfectly. First, I shall hang the bags of medicines from its flanks. Robu will be able to carry this much of load initially. Ready for assignment Robu?

Robu: Give materials. Start journey.

Naveen: I am so impressed by Robu's way of speaking. A bit nasal though...

Bhaskar: We are not some multinational tech company Naveen that we can produce robots like Sophia in our labs. Robu is what we can design with our resources.

Asmita: That is right Sir. Making high tech products with little resources is where the challenge lies.

Naveen: (Whispers) Trying to impress him. As if we do not understand these things...

Asmita: (Also in subdued tone) I am not trying to impress. You can't take things straight!

Bhaskar: Bag of medicines hung properly. Now we shall send this to the other side. Here goes Robu... (a whizzing sound is heard and Robu starts sailing.)

Antara: The hovercraft like system is working so nicely Sir! It's sailing smoothly.

Ranjan: It's quite fast also. See how much distance it is covering each second...

Asmita: But sir, see! Something is happening at the other end.

Bhaskar: Other end? What is happening?

Antara: Sir it seems that they are afraid of this machine!

Ranjan: It would have been better if we carried a loudspeaker sir.

Antara: Yes, we could have allayed their fears from here.

Bhaskar: No need Ranjan. Robu does not look like a human. The fear is natural. But Robu will be able to tell them that it is on a relief mission.

Asmita: But sir, we have not trained it for such a situation. How will it know what to speak?

Bhaskar: You are right. I have integrated a text to speech to voice system in it. I shall be sending a message and Robu will be announcing it loudly. From next time it will remember the situation and the message.

Naveen: Sir Robu has reached the other side. The folks are still afraid. They are maintaining a safe distance.

Bhaskar: Let us now switch on this microwave speaker. We shall be able to hear what Robu speaks. Here...listen to the noise, this appears when Robu tries to start a dialogue. Listen... (Robu's voice on the far side of the water is heard on this microwave speaker)

Robu: Fear not. Me Robu. I have come to help. Please come near.

Antara: Sir, the people do not seem to be impressed. They are still there and staring.

Ranjan: I think that the message will have to be repeated.

Bhaskar: Robu will automatically do that if the expected effect is not produced. Just wait. Now listen...

Robu: Fear not. Me Robu...

Asmita: Yes Sir, Robu is repeating the message. And look two young men are approaching it.

Bhaskar: Robu will be able to tell them how to store the medicine and how to take it.

Ranjan: But here are so many medicines...and not all of the people there is familiar with the names...

Bhaskar: This is relief with a difference Ranjan. Robu will pronounce the names of medicine, describe whether it is a tablet or syrup, what size or capacity the tablet is or how big the bottle is...

Naveen: It is doing just that...listen sir...

Robu: Paracetamol. A tablet. Flat and rounded...

Asmita: This is exciting Sir. It means you have worked with the software for the last two weeks.

Bhaskar: You have to work overtime...but wait, there the BDO is coming...welcome Madam Jayati.

Jayati: It is me who should welcome you Mr Bhaskar. You are doing me a favour. So where is your Robu?

Bhaskar: Right across the stretch of water Madam! Robu is telling them about medicines before distributing those. You can listen to what it is saying from this speaker...here...

Jayati: (Smiling) Right, I can see. The people are listening.

Asmita: Sir, there seems to be some problem. There is some irregular movement in Robu's arm. Look...

Jayati: Someone is shouting in front of him. The fellow seems to be angry. I should have deputed a couple of constables here. Tempers are running high these days.

Bhaskar: Wait ma'm, let us listen to what that fellow is saying. Increase the volume of the speaker Ranjan!

Ranjan: Right Sir! Here...(the voice of the fellow is heard)

P1: Our ration is exhausted. We need food. Why is this toy blabbering about medicine?

P2: That is right. Bring rice and lentils first.

Jayati: Others seem seems to be joining

Bhaskar: Robu is puzzled. It has not encountered such an expression of frustration and anger.

Jayati: Bring it back if you have the mechanism. I am afraid that they might cause harm to your robot.

Bhaskar: Not a problem ma'm. I am pressing this retreat button. It will step back and then sail back to us.

Jayati: Yes your command is working. I feel relieved. The boat will arrive soon and fetch the relief materials. But I don't want any harm being done to your Robu.

Bhaskar: (Laughing) You are also calling it by its name ma'm You seem to be interested in robots.

Jayati: You know, I had studied mechanical engineering and I wanted to join some robot manufacturing company. But...you know...you plan something and you get to do something else...

Antara: Ma'm this Robu has been designed by Bhaskar Sir.

Jayati: I know. I was eager to have a look. I keep studying about artificial intelligence and robots. Some elements of theory of mind AI currently exist or have existed in the recent past.

Naveen: Tell us ma'm something about this field.

Ranjan: Yes. Before Robu returns we can acquire some knowledge.

Jayati: You must be knowing that two notable examples are the robots Kismet and Sophia, created in 2000 and 2016, respectively. Kismet was developed by Professor Cynthia Breazeal ...

Bhaskar: It was capable of recognizing human facial signals and could replicate those emotions with its face.

Jayati: Right, it had four cameras working as eyes but the vision suffered from various limitations.

Asmita: And Sophia ma'm? The latest craze?

Jayati: Sophia, on the other hand, is a humanoid bot created by Hanson Robotics. What distinguishes her from previous robots is her physical likeness to a human being.

Bhaskar: Plus her ability to see and respond to interactions with appropriate facial expressions. We call that image recognition.

Jayati: But I must say that it's fame is more hyped than real.

Naveen: Robu is back Sir! Let me fetch it out of the water...

Bhaskar: Careful Naveen, don't put pressure on its arms. I am not sure whether it has suffered any damage through the irregular movements.

Jayati: (Receives a call) Hello...yes ...speaking...where ...I see...ok, make it fast. (Concludes the call) The boat will be here in about ten minutes. Boats have become so difficult to find during such crises!

Asmita: Our Robu doesn't need a boat ma'm but it's capacity is limited.

Jayati: I can see that. But it has already done a nice job. Mr Bhaskar, let us do one thing. I shall leave my car with the driver here. He will see to it that the relief materials are despatched to the people when the boat arrives. In the mean time I invite you to my quarters. We shall travel in your car and you can freshen up. That will give us some more opportunity to talk about Robu!

Bhaskar: But ma'm...

Jayati: There is no need to worry. There is a young boy on the boat who has been handling these relief operations deftly. He will distribute all the packets that you have brought and at the same time he will snap a few photos on his cell phone for your record. Will that be fine students?

Ranjan: Absolutely ma'm! We would also love to talk to you about artificial intelligence.

Bhaskar: You have already mesmerised them ma'm! I am not left with any role to play regarding decision making. (Bhaskar laughs. Others join.)

Jayati: So then, let's go.

[Change of scene. Everyone assembled at Jayati's quarter. Everyone has been served coffee and snacks.]

Jayati: Help yourselves students. This is not cold coffee. It is prepared to be drunk hot. (Laughs)

Bhaskar: Ma'm, you must have heard abbot emotion AI/

Jayati: I believe that I know as much as you do. But this thing is not known in artificial intelligence.

Antara: Emotion AI? Sounds very interesting.

Jayati: I do not want to sound academic but the MIT, I mean the Massachussets Institute of Technology defines it in this way...

Bhaskar: Allow me to complete that ma'm. Emotion AI is a subset of artificial intelligence that measures, understands, simulates, and reacts to human emotions. It's also known as affective computing, or artificial emotional intelligence.

Ranjan: That's excellent! Why are we not applying it to our Robu?

Bhaskar: Patient Ranjan! Let us not think of giant leaps right now. It will be better if we understand the implications of Emotion AI.

Jayati: Machines can listen to voice inflections and start to recognize when those inflections correlate with stress or anger. They can also analyze images and pick up subtleties in micro-expressions on humans' faces that might happen even too fast for a person to recognize.

Asmita: Someone or some group must have put this into use ma'm?

Jayati: One MIT professor has said that machines that can speak the language of emotions are going to have better, more effective interactions with us. It's great that we've made some progress; it's just something that wasn't an option 20 or 30 years ago, and now it's on the table.

Bhaskar: You know ma'm, one alumnus of MIT has formed a company that deals with Emotion AI. Call centres are among it's clients. The company's voice-analytics software helps call centre agents identify the moods of customers on the phone and adjust how they handle the conversation in real time.

Naveen: Sir, I remember one such news that I saw on television. It says that the MIT Media Lab has invented an AI-driven technology for mental health. It is a wearable device that monitors a person's heartbeat to tell whether they are experiencing something like stress, pain, or frustration. The monitor then releases a scent to help the wearer adjust to the negative emotion they're having at that moment.

Asmita: That's fascinating Naveen! It means that some day we will be able to integrate all these things into Robu's structure! It will easily understand our emotions and respond.

Bhaskar: Robu is trying to get active. See Asmita...

Asmita: Right Sir, it's trying to speak!

Robu: Work not finished. Relief work. Distribution. Work not finished.

Jayati: Am I dreaming Mr Bhaskar? Your robot is already showing signs of emotional understanding. It's expressing a sense of responsibility!

Bhaskar: I am also surprised!

Jayati: But the fact is that we cannot reward Robu with coffee or snacks. So in place of that we are going to have another round of coffee!

Antara: That is a fantastic idea ma'm! Let us call this round the Robu party!

[Everyone joins in laughter and the episode concludes with some gay music.]