

Episodes: 10
Natural Language Processing (NLP)

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Natural language processing (NLP) is a subfield of linguistics, computer science, and **artificial intelligence**. It is concerned with the interactions between computers and human **language**. In other words, it is to program computers to process and analyze large amounts of **natural language** data. The field of NLP involves making computers to perform useful tasks with the natural languages humans use. The input and output of an NLP system can be Speech and Written Text. Natural Language Processing is among the hottest topic in the field of data science. Some important application of NLP beside translation from one language to another are:-

Search Autocorrect and Autocomplete, Social Media Monitoring, Chatbots, Survey **Analysis**, Targeted Advertising, Hiring and Recruitment and many more.

Characters

1. Mrs. Shyamal (A Kannada woman of 60 yrs. of age)
2. Mrs. Shivani (About 55 yrs. Of age)
3. Dr. Kumar (58 yrs.)
3. Satishan (29 yrs.) & Anushka (27 yrs.), newly married couple
4. Rumba Humanoid Robo
5. Dr. Kumar (Mrs. Shivani's husband).

(Opening part of the Title Song)

Hello listeners! Welcome in this episode of Science Serial, ‘**Welcome to tomorrow**’ based on **Artificial Intelligence**. Popularly nick named ‘Aane Wala Kal’ in Hindi.

Music continue under the narration)

The theme of this episode is NLP that is, ‘Natural Language Processing’. You will be surprised to know that it is possible to interact with the computer that can understand the language spoken by human being that is you and me. Technically it is a complex process, but computer and data scientists make it possible.

Part of the music

(Scene of a middle class Maharashtrian family marriage, noise, dance & music etc.)

Shivani:- Thank God that marriage ceremonies happened smoothly. Now I felt relieved of all problems that were earlier circulating in my mind.

Dr.Kumar:- Tension, what tension? Be relieved. Do you remember the Hindi saying.....”Maan Changa te Kathothi Mein Ganga”(Laughing).

Shivani:- I agree with you. But tension always precedes before such act. Our daughter marriage is one of them.

Dr.Kumar:- Shivani, be relaxed. Our daughter is not an illiterate girl. She is an IITian and Gold Medallist of her batch.

Shivani:- That is fine but problems don't come with prior warning. The boy, I mean our Daamad/son in law is a Kannadiga. There is cultural gap. It was giving me trouble.

Dr.Kumar:- You forget our own marriage. I am from North and...and you are Mumbaikar. We have a forty years of happy married life. Am I, second to any Maharashtrian(Laughing).

Shivani:- Oh! You have diverted the subject. Anushka has to adjust in a new family with lots of cultural and language differences.

Dr.Kumar:- Shivani, you may be tired now. It is time to have some rest. Be relaxed, we can discuss all these in the morning. O.K. goodnight.

Shivani:- Good night and have sweet dreams(laughing).

(Change over Music)

Morning scene, some temple bell/Aazan effect from background, birds song, alarm etc.

Shivani:- Oh God! After one week I had a sound sleep. Mental tension of marriage and that of a daughter. Hello Dr. Kumar get up. It is 8 O'clock.

Dr. Kumar:- Good morning Shivani. You were murmuring something. We are blessed that all marriage ceremonies have been over without any hurdle.

Shivani:- Hurdle ! What hurdle? Just have a glimpse of the invitation card(Laughing).

Dr.kumar:- I don't understand. The card got printed by me and I know all dates and facts.

Mrs. Shivani:- You are still missing my point.

Kumar:- What point ? Have I done some mistake?

Shivani:- No...No.... Look here, the card is in my hands. The imprint of Lord Ganesh is on it and Lord Ganesh means, Vighan Harta(Laughing).

Kumar (Laughing):- Oh, I get your point.

Shivani:- In Maharashtra, during Ganesh Pooja the very same god is invited to bless with happiness, prosperity and peace.

Kumar:- Anushka was also taking full interest along with you during Ganesh Chaturthi.

Shivani:- But she will miss all these in Bangalore.

Kumar:- Why.... Bangalore is now a cosmopolitan city. The cyber city has been completely changed.

Shivani:- But our daughter may face this problem at Satishan home.

Kumar:- Don't worry. All problems have their own solution(Laughing).

Entry of Anushka and Satishan in the common drawing room, TV/Radio news or music in the background etc.

(In one voice):- Good morning mummygood morning dad!

Shivani & Dr.Kumar(in one voice) : Very good morning.

Dr.Kumar:- Now one chapter of your life is over and both of you are entering in the new phase.

Satishan:- I think this part of life is equally important.

Shivani:- Now you have to bear double responsibility.

Dr.Kumar:- You have to go through many ups and downs in life. But hope you will face all odds and even of life boldly.

Anushka:- I can guess this question is for Satishan(Laughing).

Satishan:- Anushka, don't worry. Not one lesson but three lessons. One from Papa, one from mom and the third is from your side(Laughing).

Dr.Kumar:- Anushka, it is tea time.

Anushka:- Papa... Let me prepare tea of your choice. After my job in Bangalore you might have missed the ginger flavoured.

Kumar:- Vow! We were missing that typical flavoured. Your mummy will be happy to see you in the kitchen.

Effect of cups/plates etc from kitchen

Anushka:- Hello everybody! Your tea is ready to enjoy with snacks.

Shivani:- Dear Satishan...Our daughter is perfect in all sort of work. She will be a perfect life partner.

Satishan:- Yes mom. I am lucky. It is blessing of God (Laughing).

Anushka:- Vow! So much buttering. Time will tell (Laughing).

Satishan:- Not buttering but facts.

Shivani:- Dr.Kumar, come on and take the responsibility to serve the tea (Laughing).

Dr.Kumar:- Why not? This is life time opportunity to serve our dearest one (Laughing).

(Effect of pouring of tea in cup)

Satishan:- Dad this is all your love and affection.

Shivani:- We are blessed to have such an affectionate son.

Dr.Kumar:- Anushka Beti....the flavour and colour say all story. Your preparation seemed to be super.

Shivani:- A typical preparation by Anushka. The toasts looks like French toast but taste is typical Marathi.

Anushka:- Mummy is my teacher as well as guide (Laughing).

Dr. Kumar:- Not mother (Laughing).

Kumar:- A mother is the first teacher and what she guides is the ,”Ram Baan” of life.

Satishan:- Papa! The factor of shyness has been left behind.

Kumar:- Vow! You have good knowledge of the North Indian culture.

Satishan:- My basic and primary education happened to be in Delhi. My parents stayed there for six years.

Kumar:- This is why we say unity in diversity which makes India.

Satishan:- But this unity will be strengthened when you will visit Karnataka.

Shivani:- Karnataka! Na...Baba... No knowledge of Kannad. It will be very difficult to communicate in Kannad.

Dr.Kumar:- Don't worry Shivani. Anushka and Satishan are their to interpret between you and Satishan's mother and other relatives (Laughing).

Anushka:- Mummy don't worry. Technology is there to help you.

Shivani:- You mean Technology! How can it solve language problem? I am confused.

Satishan:- Yes Mom...Anushka is right. You will not find any problem.

Shivani:- How can it be possible? Can you elaborate it little bit?

Satishan:- You might have heard the word Artificial Intelligence.

Dr. Kumar:- Yes, it is the future technology. Even we are adopting it in Medical Science to analyse medical reports.

Anushaka:- Vow, my doctor papa is aware of all these.

Shivani:- But you were talking about language.

Anushaka:- Mummy, Satishan is working in a new field known as Natural Language Processing(NLP). It is a technology used to aid computers to understand the human natural language.

Dr.Kumar:- But it is not an easy task teaching a machine to understand how human communicate?

Satishan:- That is right. But NLP technology will make it possible.

Anushka:- Mumma... You might have explored some features of your smart phone.

Shivani:- Yes, I try but get confused many times to operate them.

Satishan:- Siri is one of them. When we give command to Siri or ask some questions to Alexa or Google home, there is immediate response in voice form or in text format.

Shivani:- Oh, interesting.

Anushka:- Today there is a wide array of applications, where NLP is playing its role. Next time I shall arrange one virtual assistant for you. It will be papa,s choice. Alexa popularly known as Amazon Echo or the Google Home.

Shivani:- Let me have the choice (Laughing). Alexa ...no...no... Google Home. OK finally it will be Satishan choice.

Satishan:- Leave it on me. When you will be in our village, you will experience its utility.

Dr.Kumar:- Dear Satishan, we have little knowledge of this technology. Can you elaborate a little bit more?

Satishan:- That will be my honour. Papa, while operating your emails, you might have experienced the Email assistant, auto correction, grammatical help, spelling check, filtration of spam mails and so on.

Dr.Kumar:- And even auto completion of a sentence (Laughing).

Anushka:- Vow! My papa is great (Laughing). In search engines the things are predicted based on what we type. Here also the NLP technology is finishing the sentence or suggesting a suitable word.

Dr.Kumar:- Somewhere I read that e-commerce is also driven by AI. During COVID-19 problem your mummy forgot to visit market. She placed online orders and all essential items are delivered at her door step..... Balle....Balle..... for both (Laughing).

Shivani:- I like online shopping.

Dr.Kumar:- But our doctor fraternity is under pressure.

Anushka:- Papa, your fraternity is doing great job for society during COVID. No less than any warriors. We are proud off.

Dr.Kumar:- Thank you beti. This Natural Language Process will solve the language barrier, while your mummy is going to visit Satishan place.

Satishan:- No doubt that mummy will feel local in Kannad community.

Anushka:- Papa, while searching online, we are adding to the pool of customer data. This help to learn the habits and preferences of the users.

Satishan:- OK, here is this Sign all apps in my smart phone. Simply start it while communicating. See here.... The conversation has been converted into a text. See....see...here

Shivani:- Vow...wonderful! A complete text of our spoken words.

Dr.Kumar:- It can also prove very helpful in crime.

Satishan:- Yes, It can help to identify the motive of crimes.

Anushka:- I can guess that my mom will enjoy the company of Satishan's family. Papa our flight is at 3 O'clock and hardly few hours left.

Shivani:- We wish that you can stay with us for some more time but your busy schedule will not permit it.

Dr.Kumar:- It will be difficult for me to leave the hospital during Covid pandemic. After COVID your mummy will plan to visit.

Satishan:- We have already packed our luggage and it will be better to reach at the airport well before boarding time.

Dr.Kumar:- Even airlines have issued instructions for it. At airport they will also check your body temperature.

Satishan & Anushaka(one voice):- OK Papa , OK mammy...We had great time with you and will miss you. When convenient, let me know so that we can book your flight tickets.

Dr.Kumar:- Don't bother about tickets, I shall do that online. All the best and enjoy your married life. God bless you.

Satishan:- Bye mummy and bye papa....

Shivani:- Bye ...and have a safe journey.

Effect of taxi/car/ traffic etc

Anushaka:- Satishan, you take out luggage, I am going to pay the taxi fare through my wallet.

Satishan:- That will be fine. See the meter reading and pay accordingly.

Anushka:- Don't panic. Still we have enough time to check out.

Effect of airport/plane/ etc

Scene Change:- A typical South Indian Kannad family, background Carnatic Music/ Noise/ kitchen effects / birds chirping/singing in backyard etc.

Shyamali;- (In her Kannad tone):- Aaya... Satish. Ask Anushka Beta to come in the drawing room. She will definitely enjoy Carnatic music. Music that gives feeling of love and devotion.

Satishan:- Yes mummy. Even Anushka loves it very much.

Effects of footsteps

Anushka:- Good morning mummy. You called me.

Shyamali:- Good morning daughter. Are you fine? A new home among new people.

Anushka:- I am fine. This is beautiful place full of greenery and natural beauty. In Mumbai, it is very difficult to have such an ambience. Vow! Birds are singing in the courtyard. They are also enjoying the Carnatic Music. What a harmony between men and Nature!

Satishan:- The village surrounding is even more beautiful. You will find a river, many water ponds and a thick forest, grown and protected by the community. Our Panchayat is very progressive and the Sarpanch is young and dynamic. He is tech savvy and frequently consults me, how the Panchayat can be benefitted from the digital technology.

Anushka:- Vow! We need such grassroot workers, who can implement new schemes.

Shyamali:- Anushka Beti, when your parents are planning to visit this place? I shall be happy to meet your mummy.

Satishan:- Mummy, I contacted them yesterday. Anushka mom is reaching tomorrow in the evening.

Shyamali:- What do you mean by she? Both parents are not coming.

Anushka:- Mummy Ji, due to COVID-19, it is difficult for papa to spare time from her busy schedule. Only my mummy is coming to perform certain post marriage ceremonies common in Marathi families.

Shyamali:- Ceremonies!

Satishan:- Yes mummy. Anushka,s mother is religious lady and she wants that all ceremonies must be performed as per rituals and traditions.

Anushka:- Ceremonies just to get acquitted with each other. You know most of the family members didn't attend the marriage function in Mumbai.

Shyamali:- Oh... It was, difficult. Mumbai is too far away from here. Does Mrs. Shivani, I mean Anushka's mother understand Kannad?

Anushka:- No ...she don't know Kannad.

Shyamali:- Very difficult to know and talk to each other. This means that we shall be deaf and dumb to each other (Laughing).

Anushka:- Don't worry for that. Satishan have a solution for that.

Shyamali:- Solution! What solution?

Anushka:- Yes mummy. Satishan might have told about Google Home or the Amazon Alexa.

Shyamali:- Last time he told me to arrange one set for us. It will make easy to contact you through video /audio calls.

Anushka:- Yes , just give command to her, she will automatically call us. You can ask her any question, she will reply immediately. She can play music of your choice and can forecast the weather condition.

Satishan:- Yes mummy....here is your surprise. I just installed it to assist you. He is perfect to narrate stories or rhymes even in Kannad language.

Anushka:- Satishan has added one more feature to translate from one language to other and he gave him a new name Rumba.

Shyamali:- Interpreter and that too from Kannad to Marathi and vice -versa. Magic!

Satishan:- Mummy. You will not find any problem to interact with Anushka,s Mom. She is very kind and affectionate lady, just like you (Laughing).

Shyamali:- Vow! What I am seeing? Is it Anushka effect or something else (Laughing)?

Anushka:- No... It is not Anushka effect but cultural effect. The sentiments that have been imbibed in us by you.

Shyamali:- Very cultured girl. We are proud to have a daughter like you.

Satishan:- Mummy we both are planning to visit airport to receive Anushka,s mother early in the morning.

Shyamali:- That will be good. By the time you will be back, I can prepared some local dishes.

Scene change:- Road traffic, car horn, noise, airplanes sound etc.

Anushka:- Satishan, today I am going to drive the car. Let me feel the driving on rural roads.

Satishan:- But you don't know the route and sometimes you may have to drive on narrow road.

Anushka:- Oh come on dear! A tech fellow is saying so. We have GPS to guide and don't forget our Siri. I am going to put it on operation mode to assist through NLP (Laughing).

Satishan:- Intelligent girl (Laughing).

Anushka:- Have you any doubt(laughing). IITian topper of her batch. The car steer is in safe hands.

Sound effect of car starting and some rural background

Satishan:- OK...It is good. In the route, I can brief you about rural background. See there...the bullock cart. The farmers are going to their fields. This area is canal irrigated and farmers prefer to grow paddy.

Anushka:- Look on right side. I can guess, it is paddy crop. Am I right?

Satishan:- You are right IITian, I mean my sweet heart (Laughing).

Anushka:- OK. Time will tell (Laughing).

Satishan:- It is we to harmonise time for better relation. Gold is gold and will always remain gold (Laughing).

Anushka:- Hello dear gold...look...look... the road has been dug out by someone.

Satishan:- It is not broken. Some farmer is laying down water pipes from canal to his fields for irrigation. They don't wait otherwise crops will be damaged.

Anushka:- We are few kms away from the airport and plane is going to arrive soon.

Satishan:- What a perfect driving ? I mean..... Hindi filmo Mein kahate hai na...."Tumhare Jaisa Koi Nahi"(Laughing).

Anushka:- Let me take it straight to parking lot. In the meantime my mom may check out.

Mobile phone ringing

Anushka:- SeeThis is phone call from mummy. Oh, she may be waiting in the drive way. Hello mummy! Where are you? OK...OK... We are coming. Wait outside Exit No-5.

(On other side):- I am waiting outside the gate. I am fine and landed safely.

Satishan:- Anushka, there is no need to park car in the parking lot. Let me drive straight to the pick-up area. It will save our time and money (Laughing).

Anushka:- Kanjoos kahi ka(Laughing).

Satishan:- What...I don't understand.

Anushka:- You were talking of money and the saying fit on you (Laughing).

Satishan:- It is not saving but management of wealth and time. There is saying in North India.....What is that ?

Anushka:- You mean... 'Boond ...Boond kar ghada Bharna'.

Satishan:- Yes...yes... Look there mom is waiting.

Halting of car/ car window open/ background noise etc.#####

Anushka:- Hello Mummy! How are you?

Satishan:- **(In Kannad)** :- Good morning mom. Are you fine? The smile convey, the journey was fine. Give me the luggage. I can put it in the backspace/Digi.

Shivani:- I am fine. There was only fifty percent occupancy. The Air hostage was telling that it is all due to Corona restriction as per guidelines of the Ministry.

Effect of car windows/doors/car start/horn etc

Anushka:- Mummy.... You will enjoy the native place of Satishan. What a beautiful rural ambience? Even Satishan's mother is very eager to meet you. Both of you have to communicate in symbolic language (Laughing).

Shivani :- What do you mean? Earlier you told me that you have solution for language barrier.

Satishan:- Mummy don't worry. She is joking.

Shivani:- I understand Marathi and Hindi only and no knowledge of Kannad.

Anushka:- (Laughing) Satishan has installed one international translator cum interpreter. That will solve your problem.

Satishan:- Moreover, I am going to install one more app in your mobile phone. If you find any problem, you can use that application to translate from Kannad to Marathi or vice versa.

Anushka:- My mom is going digital very soon. No barrier and no digital divide. Mummy...see the beautiful rural background with thick plantation and paddy fields.

Shivani:- In Mumbai.... Only bricks and stone structures.....only concretes.

Car stop/door open/ children noise etc

Satishan:- Take care mummy. The steps are little bit high.

Shyamali:- (In typical Kannad tone)... Welcoome....welcoome...

Anushka:- Mummy this mean, you are welcome at our home.

Shivani:- Thank you very much. Sab theek.

Satishan:- Mummy... Anushka mother is saying Everything is fine.

Welcome of the guest by Shankh Dhawani

Anushka:- Mummy, It is tradition to welcome guests with Shankh Dhawani. People consider it poise and wish that god bless the guests with all happiness and blessing.

Shivani:- Vow! Great traditions.

Satishan:- This is our simple but elegant driving room. Please come this side.

Effect of chairs/table/TV/Radio etc

Shivani:- Carnatic music is playing on radio. The Radio set is very unique. I have seen such a model during my childhood.

Satishan:- Most of the Indians enjoy Carnatic Music. This is beauty of this music.

Anushka:- Mom...See that. His name is Rumba. He will assist you to interact with my mother in law. Rumba is very intelligent and can reply all your queries.

Shivani:- But I was told that Alexa can only answer in English.

Anushka:- You are right. But Satishan's IT company has designed one device that can translate and communicate in all Indian Regional languages. Very soon it will be in the open market.

Satishan:- Yes... It works on the principle of Natural Language Processing. Lots of quality data are pooled and through machine interface, these data are analysed to arrive on desired results.

Shivani:- Satishan, don't worry our vocal delivery will be very good (Laughing) provided your system understand and support it.

Satishan:- Mummy! You don't worry. We have our magical stick that is 'Jaadu Ka Cheerag, (Laughing). Our Jinn I mean Rumba will solve all the problem.

Mrs. Shivani: - (With surprise) Are you sure?

(Scene:- Mrs. Shyamal say something to Satishan in Kannad and asked what Mrs. Shivani is saying? Is she not comfortable with us?)

Shivani: - Siri will get it transcript on my smart phone. I am fine and feeling happy to see all these old traditions.

Effects of South Indian prayer/worship etc. from nearby temple

Satishan: - Rumba can act as interpreter between both of you. He can translate from Marathi to Kannad and from Kannad to Marathi.

Anushka: - Just see there. He is Rumba to solve the language problem.

Satishan:- Anushka please can you give command to Rumba.

Anushka:- Haath Kangan ko Arshi kaya? Hello Mr.Rumba, how are you?

Rumba: - I am fine..... thank you.... Welcome you all.

Shivani: - Sweet but typical voice. A voice that I heard in Ritik Roshan movie..... 'Koi Mil Gaya'

Rumba:- I am Rumba your host and I welcome you. Ha....haaa....haaa....(Typical laughing style)

Shyamali: - Sister, this is a voice machine, bought by my daughter Anushka.

Rumba: - I am not a machine. My name is Rumba. I understand and can speak all Indian languages. I can talk like you but can't feel what you can.....
(Laughing).....Hee....heee....hee....

Sound Effect from Alexa/Echo/Google Home etc.

Mrs. Shivani: - Thank you Mr. Rumba.

Rumba:- You are welcome. If any language problem tell me. I will solve it and you will enjoy my translation.

Shivani:- Vow, technology is advancing so fast, difficult to imagine. Satishan, is it designed by your company.

Anushka:- Mummy once I told you that Satishan is working on a project to design and develop a humanoid Robot.

Shyamali:- My son Satishan is very intelligent but Anushka is one step ahead.

Shivani:- Satishan, is it part of the Natural Language Processing that you told us in Mumbai.

Satishan:- Yes, it is working on that very principle.

Anushka:- Its script is python which provides an intuitive framework along with substantial building blocks, consistent interfaces and data structures.

Shivani: - Oh...Baba.... very difficult to understand. For me it is just like to beat the drum and all, ' Bhool..Bhulaiya'

Mrs. Shyamali: - Is there any problem?

Satishan: - Now it is turn of Mr. Rumba to solve the puzzle.

All are laughing

Anushka: - Hello Mr. Rumba!

Rumba: - Any help.

All are laughing

Anushka:- Yes Mr. Rumba. My question is for you. Can you explain what is meaning of 'Bhool Bhulai'

Rumba: - I can't reply right now. I am trying to find the right answer.

Satishan: - ANUSHKA.... For such perplex and complex questions, we have to adjust it on his new mode. O.K. Let me do that.

Sound Effects of technical voice/noise

Satishan: - Artificial Intelligence is a new cutting edge technology and in near future it will revolutionise the world.

Rumba: - Yes, what Satishan saying is true. My technology will revolutionise the way of human thinking as well as his way of acting.

Mrs. Shivani: -We can imagine but it is beyond my capacity to think and act. It is a simple game for you but really a magic for me and for Mrs. Shyamali.

Satishan: - Natural language processing is able to analyse, understand and generate human speech.

Shivani:- Satishan.... Natural mean a natural language that is native to the people.

Satishan:- Exactly, Kannada, Marathi, Telugu, Punjabi, Hindi etc. are examples of natural language. Similarly computers have their own artificial languages like SQL, Java, C, C++.

Anushka: - Through NLP a computer is able to listen, understand the meaning and finally respond to it by generating natural language.

Satishan:- The mechanism involves several complex steps. It has made easier to develop computers with NLP abilities.

Shyamal:- Vow....

Anushka:- NLP is important for different reasons to different people.

Satishan:- True. For researchers NLP is a laboratory. But question arise, who cares?

Anushka:- Google and others search engine are doing it.

Shivani:- Ask google one question, instantly there will be a bombardment of information (Laughter).

Anushka:- **Yes mom...**According to a Google report, in 2008 the web had one trillion pages. Today, it estimates the web at 30 trillion pages.

Satishan: - But with NLP, it is possible to perform certain tasks like Automated Speech and Automated Text Writing.

Anushka:- Our Rumba also work and involves NLP applications.

Rumba:- You are talking of me.

Anushka:- It is fine Mr. Rumba.

Shivani:- He is very sensitive to queries. Just like Google Search Engine(Laughing).

Shyamali:- I can't imagine all about this new technology.

Satishan: - When we type on mobile, we will see words suggestions based on what we type. It is natural language processing in action.

Shivani: - Vow.... It is so simple to understand NLP(Laughing). The technical funda is clear.

All are laughing

Anushka: - Text and unstructured data, comprises 70%-80% of the data that are available on computer networks. Natural language processing can be applied to characterize, interpret or understand the information content.

Shivani: - This means the future will be more diverse than what we expect?

Satishan: - Yes mummy, you are right.

Shivani:- A new field of marketing (Laughing)

Anushka:- Yes, yes market is expected to push around \$60 billion by 2025.

Shyamal - Vow! Needless to say, but we should keep our eyes open on Natural Language Processing. Am I right (Laughing)?

(In one voice): - Very true (Laughing).

Anushka: - Satishan, it will be good if you can elaborate on some common applications of NLP.

Satishan: - Google uses such services in its Gmail. Through the use of NLP it determines which emails are good and which are spam.

Mr. Rumba:- I can even analyses stock market data(Laughing).

Shivani: - Oh My God! Stock market analysis!

Anushka: - O.K.Mr. Rumba, are you listening me? What will be the weather of Delhi today?

Mr. Rumba: - You mean weather. It will be partially cloudy. The day highest temperature will be 43 degree Celsius and the lowest will be 18 degree.

Vow.... Great magic (In one voice)

Satishan: - Type a question in Google or asked Siri for directions. You will see this form of Natural language processing in action.

Shyamali: - How the search engine work? It is also no less than any magic.

Satishan: - The search engine also generates natural language in return to give us the answers.

Anushka: - It is very vast subject and may take days to explain and understand.

Satishan:- Yes....The most basic and well known application of NLP is Microsoft Word spell checking.

Anushka: - You can also take text analysis. Email filters are another important application of Natural language processing.

Satishan:- Call centres representatives engage with customers through this technology.

Anushka: - Google Translate applies machine translation technologies.

Shyamali:- What about our Rumba?

Satishan:- Our Rumba also used the same technology. With voice recognition via virtual assistants, like Alexa, Google's Home, Apple's Siri and Microsoft's Cortana respond to vocal language.

Shyamal & Shivani: - Oh children! Can't your this magic help humanity to fight the Corona?

Anushka:- Vow! A question of the century (laughing).

Satishan: - Yes Mom. Researchers are working on it. Recently they have developed a new app that uses artificial intelligence technology.

(In one voice):- Vow..... Hope our Scientists and Researchers will succeed in their project.

Shivani & Shyamal: - Now we understand why you are getting so fat salaries.

(Laughing)

In one voice: - It is all the magic of Artificial Intelligence and the role of Natural Language Processing.

Loud laughter

Closing part of the title song/Music