0:08

okay so

0:29

you

0:46

so today we will be talking on uh

0:52

attentive systems attentive media and assistant systems

0:57

for human use assistance systems are

1:03

increasingly becoming important in our

1:10

lives and with the with the increasing

1:20

popularity and use of artificial intelligence

1:31

that are helping us in our

1:36

all operations in education in

1:42

entertainment at home and school at work

1:49

so the intelligence

1:56

of these assistant

2:01

systems have great importance

2:06

i will start lecturing on this by giving an example

2:13

video of two minutes uh from

2:19

you can see that right i'm gonna start the video

2:28

from 1968 film named 2001 space odyssey apparently

2:43

2001 years earlier than

2:48

now people were traveling to mars and

2:54

now we are going to

3:00

see the english between system computer and the person

3:12

did any of you what

3:18

before

3:24

okay probably not uh hull nine thousand

3:33

is actually

3:55

so they made it up

4:01

let's watch this

4:16

how am i going to start

4:40

so

5:23

doors

5:39

sorry

6:05

hey

6:28

here

6:36

okay

6:58

oh

7:27

okay i think we are finished

7:55

m

8:00

so in this video uh you can search how 9000

8:07

on youtube and you can also i think you should

8:13

uh watch the film it's good for

8:19

uh understanding the notion of future in 1968

8:28

the machine disagrees with the astronauts

8:35

and decides to kill the astronauts on the mission to mars

8:44

because the machine has personality because it's so intelligent etc so

8:50

it doesn't obey to orders

8:57

the machine kills one astronaut and this is the remaining astronaut

9:02

trying to save his life eventually he was able to

9:10

shut down the computer in the later stages of the film

9:19

do you hear me guys yes

9:25

okay so you are not hull

9:34

yeah the idea is uh

9:40

a computer system which is designed as assistant

9:47

should work like a british butler british butler principle is very

9:53

interesting principle and culturally i think british people

9:59

are the most uh

10:06

widely recognized example in

10:13

having multiple levels of people

10:18

in society all also the indians

10:28

a rich person has an assistant at home

10:33

the person serves you knows who you are knows what you like know what you dislike knows your needs

10:41

does your appointments organizes meetings with or without that's important let me

10:48

mark

10:56

with or without your knowledge does finance work for you

11:02

organizes entertainment gives orange juice

11:08

if it is necessary even if you don't ask it

11:15

even if you don't ask

11:21

he brings

11:26

juice so in some sense he is master

11:33

in some sense in some other sense he is slave

11:42

one famous example of british butler in batman series is the butler of the batman

11:50

he organizes everything for the batman

11:56

but at the end he is the servant he is very capable

12:02

intelligent has key to everything but

12:08

still he obeys the orders of the master

12:15

as more explanation butter's job is to serve his master

12:22

if the master wants a drink the butter will have a tray ready with variety of drinks for the masters to choose

12:29

sometimes no choice because the butler thinks this is better

12:34

but there is encouraged to have a nice appearance that's interesting

12:42

but not in the same way that a businessman might wear a switch so

12:47

it shouldn't compete it shouldn't compete with the master

12:54

he has no ego unlike hull 9000

13:03

right yes yes

13:21

[Music]

13:32

is

13:40

so oops

13:46

answers in case i

13:56

this is exactly how software product as an assistant a gadget or any kind of technological device should treat its

14:03

users so it should be a servant

14:14

not master okay and i repeat the purpose of technology

14:22

is to enhance the quality of human life that's the general principle

14:27

better living spaces better eating and nutrition better enjoyment education entertainment

14:35

anything better is preferable so

14:41

any technology you introduce should have this

14:46

provide provided so today

14:52

we have a lot of devices around us many devices around us each of them

14:59

behaves like a pet awaiting our attention each of them

15:04

gives alarms notifications

15:11

dialog boxes each application requires dialog boxes to interact with

15:16

so any of them

15:21

can send a message when you are installing a mobile application

15:27

they try to send notifications to you because it has business value for the companies

15:35

but nobody thinks that whether you can live with hundreds of

15:40

notifications coming from your phone all the time at the end every five minutes

15:49

every five minutes we look

15:54

our phones

16:00

is that clear it's five minutes

16:06

good number maybe less than that

16:11

young young younger generations uh continuously hold their phone on their

16:18

hands

16:24

the problem is these devices don't monitor our attention

16:29

they don't get coordination they don't understand our

16:34

context if you are in for example toilet

16:42

or if i am in if i am giving a lecture like now my devices my applications

16:49

my phone doesn't understand fully that i am teaching i am in a meeting

16:56

there are ways but still we are not intelligent enough

17:01

each application and each device believes that it is the only thing that you interact with

17:08

the one of the key things is

17:16

of successful

17:24

product is to understand

17:30

you are not the only product that the consumer has if you are kitchen appliance maker

17:37

you should understand that your product is not only product in the kitchen if it is a mobile

17:44

application your application is not the only application there are other applications running

17:50

at the same time so user is interacting with all those

17:57

applications we are social creatures

18:05

so a good interaction in order to have good interaction

18:11

each side all parties each side should involve continuously monitor the

18:18

context of the other parties this is extremely interesting in distance education

18:30

for example i cannot monitor the status of merchant

18:36

assad arda usain emre etc

18:42

we have 68 69 people in the room

18:47

and i cannot monitor your status therefore

18:52

good social interaction is not possible i cannot

18:58

walk one of you walk through one of you and look at you interestingly

19:05

to see whether you are listening to me or not because your cameras are not on

19:13

so i cannot monitor your context

19:18

you could be in the kitchen you could be in a different environment

19:24

you could be in the school you could be on the bus same thing is for me too

19:32

therefore monitoring the context is

19:38

important second

19:44

intelligence

19:50

yeah to pay attention to user to person to the other party

19:59

in order to pay attention you need to be intelligent

20:04

for example cat has less attention probably than dogs

20:10

because dog is i think more intelligent socially more intelligent so he

20:16

keeps monitoring your face if you are if you don't like something

20:23

dog automatically recognizes that you didn't like it and starts barking

20:31

so in a good social interaction monitoring the other party

20:36

is critical you need to monitor

20:42

context of user where the user is also the context of discussion

20:47

sometimes people who are not listening to class

20:54

after 10 minutes into the class they ask

20:59

hojam can i ask a question yes

21:04

when is the midterm apparently context of discussion

21:13

wasn't monitored i was explaining something else and i i was expecting

21:20

a question related to the topic but suddenly the student asks about the exam so

21:28

that is an indication of not paying attention to what i was

21:33

saying

21:40

so has to be intelligent furthermore

21:46

as we talk we have developed skills for better

21:52

interaction in addition to language body position orientation posture

22:01

face movements hand movements eye movements head movements

22:07

for example if you want to talk you raise your hand

22:13

or in the meeting if you want to talk you

22:18

attempt little bit like this and

22:24

uh other parties will recognize that you want to say something and they set up

22:31

if you monitor each other all the time you don't have to interrupt

22:38

other parties other party will automatically recognize that you

22:44

want to say something and stops so those are based on

22:50

secondary information sources you can even monitor eye movements whether the person is

22:56

looking at you or something else or whether your heartbeat is

23:03

changing measure your

23:10

hands are pointing to something so it all

23:16

provide secondary information sources for the attentive attentive

23:23

intelligent machines when we are on

23:29

meeting table attention is distributed among the people

23:35

but if we are interacting with the machines like hull nun hull 9000 or multiple

23:42

computers that are intelligent like syria etc um

23:51

those devices should get

23:56

additional cues from

24:05

those information sources i recently have

24:12

an apple watch one of the things that you will do with

24:18

the apple watch is hold it up and ask questions so when you hold it up

24:25

ask question for example tell me what gatew is

24:31

and then it replies now it's turned off

24:38

so hand gestures allows

24:43

computer systems to understand certain things such as in order to

24:50

hang up the phone open up the phone point something

24:57

start discussion asking questions those can be connected to hand movements which

25:03

are generally natural to the user

25:11

we normally observe oops we normally observe a person continuously during conversation and use

25:17

physical and contextual cues for further actions and continuation that's interesting and keep this in mind

25:25

when designing the devices because in future you will be designing

25:31

mostly autonomous systems in individual systems that will act like

25:38

a person in industry 4.0

25:46

it's man machine

25:51

collaboration

25:56

so for industry 4.0 man machine collaboration

26:02

machines should communicate with the man or

26:08

woman man is genderless in that sense

26:15

machines will communicate with the men intelligently

26:21

as if they are people so that's why they should monitor

26:28

the context and secondary information sources

26:36

however some applications are not butlers

26:42

they are not british they could be conan

26:47

i think he is conan right

26:53

that's from the film um

27:01

many systems think that they are the only one they are arrogant

27:07

they always ask things from you they are rude they don't listen to you

27:13

it then feels like you work for them not they work for you

27:20

so you become the servant of the computer program then you don't like it

27:27

so for successful systems for best selling systems

27:34

devices should become butlers not the masters

27:44

we have new products around us uh siri started that and also google

27:51

started that those are assistants uh

27:57

helping people it also work in turkish

28:03

we have smart watches i recently got one smart watch for

28:10

certain purpose but it serves well i also tested huawei 1

28:17

it is also nice they support hand gestures

28:23

[Music] physiological measurements also they

28:29

have good assistance built in so that they can interact with you

28:34

and using this smart watches

28:43

you are less likely to interact with your phone that's what i feel

28:48

so once you get a smart watch your phone battery lasts longer that is what you feel

28:59

you don't check your messages because if a message comes you're always notified

29:08

this is google home so it sweats

29:13

we also have google home at home it's kind of interesting device

29:22

this is amazon alexa

29:28

this is a echo show with a screen and another

29:34

assistant a home assistant so i will have this is apple home kit

29:41

including siri these home devices also have interfaces you can also have

29:48

projects graduation projects done with these with the voice controls you can

29:55

control and program your house

30:00

so suddenly you will have a smart environment that follows you that knows you

30:07

that knows who you are then tracks what you do and then

30:12

tries to find

30:17

good things for you

30:23

in future we will be seeing these devices make shopping for you

30:29

ordering items for you because you will need it they will predict that you will need it

30:36

and they will order it for you they will order

30:44

t-shirts clothes shoes for you

30:52

okay they will buy shoes for you and you will like it because they will understand your liking

31:02

in a smart home this is the general approach

31:08

uh all the parameters in the home can be controlled and optimized for

31:16

better living and better environment purposes

31:24

as i said not everyone behaves like butlers

31:30

because are reasons because machines are either dumb

31:37

machines are not intelligent if the machine is not intelligent

31:43

unfortunately there is nothing to do but sometimes machine has intelligence

31:50

the programmer didn't care so this is important this can be fixed

31:56

first one has no solution second one has because you are going to write a good attentive

32:03

interface you are going to care what you do in programming then the application will

32:11

understand user much better okay

32:18

that is what we called as locus of control

32:25

when we are interacting with the system

32:30

we want to this is computer

32:36

this must be computer not the user so user must be here

32:42

controlling the operation so

32:47

locus of control means who is the boss during the interaction people like locus of control and new

32:54

systems well with it so you need to feel that

33:00

you have the mastery you are using the device

33:06

not the device is using you design your application design your

33:13

computer program in that way

33:19

when we develop an intelligent system intelligent assistant an intelligent assistant should behave like a butler

33:26

british butler not like a supervisor because we don't like supervisors

33:32

increased intelligence shouldn't mean that a decrease in obedience will occur

33:40

okay do we have it socially yes

33:46

actually even if the butler is intelligent

33:56

due to the ownership of the land

34:02

who is the landlord who has the most money

34:07

then you should be

34:12

obeying that person if you are working for the boss

34:17

even if you are more intelligent than your boss that is usually the case

34:25

so some workers

34:33

don't apply this and they talk from top

34:38

to their bosses and they get fired

34:44

around us in terms of competing devices we see more devices that tell us what to

34:50

do and we hate them even if they say please at the beginning

34:57

we don't like it because they are telling what you should do so we should design

35:03

intelligent systems so that they behave

35:08

in harmony with us in an obedient way so they should obey our orders

35:15

not give orders to us if they give orders to us such as please

35:21

button five please push button five they are telling us what to do

35:29

so it is not up to us to

35:35

push button five

35:40

that's what they are that's what system is telling us so we don't like it

35:48

the solution to british butler problem has

35:54

six dimensions this is my making up there are six dimensions to

35:59

british but the problem the first one is the information second one is attention third is intelligence

36:06

fourth is authority five is coordination and six is obedience

36:13

first they should have enough information

36:20

technically they should have the information available second they should pay attention what you are

36:27

doing at the particular time they should follow you

36:33

third they should be intelligent enough so that they can deduct

36:39

they can derive results from the information

36:46

they should have authority to make some decisions such as turning on and off certain

36:52

switches if the system is going to ask everything to the

36:57

uh if the system is going to ask everything to the user it makes no sense that it is not an

37:04

intelligent system it's not a butler butler works

37:10

by himself so it should have the authority

37:15

in an obedient way if there are other butlers there if

37:20

there are multiple butlers okay let me turn off my camera so that my sound comes better

37:28

if there are multiple butlers a coordination among them should be

37:33

provided should exist so that they can share information among themselves for

37:38

you if you are sick on butler can prevent other butler to

37:46

disturb you and ask something because you are sick so it's not proper time

37:52

and they decide what is proper what is not finally

37:58

obedience is so important and users should feel that if the system

38:04

is obedient system you are going to be friend with it otherwise you

38:09

don't like it psychologically you don't like it

38:17

there are two terms any questions by the way friends

38:26

there are two definitions attentive and effective computing attentive computing what's what is wrong with this

38:34

my font size has changed

38:40

i'm going to change it

38:51

okay attentive computing aims to regulate the

38:57

interaction through observation of human attention so it pays attention pay attention to me

39:05

kind of thing it it checks whether the person is

39:12

attending attend paying attention if you are not looking at the computer

39:17

if you are not holding it so computer knows that the person is not

39:24

paying attention to me then makes decisions

39:29

based on that rule effective computing improves interaction through sensing

39:37

emotions so it is one way one step further

39:49

effective computing is a very popular topic these days

39:58

uh to sense human emotions whether you like it whether you are frightened

40:04

you like it and you like it how much are you bored etc so

40:11

it could use heartbeat it could use phase temperature

40:16

it could use eye movements by blink rates blood pressure

40:22

blood sugar so try to sense human emotions from the

40:28

mouse movements from what you say so emotion sensing is a critical

40:34

issue and together i will call it as considerate computing

40:42

constant computing mean caring computing you you pay attention

40:49

and try to understand users ok

40:58

again there is a problem let me fix it

41:07

let me fix it okay then i fixed it

41:13

so when we have single attentive systems

41:18

um this is an interesting figure from our paper

41:24

with our doctoral student uh the computer presents certain things

41:29

to use there many many many things many messages and the output

41:35

is filtered through attentive interface and user

41:41

true observation through observation gives attention and

41:49

the computer watches the user this is the eye of the computer watches the user

41:55

and gets some attention information and user also gives some

42:04

feedback and then attentive interfaces picks

42:10

whatever is necessary to the computer so it kind it kind of

42:16

filters and monitors user

42:21

you may have several of them each of them

42:27

sometimes some of them does not each of them monitors

42:33

sees the user then true coordination among themselves

42:40

each of them is butler through coordination of themselves they take proper decisions they don't

42:47

shout together they are coordinated

42:52

we are seeing more and more coordination among different devices in the apple

42:58

world for example macbook iphone and apple watch

43:04

coordinates themselves so that when you are interacting with one of them

43:10

others remain silent they don't try to interrupt you because

43:16

you are interacting with one of them so the interaction is transferred to the

43:22

device that you are on so your attention is monitored to some sense

43:32

in the media systems smart

43:37

houses android tvs dlna systems

43:44

integration and they are getting together and they are

43:49

observing

43:56

in the new technology for example smart tvs

44:04

uh they are good in monitoring people monitoring people's faces monitoring

44:10

people's emotions so you can do a lot of nice things good

44:15

interaction applications with these smart living environments and

44:23

interaction through big screens they do observe us

44:30

so what can be done

44:35

we can use camera we can use coordination with others we can use eye tracking face tracking

44:42

infrared body tracking this is interesting because when you use

44:49

regular camera there are privacy issues people don't

44:54

like to be watched but when you use infrared systems you track heat

45:01

so the images you get does not contain regular people images they rather

45:09

are blurred images but you can detect whether the person is there or not or watching you

45:15

or where the person is so infrared systems are good for privacy

45:22

then you may have capacitive systems heartbeat detection respiratory detection body posture skin conductivity

45:29

all things can be monitored and passed to the system

45:35

then we can detect emotions just like the butler

45:42

butler knows your emotions through experience and through experience a successful

45:50

system should be able to combine long-term knowledge with immediate observation

45:56

this guy is old he is old enough so that a long-term

46:03

knowledge is present and short-term observation is combined with long-term knowledge

46:09

and decisions are made

46:16

therefore long-term user knowledge is combination of long is combined with the accumulated

46:22

observational information predefined user information extracted information from other sources

46:28

throughout the coordination then we can have successful systems

46:35

an attentive system therefore should be able to utilize large amount of information both in time and space about

46:41

the users continuous accumulation is also a must

46:47

okay then

46:53

the reason is the conclusion is not the reason conclusion is instant observation

46:59

of data is merging with the long-term knowledge

47:04

so short-term information observation data with long-term knowledge is combined

47:10

to generate a successful interaction

47:18

another film degree of customization this is

47:23

from the film brought to hong kong and these are the famous american

47:30

actors one of them is bob hop and the film is 1962.

47:36

at some point in the film uh they are sent to moon uh

47:42

and originally uh the ship was designed for monkeys

47:49

and the suddenly the monkeys escape and these two guys were running around

47:57

and the team in china a secret team in china in second world

48:04

war tried to after the second world war tried to

48:09

send them to moon for experiment and they call them we have we need two monkeys and they found these guys but

48:15

the machines were customized for the monkeys it was they were giving

48:21

bananas all the time so customization is important but you need

48:28

to customize the product and computer to the correct

48:34

person if you customize too much into an incorrect personality

48:42

then it's gonna fail like this and you can watch the film in this scene

48:50

by typing the road to hong kong 1962 from youtube

48:56

that was very interesting when technology

49:04

is used to make attentive systems it has to be inexpensive it has to be

49:09

low power unintuitive and ubiquitous ubiquitous means not visible

49:15

it should blend into the environment it should be automatic

49:20

like refrigerator refrigerator is a ubiquitous device watch is ubiquitous

49:25

device just you look at it and you understand it you don't have to interact with it too much

49:33

and with advances in computer vision ai

49:39

voice technologies variable computing body sensors data aggregation aggregation combining data from

49:46

different sources and big data

49:51

we have a lot of applications in our front waiting to be implemented so there will

49:59

be a lot of advancement in the coming years in attentive automated systems

50:06

just like people they are going to do certain things they

50:12

are going to drive for us they are going to shop for us they are going to clean the house

50:18

and cook the cooked dishes etc so everything will be

50:23

done through automated attentive systems and

50:28

artificial intelligence and big data plays a lot of important role in addition to

50:36

voice processing and sensing technologies

50:42

also the power is important low power they have to be low power because some of them are working with battery

50:50

when you make it when you make it

50:55

adoption becomes an issue

51:06

price availability of killer applications service providing through a big

51:14

service provider like telecom operators ease of use

51:22

correctly in the initial phase and observed benefit those define

51:29

uh popularity if the price is high if there are no clear applications for

51:35

the technology it will not become popular

51:41

market will not accept it so you need to find the killer application

51:47

a nice killer application for the technology to be sold

51:53

otherwise it will be an experiment

51:59

but if you make 10 experiments

52:05

two will make product

52:11

so that shouldn't stop us from doing ten experiments because if we do five

52:16

experiments we will get one product so

52:22

um we don't get two products we have to do a lot of research in order to

52:30

be able to get a sufficient number of products

52:35

the success rate in ibm labs is five percent

52:40

only five percent of the projects end up being a product

52:49

rest will be scrapped or left for future reference

52:56

i was talking about

53:04

alexa and here we have

53:10

a comic video funny video funny video about alexa

53:22

the new amazon echo has everyone asking alexa for help alyssa what time is it

53:28

what the hell is wrong with this blasted thing but the latest technology isn't always

53:35

easy to use for people of a certain age these kids bought me a busted machine again

53:42

that's why amazon partnered with aarp to present the new amazon echo silver the

53:48

only smart speaker device designed specifically to be used by the greatest generation it's super loud and responds

53:55

to any name even remotely close to alexa so they can find out the weather allegra

54:01

what is the weather outside it is 74 degrees and sunny it is 74 degrees and sunny where

54:08

outside what about it the temperature outside is 74 degrees and sunny i don't

54:14

know about that the latest in sports clarissa how many did old satchel strike out last

54:20

night satchel paige died in 1982. how many you get satchel paige is dead and

54:26

whitner died who did satchel paige

54:31

i don't know about that reading local news and pop culture bonita

54:36

what them boys up to across the street they are just playing they what now they are just playing you say they just

54:43

playing now yes they are just playing i don't know about that

54:48

compare it to smart devices like your thermostat alessandra turn the heat up the room is already 100 degrees are you

54:56

trying to kill me alize the new amazon echo silver plays all the music they loved when they were young

55:03

angela play black jazz playing uh jazz

55:09

[Music] it also has a quick scan feature to help

55:14

them find things emilia where did i put the phone the phone is in your right hand and it

55:22

has an uh-huh feature for long rambling stories so then i gave him five dollars and he said i only gave him one down

55:29

uh-huh i said i know i gave you a five uh-huh cause i only had a five and a one

55:34

on me uh-huh hey this is one dollar right here uh-huh so i mean you tell me who's crazy amazon echo silver get yours

55:42

today i said get yours today to order amazon okay did you like it

55:51

yes

55:58

okay so obviously this is for this was for fun

56:06

it wasn't real uh maybe you have seen that uh but it shows uh the degree of

56:13

interaction that we can have in future so

56:18

continuously monitoring and understanding the user context and user habits what user likes what user

56:24

dislikes is a good thing for good conversation

56:31

and for conversationally for conversational interfaces this is

56:36

essential second thing is when you have attentive

56:41

interfaces there is a big broader issue

56:47

what is big brother big brother is the government when you have smart watch and

56:52

the amazon echo or google home or siri installed

56:59

then it is possible that someone else may

57:04

listen to your conversation anytime so that issue

57:11

can be addressed with a good government when you are sure that the government is

57:17

not going to do any harm and if the company is listening to you

57:24

for certain reason and the government can go after the company then

57:32

you trust otherwise in the countries

57:37

in the developing countries where the governments are not as robust as it should be

57:46

people don't trust these intelligence systems because intelligence systems

57:51

may exploit those users so that should be

57:56

clearly defined in the agreements

58:03

in terms of authority

58:09

i should repeat that the user should have the authority

58:18

over the device and

58:23

users should also feel the authority not only have the authority should feel the authority

58:32

and finally

58:38

these systems should be compatible to other machines other devices such as when you have a

58:44

tv tv should be compatible with the google home and google home should be compatible with the siri

58:51

so there should be interoperability standards unfortunately big players like google apple amazon

59:00

they develop their own standards and once you

59:05

buy one company's device and that those will

59:11

be incompatible with the other devices so standards

59:18

should be come into play and must be backed by big players

59:25

modern attentive systems should be highly interpretable through interoperable through sharing user data

59:32

and they don't have to be same brand which is which i

59:37

give big importance today we are not there yet

59:43

mobile phones tablets media players tv sets computers kitchen house appliances house itself automobile work tests they

59:49

should all talk to each other meaningfully

59:55

it's a that it's not an easy job

1:00:00

and to accomplish this

1:00:06

there must be a framework library media library for this cooperation

1:00:13

pro it should provide fundamental principles that i was talking and

1:00:19

it should provide interoperability and service standards it should indicate the parameter space

1:00:25

and it should standardize communication among different brands

1:00:31

when my phone rings my tv should mute

1:00:36

and buffer the video if i am alone in the room my student is calling my phone should

1:00:42

ask the student to call later after the film all by itself without asking me

1:00:55

so without asking me is interesting there are there are works that classify that

1:01:02

classify emails for example unwanted emails the simple form is junk mail

1:01:08

filter but classifying males for work for student work for

1:01:15

research for family it's an interesting task classification

1:01:21

of the email exchanges classification of discussions or

1:01:27

your phones can be answered by an agent by an artificial intelligence agent

1:01:33

first the artificial intelligence agent may ask why are you calling and the

1:01:39

art the other artificial intelligence says we have an

1:01:46

offer for the internet service and my agent may reply no we don't want

1:01:53

it so all by itself okay

1:01:59

because my agent will know what i want and i think i am done at this point

1:02:08

for today uh this is an interesting slide

1:02:14

and it shows how television benefits your children in the early years

1:02:21

it was an education device obviously it is it's an educational

1:02:27

educational tool but when you overuse it

1:02:33

unfortunately children are not watching these

1:02:40

good things anymore all the children all the channels for

1:02:45

the children are showing cartoons now

1:02:52

no interaction and no good content okay so this is the end of the attentive

1:03:02

assistant systems presentation let me see your

1:03:09

ideas so what do you think

1:03:25

you