VOTE CARD

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VOTE CARD

DIGITAL EXTENDED REALITY

This technology family includes innovations which extend the reality through digital means.

It changes how people connect with each other, how they interact with their surroundings and creates intuitive interactions with virtual realities.

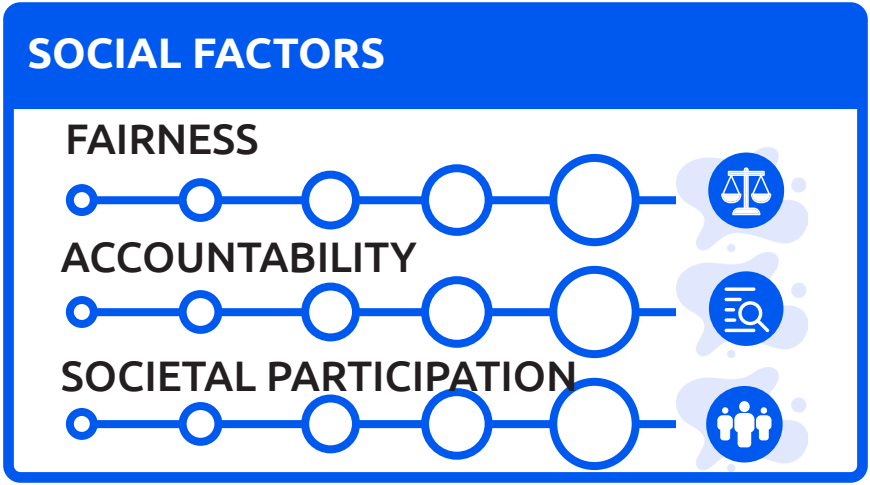
SOCIAL FACTORS

FAIRNESS

ACCOUNTABILITY

SOCIETAL PARTICIPATION

SOCIAL FACTORS




SOCIAL FACTORS

DATA CONTROL

ACCOUNTABILITY

SOCIETAL PARTICIPATION

COUNCIL RESPONSE CARD

TECH AGE CARD ID:

ISSUE TO SOLVE:

ETHICS PROPOSITION:

COUNCIL RESPONSE CARD

TECH AGE CARD ID:

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COUNCIL RESPONSE CARD

TECH AGE CARD ID:

ISSUE TO SOLVE:

ETHICS PROPOSITION:

TECH FAMILY

VOTE CARD

VOTE CARD

WORLD CARD

HARD

WORLD CARD

EASY

WORLD CARD

NORMAL

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

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COUNCIL RESPONSE CARD

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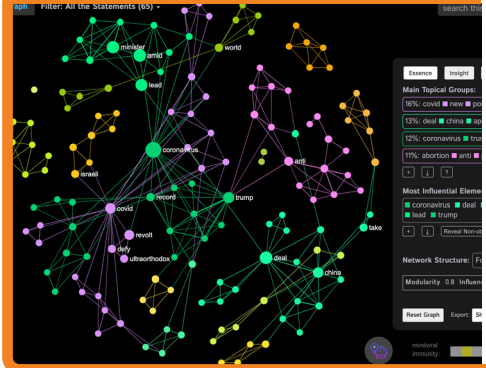
CHATBOTS

Chatbots use NLP techniques to interact with users, either orally or in writing. They already provide a wide array of services in customer support or via voice assistants.

AFFECTIVE COMPUTING

NLP contributes to making it possible for devices to recognise, simulate and respond to human emotions. Interacting with these devices can influence what people think or believe. This can encourage people to change their behaviour, without forcing them.

TEXT GENERATION & ANALYSIS



The availability of big datasets of original text and increasingly powerful ways for programmes to learn means that applications can generate text at a level close to humans. It is also possible to analyse text to reveal the sentiments or opinions of people who wrote it.

EDUCATION

NLP can assist teachers to support students' learning. Since not all students understand and learn in the same way, teaching can be personalised to help them learn in the best way.

BENEFIT

Unlimited possibility to repeat instructions

ETHICAL CHALLENGE

Collection, storage and use of sensitive information

‘PEOPLE’ REPLICAS

Digital replicas can imitate the speech and language of deceased or living persons. These can be famous authors and philosophers, but also deceased family or friends.

BENEFIT

Alleviating grief and offering the illusion of presence

ETHICAL CHALLENGE

Damage to people’s reputation or dignity

TRANSLATION

Translation from one language to another can happen without human involvement, even in simultaneous and natural conversations.

BENEFIT

Facilitating communication between a large number of people

ETHICAL CHALLENGE

Threat to the livelihood of professional translators

HEALTH

NLP is used to make diagnoses, recommend treatments, and conduct follow-up interviews. "Virtual" doctors and nurses help to monitor patients.

BENEFITS
Talking to an NLP device without feeling judged

ETHICAL CHALLENGE
Difficult information disclosed without support

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

TECH AGE 1

NLP - I - 1

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD


CHATBOTS

TECH AGE 2

NLP - II - 1

TECH AGE 1

NLP - I - 3

TECH AGE 1

NLP - I - 2


AFFECTIVE COMPUTING
CHATBOTS

TECH AGE 2

NLP - II - 4


TEXT ANALYSIS & GENERATION

TECH AGE 2

NLP - II - 3

AFFECTIVE COMPUTING

TECH AGE 2

NLP - II - 2

SOCIAL MEDIA

Virtual influencers are increasingly present on social networks. They behave like human users, sharing messages and attracting new followers.

BENEFIT

Messages against racism, sexism and violence

ETHICAL CHALLENGE

Risk of manipulating users and misinformation

WORKPLACE

HR uses NLP to analyse CVs and make decisions about hiring. In the workplace, it is used to assign tasks, monitor progress and remind staff of rules and norms.

BENEFIT

Easy to share information and optimise workload

ETHICAL CHALLENGE

Opportunities allocated according to biases

LEGAL ADVICE

Lawyers use NLP applications to process client data and conduct legal interviews. Text analysis can be used to handle laws, regulations and factual data.

BENEFITS

Overcoming faults like error or subjective views

ETHICAL CHALLENGE

Consequences of wrong predictions

JOURNALISM

NLP can be used to create media content. Applications can produce text on their own or generate samples for a human to select.

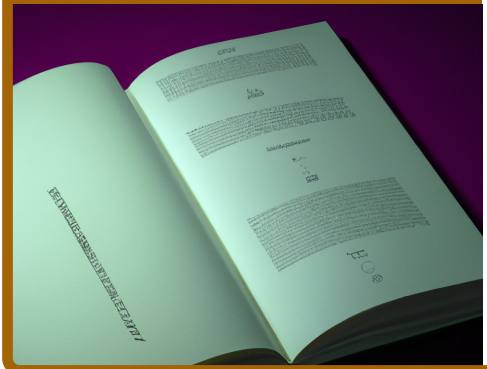
BENEFITS

Content available on every subject and place

ETHICAL CHALLENGE

Easy for readers to find only opinions that resonate with their own

ARTISTIC WORKS



NLP can be used to generate creative or poetic text, usually by relying on existing creative work. Applications can imitate the style of some classic authors.

BENEFITS

Users produce creative outputs with little or no effort

ETHICAL CHALLENGE

A threat to human works and creativity

When can a chatbot reveal a private conversation?

It is expected that NLP applications would not share information from users' private conversations with third parties. However, exceptions can be made for situations such as cyber-bullying, illegal activities, or other kinds of threats.

PRIVACY

How can we make sure the dignity of living or deceased people is protected?

NLP applications make it possible to capture personality traits of a deceased or living person. Past conversations are used to generate new phrases that the person being imitated has never said, in ways that can do damage to their reputation and dignity.

DIGNITY

How can NLP be adapted for a particular audience, culture, or dialect?

Exchanges using natural language are expected to respect the values of the culture in which they take place. NLP applications, however, do not understand meaning. Depending on the dataset available for a given language, NLP can perform better or worse.

RESPECT OF CULTURAL DIFFERENCES

How can we make sure that NLP applications remain secure?

There are security risks linked to the technology behind NLP applications. For example, malicious attacks can damage the application or extract any sensitive information that might have been provided to train the application.

SECURITY

How can we make sure that NLP applications do not insult or humiliate humans?

Given that “toxic” language, such as insults and threats, is part of the data chatbots use to train and learn, they might themselves respond in a “toxic” manner to users. Nevertheless, “toxic speech” differs between individuals and social groups, and depending on the context.

DECENCY

How can bias be avoided when using NLP?

The presence of biases in the behaviour of chatbots can be a major source of discrimination. As a result, one person could be treated less favourably than others with regard to age, sex, gender, or skin colour, when applying for a job, a loan or housing.

AVOIDING BIAS

Who should be responsible when NLP applications malfunction?

NLP applications can behave in a way that is considered morally objectionable or wrong: they can lie, mislead, hurt, misinform or insult. However digital agents are not capable of assuming responsibility when their actions have consequences on people.

RESPONSIBILITY

CHATBOTS
TEXT ANALYSIS & GENERATION

TECH AGE 2

NLP - II - 7

CHATBOTS
TEXT ANALYSIS & GENERATION

TECH AGE 2

NLP - II - 6


AFFECTIVE COMPUTING
CHATBOTS

TECH AGE 2

NLP - II - 5

EDUCATION

TECH AGE 3

NLP - III - 1


AFFECTIVE COMPUTING
TEXT ANALYSIS & GENERATION

TECH AGE 2

NLP - II - 9

AFFECTIVE COMPUTING
TEXT ANALYSIS & GENERATION

TECH AGE 2

NLP - II - 8

HEALTH

TECH AGE 3

NLP - III - 4

TRANSLATION

TECH AGE 3

NLP - III - 3

‘PEOPLE’ REPLICAS

TECH AGE 3

NLP - III - 2

LEGAL ADVICE

TECH AGE 3

NLP - III - 7

WORKPLACE

TECH AGE 3

NLP - III - 6

SOCIAL MEDIA

TECH AGE 3

NLP - III - 5

How can we deal with applications designed to trigger a particular response?

Some NLP applications influence a user's behaviour in a way some might consider positive for the user. This might pose a problem when deception or manipulation are used to do so, if the methods used are not clearly presented to the users.

NON-MANIPULATION

How can we make sure that people remain aware that they are interacting with NLP applications?

People may not understand that they are interacting with NLP applications, especially if the messages generated are made to look like they are coming from humans. People might want to attribute human qualities to chatbots, like trust and responsibility.

AUTONOMY

EDUCATION

‘PEOPLE’ REPLICAS

TRANSLATION

HEALTH

SOCIAL MEDIA

WORKPLACE

LEGAL ADVICE

JOURNALISM

ARTISTIC WORKS

PRIVACY	⚖	🔍
DIGNITY	👥	👥
RESPECT OF CULTURAL DIFFERENCES	⚖	👥
SECURITY	🔍	🔍
DECENCY	⚖	🔍
AVOIDING BIAS	⚖	⚖
RESPONSIBILITY	🔍	⚖
NON-MANIPULATION	🔍	👥
AUTONOMY	👥	👥

TEXT
ANALYSIS
&
GENERATION

AFFECTIVE
COMPUTING

CHATBOTS

TURN SUMMARY

I. PLAYER ROUND

(1. TECHNOLOGY FAMILY)

2. TECH AGE EVOLUTION

3. OPEN DEBATE

4. CITIZEN WORLD COUNCIL DECISION

II. WORLD ROUND

1. IMPACTS

2. ETHICAL ISSUES

3. CITIZEN WOLRD COUNCIL RESPONSE

4. TECHNOLOGY TREE

5. END OF GAME?

CREDITS

THIS GAME WAS DEVELOPED BY THE EU-FUNDED PROJECT TECHETHOS, BASED ON NEW RESEARCH CARRIED OUT BY ITS PARTNERS.

FOR MORE INFORMATION, VISIT:
WWW.TECHETHOS.EU
OR MEET US ON SOCIAL MEDIA:

@TECHETHOSEU

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COUNCIL RESPONSE CARD

TECH AGE CARD ID:

ISSUE TO SOLVE:

ETHICS PROPOSITION:

IMPACT CARD

AGE

2

ARTISTIC WORKS

TECH AGE 3

NLP - III - 9


JOURNALISM

TECH AGE 3

NLP - III - 8

TURN CARD

IMPACT CARD

AGE

1

IMPACT CARD

AGE

3

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

CREDITS

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD

COUNCIL RESPONSE CARD