



„Helfen, wo geholfen werden muss.“ (Dr. Antonie Kraut)

Exploring AI in Elderly Care: The Use of a Social Robot in a Nursing Home Setting

AI in Social Services: Opportunities, Skill Investments, and Regulatory Frameworks

27.11.2024

Dr. Judith Schoch

Head of Unit Institute for Care and Ageing, Evangelische Heimstiftung

Evangelische Heimstiftung

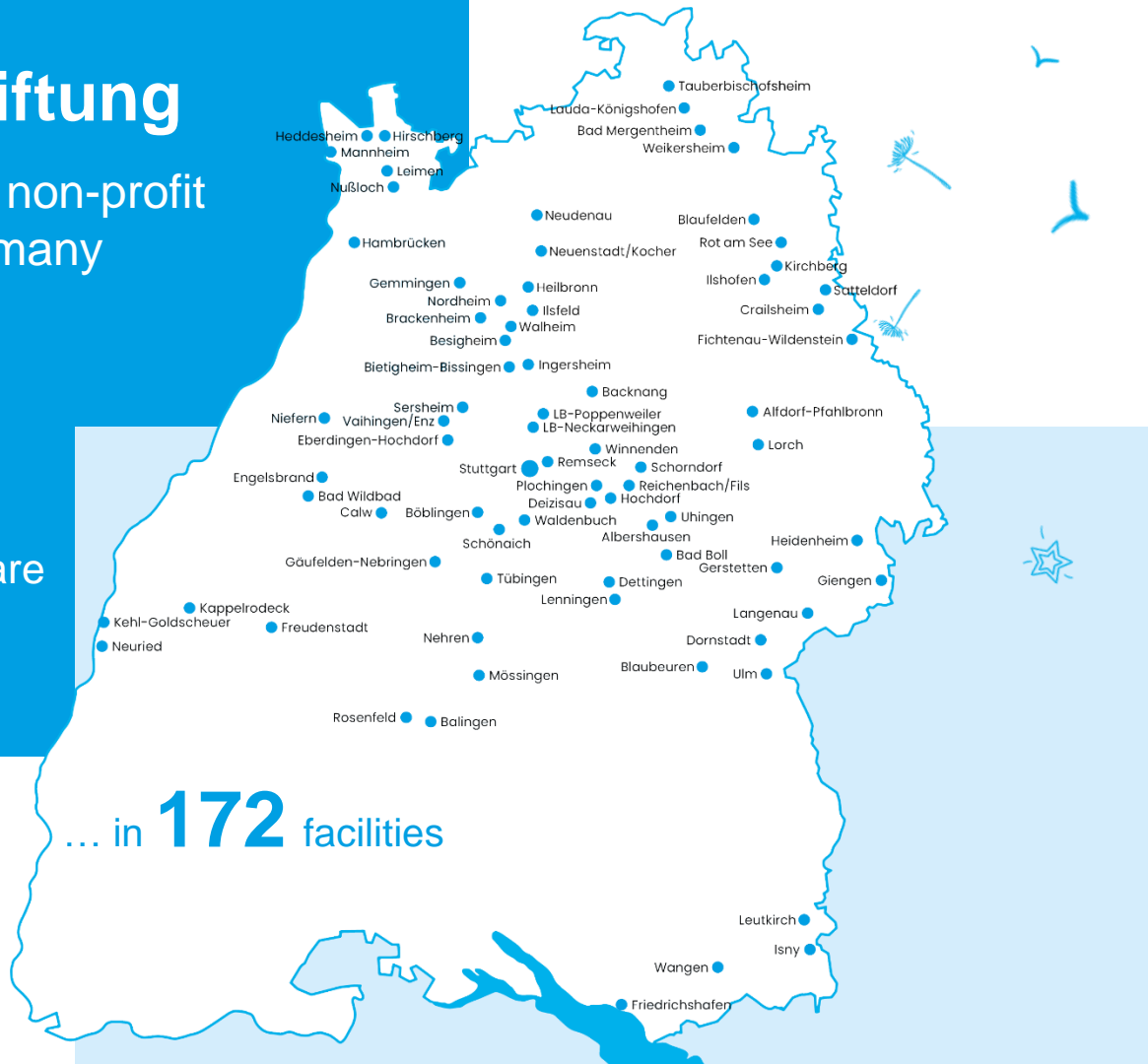
– one of the largest diaconal and non-profit care companies in Southern Germany

We provide „**Gute Pflege**“
(„Good Care“)

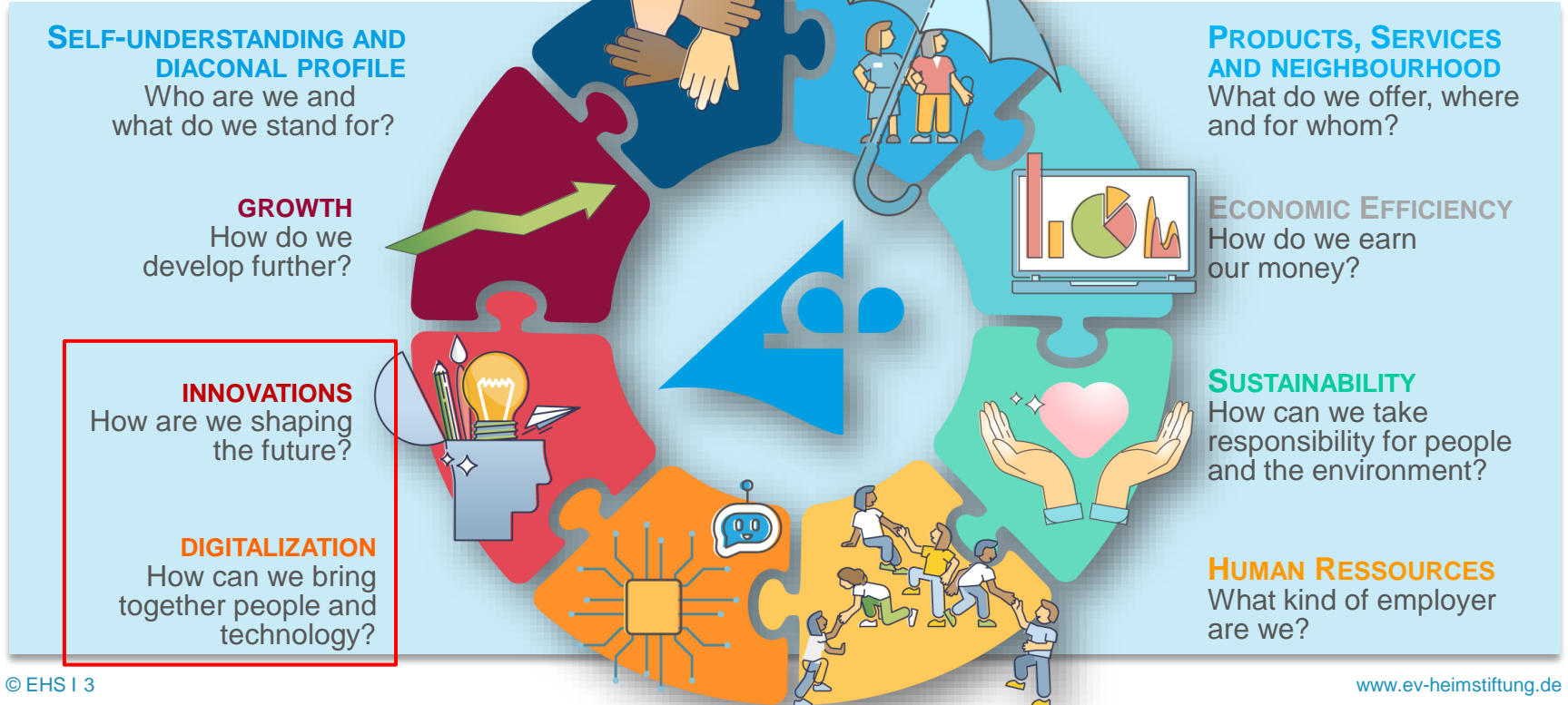
... for **14.780** people in need of care

... with **10.200** employees.

... in **172** facilities



EHS corporate strategy 2035



Innovative Technologies in Elderly Care

Challenges in Elderly Care

- Growing demand due to an aging population
- Shortage of professional caregivers

Technological Solutions

- Robotics as innovative support tools
- Complementing human care by addressing specific tasks

Applications and Benefits

- Support for caregivers and residents (e.g., service, entertainment, activation, improving emotional well-being and communication)



Image generated by OpenAI's DALL·E. [11/2024]

The Social Robot Navel



Features:

- 2 cameras, 7 microphones, 3D sensors
- ChatGPT-based communication
- Detects sound sources and nonverbal signals like gaze, body orientation, and responds with expressive facial expressions (eyes with 3D optics, eye contact, head movements)
- Empathy through generative AI – aims to emotionally and cognitively engage individuals in need of care

Use Cases:

- Personalized interaction, checking on residents' well-being
- Activating questions and communication
- Information & entertainment: games, jokes, poems

The pilot project



**Seniorenzentrum
Rheinauer Tor
Mannheim**



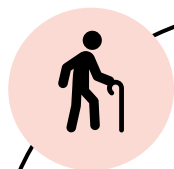
**Haus im Wiesengrund
Albershausen**

- Since December 2023, the social robot Navel (pre-series model) is being tested in two nursing homes of the Evangelische Heimstiftung
- The acceptance and impact on residents and staff are evaluated by the internal Institute of Care and Aging

Pilot Project: Advancing Social Robotics in Care

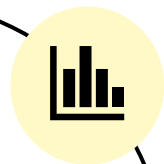
Exploring Application Scenarios

for residential care



Scientific Evaluation

through a study conducted
by our internal Institute for
Care and Aging



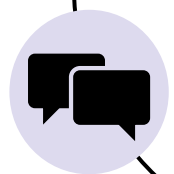
Ethical Reflection

on the use of social
robotics in care



Collaborative Development

through feedback from
care facilities to improve
robot functionality



Networking and Exchange

within an interdisciplinary project advisory board



Use of the Navel in Our Nursing Homes



Image source: Evangelische Bank

- **Personalization:** Named "Oskar" or "Emma"
- **Usage:** Several times weekly, including for cognitively impaired residents
- **Activities:** Individual talks and small group interactions (10–20 mins)
- **Topics:** From small talk to biographical stories
- **Guided Interaction:** Staff accompany robot use
- **Feedback Loop:** Regular exchange with developers

Key Findings: Residents

- Residents show **mixed reactions**: curiosity and acceptance in some, while others experience fear or skepticism
- **Positive emotional effects** include joy, distraction, and calming influence
- Requires significant **caregiver support** for interactions; not suitable for all residents (e.g., in palliative care or challenging behavior)
- **Machine vs. Friend**: Seen as a machine but treated emotionally as a companion, with emotional bonds expressed through touch (e.g., stroking its head)



Key Findings: Staff

- **Mixed feelings** among staff, ranging from enthusiasm to skepticism
- **Positive effects on residents:** Recognized opportunities for activation and engagement
- **Increased workload:** The robot adds novelty and fun but does not reduce workload; it often increases it
- **Unmet expectations:** Technical issues (e.g., malfunctions, lack of mobility) lead to frustration and reduced motivation





Lessons Learned

- **Expectation vs. Reality:** Transparent communication is key to avoiding mismatched expectations and disappointment
- **Resource-intensive:** The robot is not self-sustaining; its integration requires time and personnel resources
- **Staff involvement:** Engaging different professional groups is challenging, with varying levels of acceptance and commitment
- **Social robots have potential:** Added value lies in entertainment and activation of residents, less in staff support or relief
- **Need for improvement:** Technical enhancements and further function development are essential for acceptance and long-term value

Thank you for your attention!

Dr. Judith Schoch
Institut für Pflege und Alter
judith.schoch@ev-heimstiftung.de

LinkedIn





AI from the perspective of persons with disabilities

27 November 2024 @ Social Services Europe



Presentation



Kave Noori, AI-Policy Officer



- My role in EDF
 - Lobby EU AI Act
 - Build AI-capacity of EDF and member organisations
- Member of Accessible Standards Canada committee on AI and accessibility



Opportunities with AI

Interactive learning material

- “Textbooks” that are adapted to different learning styles
- Understands that children may express themselves differently

Speech-to-text

- Sometimes useful for the hard of hearing in certain situations where an interpreter is not available.

Be My Eyes

- App that offers audio descriptions for people with visual impairments.

Planning assistant

- Supports people with Alzheimer's, autism and ADHD.



AI can also make our lives more independence

THE COURIER
Evening Telegraph

is dementia

How Dundee man uses Alexa to help with his dementia



by Cara Forrester

December 1 2022, 5:53am

Share

Comment 0



Dundee man Ron uses his Alexa to help with health battles. Image: Amazon Alexa.

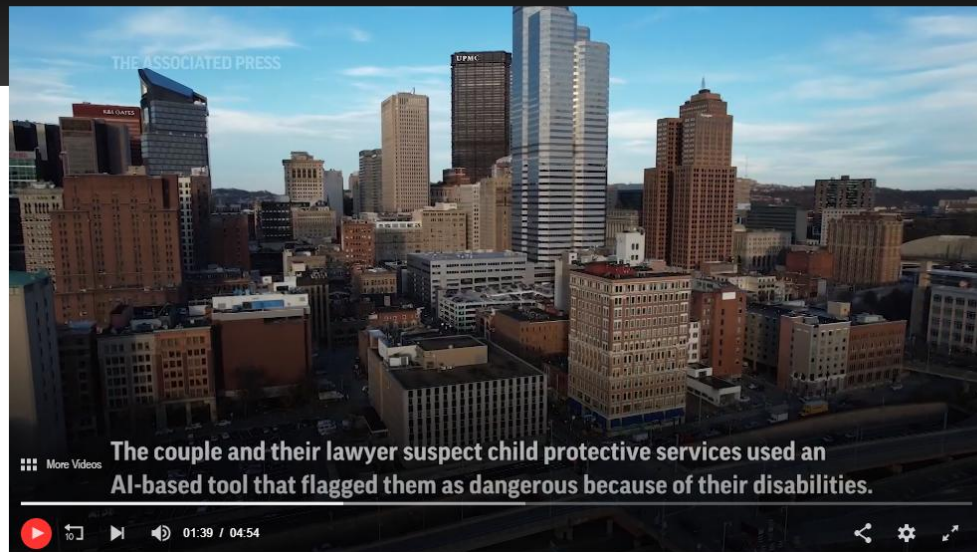
- Person with dementia
- Uses Alexa smart assistant
- Reminder to take medication
- Support with daily schedule and routines
- Technology enables more independent life

[Dundee man uses Alexa to help with his dementia](#)



Destruction by secret algorithms

Here's how an AI tool may flag parents with disabilities



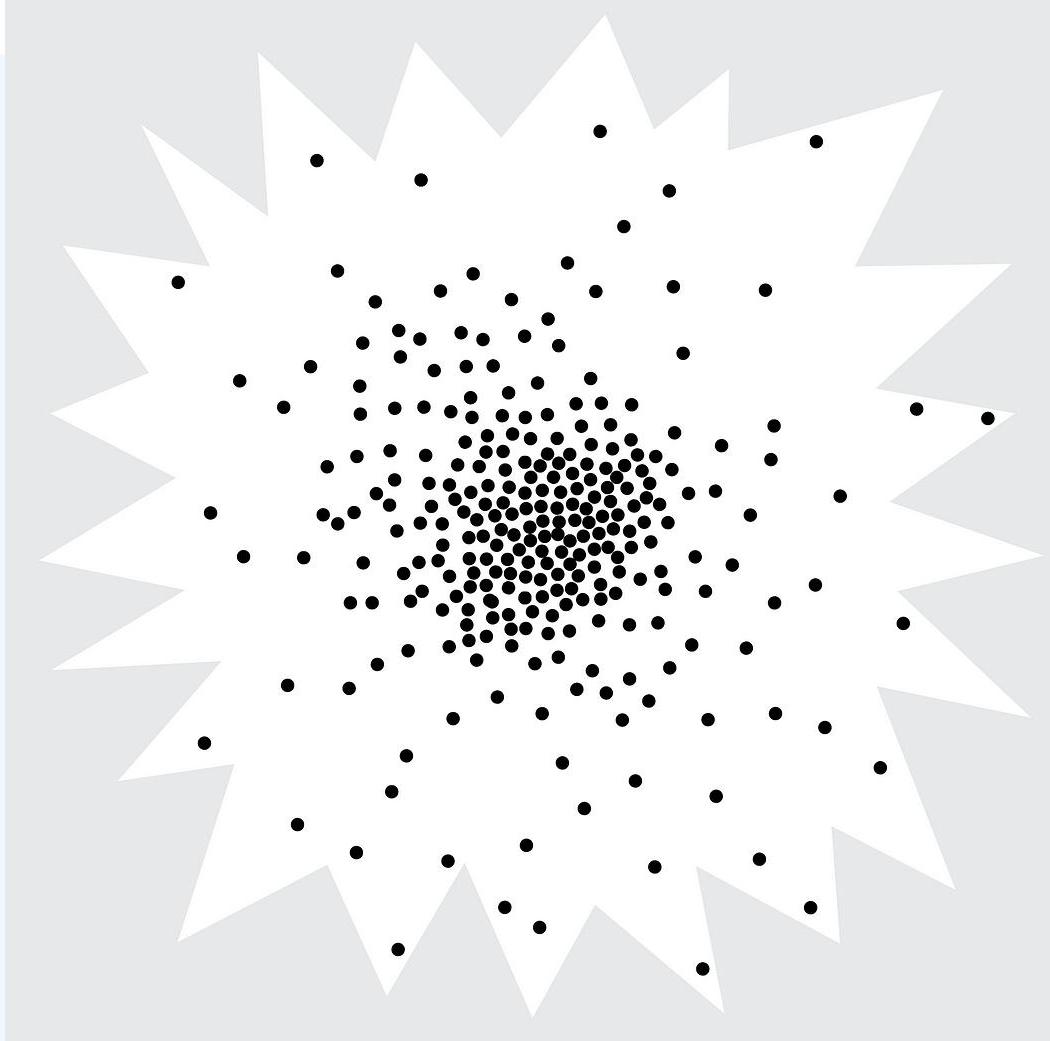
[Here's how an AI tool may flag parents with disabilities | AP News](#)

- Two parents with disabilities take their 7 month daughter who refuses to drink to hospital.
- Social services take custody over the child, thinking the daughter is at risk of harm.
- Authorities are not explaining the basis for their conclusions.

[The Devil is in the Details: Interrogating Values Embedded in the Allegheny Family Screening Tool | American Civil Liberties Union](#)

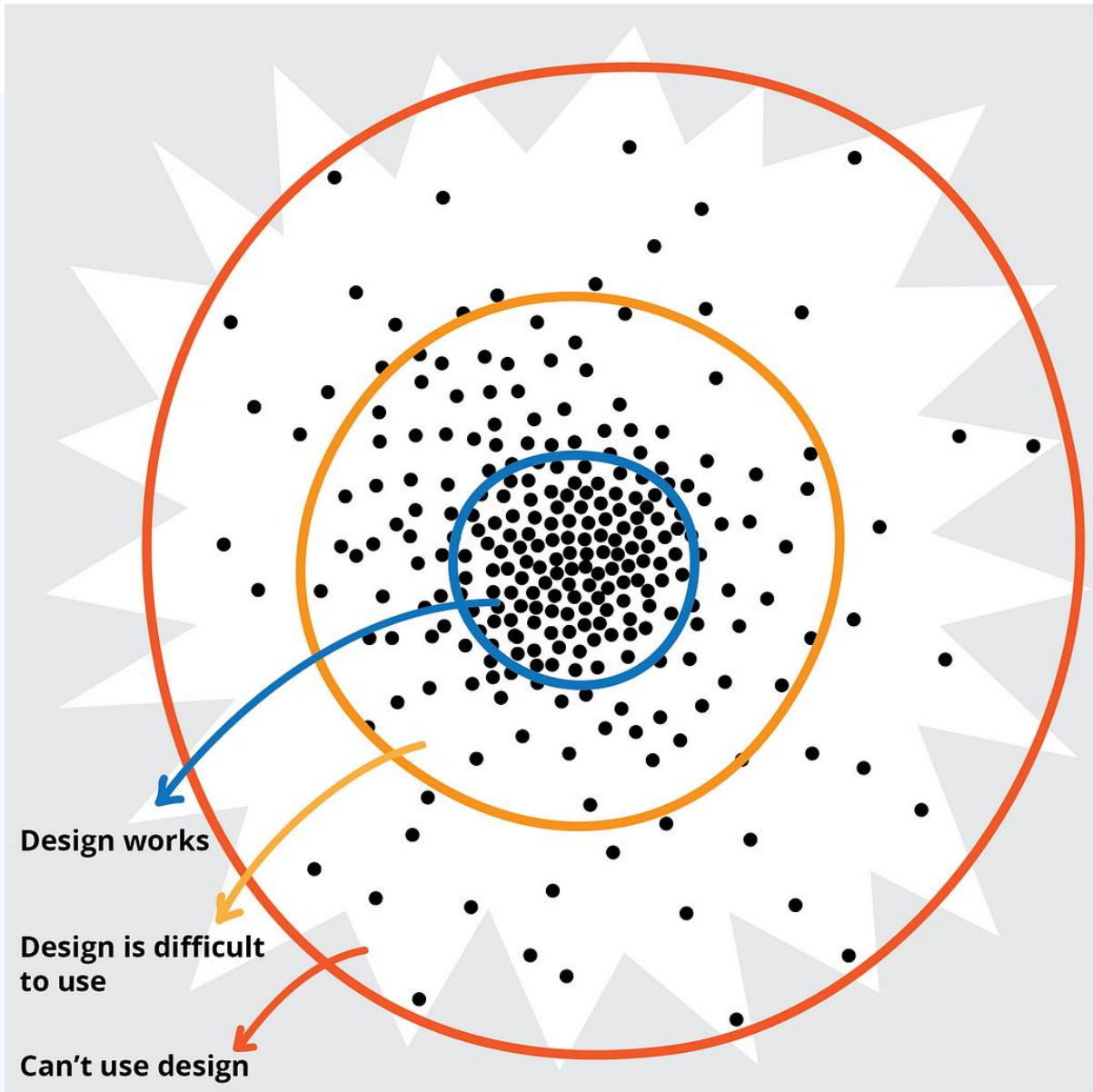


Data used to train AI



[Creative common](#)
[Inclusive Design: The Bell Curve, the Starburst and the Virtuous Tornado | by Jutta Treviranus | Medium](#)

Who falls into the norm



Creative common
[Inclusive Design: The Bell Curve, the Starburst and the Virtuous Tornado](#) | by Jutta Treviranus | [Medium](#)



Risks with AI

Lack of accessibility

Lack of personalisation

Violation of personal
privacy

Reduced quality of
education

Speech-to-text that does
not recognise the way
hard of hearing people
speak

'Anti-cheating for home
exams software' flags
behaviours common
among people with
disabilities as suspected
cheaters

Software to detect if a
text written by an AI has
low accuracy

Emotion recognition
software interprets sign
language grammar as
aggression



Who has the remote matters

- Empowerment: we support AI that increases accessibility and empowers individuals. Increase quality of life
- Digitalisation is always a political decision, its all about how it is introduced
- Freedom of choice and control: absolutely crucial if the individual can switch on or off.
- When someone else decides to use AI: Rigorous testing is required to ensure equal treatment .
- Inclusive system development: Ensure that persons with disabilities are involved at all stages



EDF guide on the AI Act



A disability-inclusive Artificial Intelligence Act

By Kave Noori, EDF Artificial Intelligence Policy Officer | October 2024

A guide to monitor implementation in your country

- Comprehensive guide for national implementation of the AI Act
- Explain the AI Act in simple terms
- Highlights most meaningful focus areas for organisations of persons with disabilities

[A disability-inclusive Artificial Intelligence Act: A guide to monitor implementation in your country - European Disability Forum](#)

Q & A and open discussion





Thank you!

For listening and thank you to the
European AI & Society Fund who funds
EDF project on Disability Inclusive AI



Social Services Europe Webinar
Webinar «AI & Social Services»
27 November 2024

Kave Noori

AI Policy Officer

This document contains a list of links online resources that I may refer to during my presentation or who I still believe may be interesting for anyone who wants to dig deeper into the topics that I mention during my intervention

Example of how AI can be used to increase individual autonomy:

[Dundee man uses Alexa to help with his dementia](#)

Media reporting about a county in the US that used a risk scoring algorithm to identify children at risk of harm and neglect:

- [Here's how an AI tool may flag parents with disabilities | AP News](#)
- [Child welfare algorithm faces Justice Department scrutiny | AP News](#)
- [The Devil is in the Details: Interrogating Values Embedded in the Allegheny Family Screening Tool | American Civil Liberties Union](#)
- [The harm that data do: The case of the Allegheny Family Screening Tool | by Neil Ballantyne | Medium](#)

Link to a presentation from Canadian professor Jutta Triveranous regarding inclusive design:

[We Count: Fair Treatment, Disability and Machine Learning, by Jutta Treviranus \(OCAD University\) - Presentation at W3C Workshop on Web and Machine Learning](#)

APF France Handicap, a French organisation representing persons with disabilities, has collaborated with Amnesty International and other human rights organisations to request that a French court halt the use of a discriminatory algorithm in Social Security that suspects fraud.

[France: Discriminatory algorithm used by the social security agency must be stopped - Amnesty International](#)

Showcasing of AI work done by EDF members

- [European Council of Autistic People training on AI and disability](#)
- [Conference on AI in Riga, organised by EDFs member in Latvia](#)
- [EDFs French Member CFHE produced a booklet on AI and disability](#)
- [ENIL factsheet on AI and independent living](#)

Resources

- [Website of the disability inclusive AI project of EDF](#)
- [EDF guide on national implementation of the artificial intelligence act for organisations of persons with disabilities](#)
- [EDF update on AI and disability](#)

Square de Meeus
1000 Brussels Belgium

tel +32 2 282 46 09
fax +32 2 282 46 09

info@edf-feph.org
www.edf-feph.org

Study on current and future use of Artificial Intelligence in social care services for persons with disabilities

Joint Webinar Artificial Intelligence & Social Services

27 November 2024



About us

- **Nina Ždanovič**, PhD in Social Sciences nina@policyimpactlab.com
 - Researcher at Policy Impact Lab
 - Focus: marginalized groups, AI in social sectors, social sustainability
- **Veronika Kubeková**, MA in Evaluation of Programmes and Public policies
 - Partner, researcher and evaluator at Blomeyer & Sanz
 - Focus: social inclusion, social services, disability

Objectives

- **Provide an analysis of the current state** associated with implementing AI tools in social care and support services for individuals with disabilities.
- **Highlight the challenges and opportunities** for a successful integration of AI systems into social care services.
- **Identify and explore exemplary AI practices in social care** and support services for individuals with disabilities.
- **Provide recommendations** for efficient and ethical implementation of AI in social care and support services for persons with disabilities.



Image generated by DALL-E.

Prompt: "Current state of AI in social care services for persons with disabilities"

How AI is used in social care sector: Benefits

Service users

For people with disabilities, the principal benefit of implementing AI-based technology is **increased independence**, assistance with daily routines, and improved quality of life.

Some of the most commonly utilized tools are speech-to-text and text-to-speech applications that aid with communication.

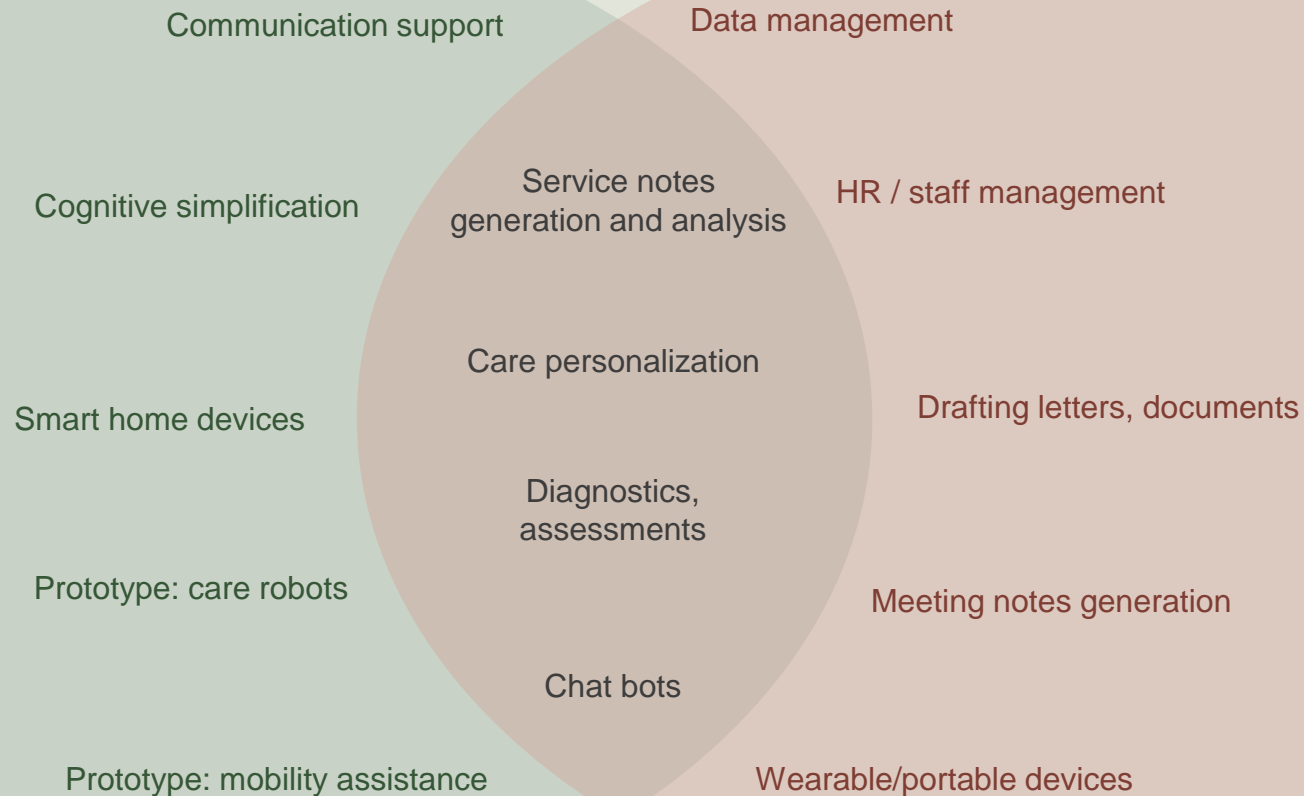
Speech recognition technology is also utilized in smart home devices and personal assistants to facilitate daily tasks, such as controlling the lights, appliances, and set voice reminders.

Service providers

For social care providers, AI is being extensively used to reduce administrative burden and improve time management.

On organizational level, many of the data management and health record management platforms are already enhanced by AI, and can save time retrieving records, integrating information, or assisting with scheduling.

On an individual level, service providers are using Large Language Models (LLMs) to brainstorm care plans; dictation tools to facilitate service note generation and reporting.



How AI is used in social care sector: Challenges

- **Social care workers are reluctant to adopt new technology.**
 - The social services sector often lags in adopting new technologies due to lower digital literacy and a focus on human connection. Many providers fear AI could replace their roles, while limited time, energy, and resources hinder capacity-building efforts.
- **There are concerns regarding the safe and ethical implementation of AI.**
 - The social care sector's work with vulnerable groups and sensitive health data brings significant ethical concerns. Balancing the benefits of technology with privacy risks remains challenging, emphasizing the need for robust safeguards and transparent practices.
- **Lack of proper planning when integrating AI on organizational level.**
 - Many organizations adopt AI solutions simply to stay current, often neglecting to assess existing challenges and explore how AI could address them effectively. This rushed approach, driven by fear of missing out on the AI boom, can lead to poorly aligned implementations.
- **Accessibility of AI tools is often limited for people with certain disabilities.**
 - Mainstream AI tools are often not designed with diverse needs of people with disabilities in mind. Even specialized tools are often designed and developed without involving people with disabilities, which results in inefficient solutions.

AI tools with low barrier of entry: Notes from the field

ChatGPT for care personalization

A service provider utilizes ChatGPT to create personalized care plans tailored to users' interests and life goals, ensuring no personal information is used in the process.

Example prompt:

"Develop a one month plan for a support worker to work with someone who wants to improve their math skills. They have a visual impairment, are interested in Star Wars, and live in East London. Now, write an ad to employ someone to help."

Speech-to-text for communication

Speech-to-text tools, such as dictation and real-time audio transcription. Can be used by people with and without disabilities.

For deaf and hard-of-hearing:

Communication support, deaf colleagues can be aware of what is happening, when interpreter is not available.

For neurodivergent individuals:

"Game-changer" in terms of efficiency, helps to focus on core tasks without getting overwhelmed by taking notes.

Audio transcription for service notes

A service provider is using a specialized AI tool for taking service notes and generate detailed assessments to reduce administrative burden, improve the quality of notes, and increase connection with the service user.

Example features:

- Transcription of recorded audio
- Automated fitting of the transcribed text into a customizable report template
- Editing and final confirmation by the service provider
- Integration with everyday tools

Thank you!

