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Knowledge and solutions that lifts the digital healthcare of the future

- Our vision from new strategy plan 2022-2024



### About us

Since the beginning of the 2000s, the University of Agder (UiA) worked to develop knowledge and expertise in e-health and modern care and welfare technology, and in 2011 e-health was defined as a focus area at the university.

The Center for e-health was established in 2010 and in 2019 the center was awarded top research status and is among UiA's flagships for research efforts of national and international class.

The center is currently run as a collaboration between 5 faculties: Health and Sports Sciences, Humanities and Pedagogy, Social Sciences, Technology and Science and the Business School.

The centre's core group consists of one representative from each of these faculties. Part of the core group's mandate is to be a link between the faculty and the centre, and to contribute strategic input to ensure the quality and relevance of research and innovation at the centre.

In 2018, a joint professional council for research and innovation in e-health was established at the University of Agder. The ambition of the council is to create a joint meeting arena, discuss current challenges and give advice to the University of Agder. In this way, the council can function as a coordinating body and contribute to a common boost for the entire e-health initiative in Agder.

# Highlights from 2021

A lot has happened at the Centre for e-health despite the continued shutdown and uncertainty related to the corona pandemic. The centre has grown, with several new fellows, international affiliated professors, and affiliated Norwegian researchers with principal positions at other universities.

We have carried out an extensive process to develop a new strategy for the period 2022-2024. The core group, consisting of the centre management and the contact persons from each faculty, has formed the working group. The centre's other researchers have also participated in the work. In addition, we have received advice and input from the regional partners, the proffesional council and central department heads and deans.

The centre's researchers have also been active in developing applications in collaboration with other environments at UiA, in the region, nationally and internationally.

The unique co-creation arena we have in the I4Healthbuilding has also been further developed in 2021. In particular, we have worked to develop an innovative and interactive display arena for welfare technology together with Grimstad municipality and I4Helse AS. In addition to the existing labs (user test lab and housing simulator), a completely new VR/AR lab (virtual reality and augmented reality) has been established. We hope this will be widely used when the health service in the region explores and exploits the opportunity that lies in such technology.

Through the collaboration with the Norwegian Smartcare Cluster, the I4Health facilities are included as a 'test site' in national, Nordic and European networks and initiatives.

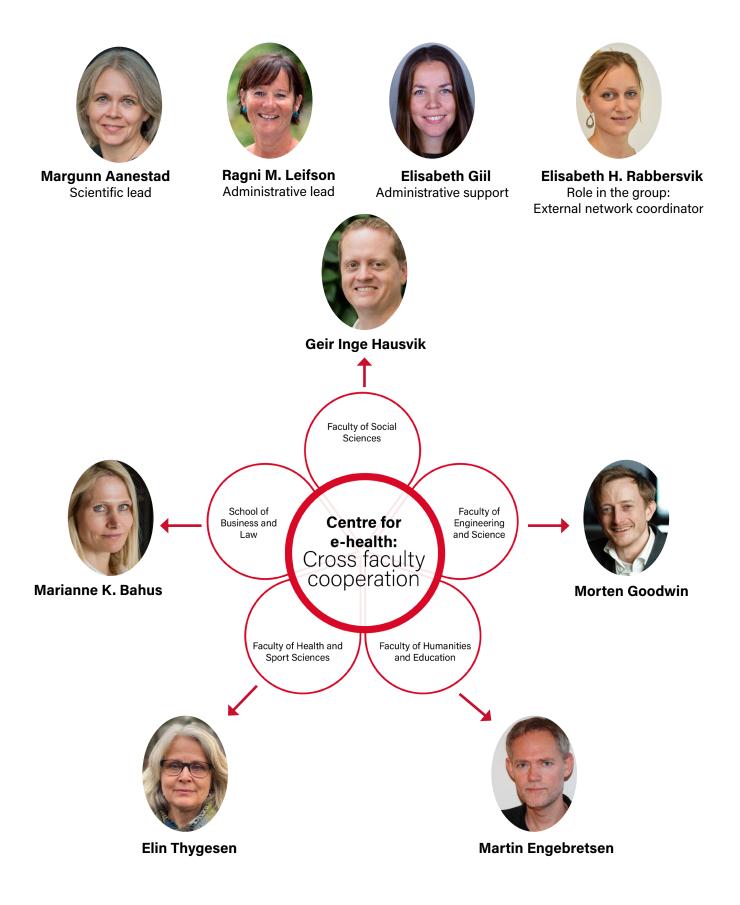
It has been a great privilege to be allowed to be the scientific leader of a Centre with such great potential! The centre's members possess a wide range of skills that are important for the e-health field, and this interdisciplinary nature leads to exciting discussions and new, important insights. This also makes the Centre unique in both a national and international context. Together with a university that invests in the e-health field and a region that is active, we can help achieve the goal of raising Agder as a model region for e-health and contribute to technology contributing to better health for the population.



Margunn Aanestad Scientific lead



### The core group





### **NEW STRATEGY PLAN 2022-2024**

In 2021, the Center for e-health has carried out a comprehensive joint strategy process for the period 2022-2024. This involved both affiliated researchers, regional collaboration partners, the professional council and central department heads and deans. The process has helped to strengthen both internal and external relations.



#### Vision

Knowledge and solutions that lifts the digital healthcare of the future



#### Social responsibility

Our research is on digital solutions that contribute to prevention, health promotion and coping. The center conducts interdisciplinary, practical, useroriented research and development with high professional quality. We develop knowledge and solutions through cocreation between users, the health service, business and academia.



#### Values

We contribute to emphasizing the user perspective so that solutions and services are:

- Accessible and inclusive
- Preventive, health-promoting and
- oriented towards coping with life
- Useful, efficient and sound

The Center for e-health will be further developed as an interdisciplinary research environment with a professionally interesting and socially shared environment. The center will be a nationally leading and internationally recognized research centre. We will collaborate both internally with other professional environments at the university, and externally with other research environments, the health services, business and user environments.

#### Focus area 1

### User participation in development and co-creation

The centre's aim is to promote a focus on user participation in development and co-creation. Our aim is for the center to be recognized for its expertise in user-centred co-creation and for I4Health to be a preferred arena for design, development, testing and evaluation of digital healthcare services and healthcare technologies. In addition, we want to contribute to ensuring that marginalized groups, who are rarely included, are involved in design and development processes and that technology is developed based on needs, also outside the traditional target groups.

#### **Focus area 2** Digital healthcare services

Digital solutions can contribute to self-help and coping with life, enable new types of follow-up and home services and contribute to comprehensive and seamless healthcare services. Through our research, we will contribute to user-centred development, introduction and evaluation of digital healthcare services.

#### **Focus area 3** New technologies for health, coping and learning

New technologies, such as robotics, sensor networks and virtual/augmented reality (VR/AR), are entering the healthcare sector. The Center for e-health will contribute to user-centred, needsdriven and ethically responsible development and introduction of these new technologies.

#### **Focus area 4** Better use of health data

Better use of health data can contribute to more personal adapted healthcare services, for more learning in the healthcare service and for better communication with the population about health topics. The Center for e-health wants to contribute to user focus by building knowledge about the need for, understanding of and application of health data and health information among health personnel, patients and the general population.



Participants on the strategy seminar 17-18. november, Scandic Bystranda Kristiansand

GI UIA Centre for e-health

### **Research and Development**

#### **REGIONAL PROJECTS**

In 2021, we have continued one regional project: "Agder as a model region" (financing from the Aust-Agder Development and Competence Fund). The purpose of the project is to facilitate competence and development so that Agder can be developed as a model region in e-health. In 2021, we have been joined by two more international professors (a total of 3), and are continuing to work on the sub-projects, including the exhibition arena and infrastructure. Among other things, we have established and equipped a XR- lab, in which there is interest both from partners and from UiA students.

We have received approval for two preliminary projects (both funded by RFF Agder):

- Digital Patient Progress (DigPas). UiA will collaborate with SSHF to develop a fully digital solution for followup of HIV patients. The aim of the pilot project is also to develop a larger main project in connection with SSHF's quality and modernization project (KOM).
- ECG247 together with AppSense, Norce and SSHF. "Can we avoid serious complications from heart fibrillation in users of home-based services"? The main aim of the preliminary project is to produce a knowledge base, by establishing a new collaboration service between home care, hospitals and GPs, for the provision of technology that can enable remote diagnosis of possible atrial fibrillation in people in risk groups. This is a necessary step on the way to a main project in which the usefulness and effect of largescale atrial fibrillation screening will be investigated.

#### NATIONAL PROJECTS

Vi har videreført to nasjonale innovasjonsprosjekter med finansiering fra Norges Forskningsråd:

- InnArbeid: Behovsdrevet innovasjon for inkludering av personer med utviklingshemming i arbeidslivet ved bruk av teknologi.
- DIPAR: Digital infrastructures for robust and scalable patient follow-up in pandemic situations - how can digital home follow-up contribute to pandemic management

We are participating in a new national research project called HELKOST-COVID19: The right to a healthpromoting diet for people with developmental disabilities who live in their own home during the covid pandemic.

#### INTERNATIONAL PROJECTS

We have continued one international project:

**From Isolation to Inclusion - I2I** (financing from EU Interreg). The project is aimed at reducing lonliness.

Two international projects were completed in 2021:

- **mHealth Hub** (financed by EU H2020) a network for competence building on m-health.
- Digital Telecare Twinning (financed by Digital Health Europe) - a competence development project on the introduction and scaling of welfare technology with participants from Agder, Scotland and Andalusia (Spain).

We are participating in a new nordic project called **SOS/ Partially Digital Citizens** (financed by NordForsk/Nordisk Råd). This project focuses on digital exclusion.

#### APPLICATIONS

Several applications for the Research Council's KSP scheme (Competence and Collaboration Projects) were submitted in February 2021. We did not receive a grant then, but several of the applications were revised and resubmitted.

We coordinated an application for a National Research School in e-health. This was not granted despite a good assessment, but we want to start up some of the planned activities with other funding, including a PhD course in cocreation. The contact we gained with the other national research environments in connection with this application has been positive, and will be strategically important to build on.

We participated in an EU H2020 application organized by our strategic partners in Scotland, as well as in initial collaboration on another H2020 application (submitted in 2022).

 You can create a world-leading center here if you want, together with the i4Health building, this can become a melting pot for both education and research in Norway!

- One feedback from the 2021 strategy meeting



### **Project overview**

### Lead projects

Project title	Financing	Period	Budget	
Innarbeid	Norges Forskningsråd	2017-2022	NOK 10 mill	
Agder som mønsterregion	AAUKF	2019-2023	NOK 23 mill	
121- From Isolation to Inclusion	Interreg North Sea Region	2020-2023	Euro 3,2 mill	
DIPAR	Norges Forskningsråd	2020 - 2022	NOK 4,5 mill	

#### **Partner projects**

Project title	Financing	Period	Budget
SOS/ Partially Digital Citizens	Nordforsk 2021 - 2023		Euro 1,47 mill
mHealth Hub	H2020	2017 - 2021	
Digital Telecare Twinning	Digital Health Europe 2020 - 2021		Euro 0,2 mill
KOM/Bruk Brukeren: Forprosjekt: Digitale Pasientforløp	SSHF - RFF-Agder	2021- 2023	NOK 0,3 mill
HEL-KOST COVID	DAM-stiftelsen	2021-2022	NOK 0,66
Kan økt kunnskap om kroppsbilde forbedre helsetilbudet til familier som har barn med overvekt?	Sanitetskvinnene	2021 - 2024	
Hva er barn med diabetes 1, pårørende og helsepersonell sine opplevelser av "fjern- kontroll" via videokonferanse og tilgjen- gelige pasientdata med spesialisthelsetje- nesten, versus oppmøtebaserte kontroller i poliklinikk?	Senter for e-helse, UiA	2021 - 2024	

#### **Reference group**

Title	Financing	Period	Budget
DignityCare	Norges Forskningsråd	2021- 2025	NOK 16 mill

# Ongoing PhD projects



#### Hans Gunnar Slokvik Lian

Thesis title: Sensing mental health: Sensor-based monitoring and its ethical implications for the well-being of acute mental health patients

Connected to the Department of Religion, Philosophy and History Started in 2019 - Dissertation planned for 2022 Main supervisor: Terje Mesel, UiA Co-supervisors: Bjørn Morten Hofmann (UiO/NTNU), Leonora B. Onarheim (HiOF/UiA)



#### Magnus Repstad Wanderås

Thesis title: Video consultation in general practice

Connected to the Department of Health and Nursing Science Started i 2020 - Disseration planned for autumn 2024 Main supervisor: Santiago Martinez, UiA Co-supervisors:: Elin Thygesen (UiA), Eirik Abildsnes (Kristiansand kommune/UiA)



#### Dragana Paparova

Thesis title: Data centric platforms and the governance of personal healthcare data in patient-centered care initiatives

Connected to the Department of Information Systems Started in 2020 - Dissertation planned for 2023 Main supervisor: Margunn Aanestad, UiA Co-supervisors: Sara Hofmann, Marianne K. Bahus UiA



#### Henriette Hovland

Thesis title: Older adults, social inclusion, and digital technology

Connected to the Department of Health and Nursing Science Started in 2020 - Dissertation planned for 2024 Main supervisor: Elin Thygesen, UiA Co-supervisors: Cecilie Karlsen, Kristin Haraldstad, UiA



# Ongoing PhD projects



#### Mugula Chris Safari

Thesis title: Technology design with people with intellectual disabilities

Connected to the Department of Psychosocial Health Started in 2019 - Dissertation planned for 2023 Main supervisor: Elin Thygesen, UiA Co-supervisor: Sofie Wass



#### Ayan Chatterjee

Thesis title: Design of an AI-based Smart e-Coach System to provide personal behavioural recommendations for increased physical activity and reduced obesity risks

Connected to Department of Information and communication technology Started in 2019 - Dissertation planned for 2022 Main supervisor: Martin Wulf Gerdes, UiA Co-supervisors: Andreas Prinz, Santigao Martinez, UiA



#### Trine Holm

Thesis title: Proxy ePROM in public health centers and school health services

Connected to the Department of Health and Nursing Science Started in 2021 - Dissertation planned for 2025 Main supervisor: Thomas Westergren, UiA Co-supervisors:: Elin Thygesen, Geir Inge Hausvik, UiA



#### Katherine Brown

Thesis title: Digital infrastructures in immigrants healthcare networks in Norway

Connected to the Department of Information Systems Started in 2021 - Dissertation planned for 2024 Main supervisor: Margunn Aanestad, UiA Co-supervisor: Carl Erik Moe, UiA



# Ongoing PhD projects



#### Linda Sørensen

Thesis title: How can Humanoid Robots assist users with disabilities in activities of daily living? - A qualitative study on user needs, perceived usefulness, ease of use and acceptance.

Connected to the Department of Health and Nursing Science Started in 2021 - Dissertation planned for the autumn 2025 Main supervisor: Hege Mari Johnsen, UiA Co-supervisors: Åshild Slettebø, Dag Thomas Sagen, UiA



#### Sarala Ghimire Subedi

Thesis title: Augmented video consultation

Connected to Department of Information and communication technology Started in 2020 - Dissertation planned for 2024 Main supervisor: Martin Wulf Gerdes, UiA Co-supervisors: Santiago Martinez (UiA), Gunnar Hartvigsen (UiA/UiT)



#### Anne Line Møllen

Thesis title: Something within digital home follow-up of pasients

Connected to the Department of Religion, Philosophy and History Started in 2022 - Dissertation planned for 2025 Main supervisor: Leonora B. Onarheim (HiOF/UiA) Co-supervisor: Tina L. Barken



#### Ida Victoria Katjivena Pedersen

Thesis title: noe innen helseøkonomi

Connected to the School of Business and Law, Department of Economics and Finance Started in 2022 - Dissertation planned for 2025 Main supervisor:Eirin Mølland, UiA Co-supervisor: Jonas Minet Kinge, FHI/UiA



# Projects completed in 2021

### **Digital Telecare Twinning**

DigitalHealthEurope (DHE) "Digital Telecare" has brought together three regions, Andalusia (Spain), Agder (Norway) and Scotland (Great Britain) to share their experiences in welfare technology and to improve their regional strategic plans.

Many European countries still use traditional analogue services. At the same time, the development of new digital technologies means that the analogue infrastructure will be replaced by digital in the coming years. Only a few regions have already switched to digital technology, the Agder region is one of them.

The project describes a way to support the transition from analogue to digital services, while using strategies, business models and resources developed by the Twinning partners.

Despite the difficulties and limitations caused by COVID-19, the project has produced several valuable results. During the 10-month project period, the partners exchanged knowledge and resources about the main aspects of the delivery of welfare technology solutions. These resources have subsequently been integrated into two twinning productions and are now available and open for implementation in other European regions. The first result from the project is a strategic "Digital Telecare Roadmap" which can be used as a source of information for providers who are either planning to switch from analogue to digital services or who have already switched and want to maximize the possibilities of the new services.

The twinning partners also contributed to the development and design of a "Citizen Pathway" for Scotland's "Digital Telecare Playbook", a digital repository of resources and tools. "The Pathway" can be used as a guide to support service providers to ensure that their services are designed and delivered in a person-centred way.



### mHealth Hub H2020

The Center for e-health has participated in an EU project aimed at using mobile-based technology to offer healthcare services (popularly called m-health). The mHealth Hub project builds on the previous global collaboration project "Be Healthy, Be Mobile" between the World Health Organization (WHO) and the International Telecommunications Union (ITU). The aim of the project is to collect national experiences about m-health implementations in Europe, large-scale operation and risk factors, interventions and disease groups. There are 22 partners in the consortium.

The focus has been on non-communicable diseases (ie chronic and/or lifestyle-related diseases) and the purpose was to connect researchers, projects, knowledge and insights from various m-health projects in various European countries. The goal is to create a knowledge base for EU member states on how to implement national m-health programs in collaboration with regional and global partners. mHealth Hub is a knowledge center and seeks to support the various countries in introducing m-health on a larger scale. UiA's participants have contributed to a report on the evaluation framework for m-health apps, where the user aspect was also mapped in collaboration with patient organisations.





### Other activities at the Centre

Several of the Centre's members support the Directorate of Health's work for sharing knowledge about digital home follow-up and online treatment. In 2021, we delivered 3 consultation inputs and 4 other inputs to national processes (the Directorate of Health and the Directorate for e-Health) and participated in various councils, committees and expert groups.

We had two well-attended events at Arendalsuka together with both local and national actors. One topic was Personal Health Data, and we had various lectures to shed light on the topic from different angles. The center also organized a workshop together with Arendal municipality on the topic of social inclusion of the elderly. This was done under the auspices of the project "From Isolation to Inclusion" (I2I), which is an Interreg North Sea Region project led by the centre. We also participated in a third event together with the three large industry clusters within e-health (NSCC, NHT, OCC). The discussion here focused on how to build a solid health service in Norway with well-tested treatments, products and services provided by Norwegian innovators. Margunn Aanestad gave a presentation entitled "Co-creation is the key".

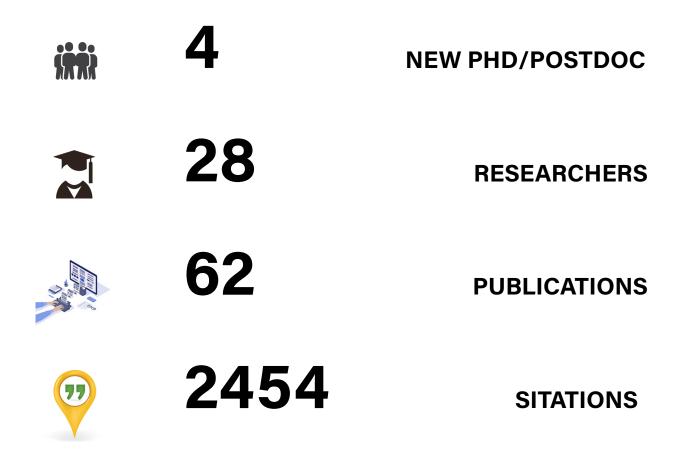
Researchers from the Center for e-health have also, in collaboration with researchers from USN, launched a new version of the national training program "Welfare technology's ABC" for use in all the country's municipalities, commissioned by KS. The target group is employees and managers in municipal health and care services, organized with common themes and some indepth themes for managers. On the teaching side, we contribute to the Master's program in Health and Social Informatics, as well as to several programs at the employees' home faculties. In 2021, we have registered 53 bachelor's/master's theses with e-health as a theme- but the potential is bigger. We see the need to stimulate more use of the I4Health facilities and e-health-oriented, interdisciplinary student projects.

**Students as co-researchers:** In 2021, we have continued to collaborate with students who attend Kvadraturen upper secondary school in Kristiansand. Pupils from one class have been on a study visit to 14H, and have been given a tour of the housing simulator, the usability laboratory and the VR lab. Furthermore, they have received instruction in e-health and research methods, contributed to a workshop related to the possibilities of VR, as well as contributed to the further development of a questionnaire related to e-health solutions and VR as competence-enhancing measures in health. The students have completed a survey among fellow students at their school, and prepared project reports based on the survey.





# KPI and target figures for 2021



KPI: Top quality in research, teaching, dissemination and project	Status 2013-2018	Target 2019- 2023	2019	2020	2021	Target ann. average
Scientific conferences publications (DBH indx)	90	250	17	16	13	50
Scientific journal articles level 1	105	250	36	33	37	50
Scientific journal articles level 2	13	50	7	5	12	10
Cross-faculty publications	50%	60%	22%	19,5%	17,5%	
Sitation of our publications	950	3000	1115	607	2454	600
Researchers connected to the Centre	15	32	17	20	28	6,4
Professors connected to the Centre	5	15	6	9	11	3
New PhD/postdoc	14	25	3	4	4	5
PhD Dissertations	4	15	6	5	1	3

# Professional council for research and innovation in e-health

E-health and welfare technology is an area that requires knowledge and competence across disciplines and research fields, and collaboration between actors from both the private, public, and voluntary sectors. It is therefore important for the university to secure input and advice from various actors in the field. In 2018, a joint professional council for research and innovation in e-health was established at the University of Agder. The ambition is to create a common meeting arena, discuss current challenges and give advice to the University of Agder. In this way, the professional council can function as a coordinating body and contribute to a common boost for the entire e-health initiative in Agder.

### Members in 2021

- Anders Johan W. Andersen Dean at the Faculty of Health and Sport Sciences, UiA
- Margunn Aanestad Professor and scientific lead at the Centre for e-health, UiA
- Ragni M. Leifson Administrative lead at the Centre for e-health, UiA
- Michael R. Hansen Dean at the Faculty of Engineering and Science, UiA
- Hans Kjetil Lysgård Vice Rector for Research and Interdisciplinary Projects, UiA
- Inger Holen CEO i4Helse AS
- Arild Kristensen CEO, Norwegian Smart Care Cluster (NSCC)
- Steinar Omnes Representative for Sørlandet Hospital Health Corporation
- Aase S. Hobbesland Municipal manager, Grimstad Municipality
- Kathrine M. Holmerud Representative for Regional Coordination group (RKG e-healthAgder)
- Anders Emil Ånonsen Representativ for user organization, FFO Aust-Agder
- Robert Nystuen Department director Insight and Innovation, The Norwegian Directorate for e-health
- Tine Mette Falck Advisor, Agder County Municipality
- Jon Ivar Holm Innovation advisor at Sykehuspartner HF
- Jon Harald Kaspersen Executive director Health and Society, NORCE
- Heidi D. Liane Senior advisor, County Governor



### Publications 2021

### Level 2

1. Hausvik, Geir Inge; Thapa, Devinder; Munkvold, Bjørn Erik (2021). Information quality life cycle in secondary use of EHR data. International Journal of Information Management.

2. Aase, Ingunn; Ree, Eline; Johannessen, Terese; Strømme, Torunn; Ullebust, Berit; Holen-Rabbersvik, Elisabeth; Thomsen, Line Hurup; Schibevaag, Lene; van de Bovenkamp, Hester; Wiig, Siri (2021). Talking about quality: how 'quality' is conceptualized in nursing homes and homecare. BMC Health Services Research.

3. Ajer, Anne Kristin Sortehaug; Hustad, Eli; Vassilakopoulou, Polyxeni (2021). Enterprise architecture operationalization and institutional pluralism: The case of the Norwegian Hospital sector. Information Systems Journal.

4. Chatterjee, Ayan; Prinz, Andreas; Gerdes, Martin; Martinez, Santiago (2021). An Automatic Ontology-Based Approach to Support Logical Representation of Observable and Measurable Data for Healthy Lifestyle Management: Proof-of-Concept Study. Journal of Medical Internet Research.

5. Chatterjee, Ayan; Prinz, Andreas; Gerdes, Martin; Martinez, Santiago (2021). Digital Interventions on Healthy Lifestyle Management: Systematic Review. Journal of Medical Internet Research.

6. Chatterjee, Ayan; Prinz, Andreas; Gerdes, Martin; Martinez, Santiago (2021). Human Coaching Methodologies for Automatic Electronic Coaching (eCoaching) as Behavioral Interventions with Information and Communication Technology: Systematic Review. Journal of Medical Internet Research.

7. Fredriksen, Erica; Thygesen, Elin; Moe, Carl Erik; Martinez, Santiago (2021). Digitalisation of municipal healthcare collaboration with volunteers: a case study applying normalization process theory. BMC Health Services Research.

8. Nærland, T. & Engebretsen, M. (2021) "Towards a critical understanding of data visualization in democracy: a deliberative systems approach". I Information, Communication & Society.

9. Bahus, Marianne (2021). Barnets beste-vurderinger i skolen. Retfærd. Nordisk Juridisk Tidsskrift.

10. Mulgund, P., Sharman, R., Purao, S., Thimmanayakanapalya, S., and Winkelstein, P. (2021). Mapping Information Needs of Patients With Sexually Transmitted Infections Using Web-Based Data Sources: Grounded Theory Investigation. Journal of Medical Internet Research

11. O'Connor, S. R., Flannagan, C., Parahoo, K., Steele, M., Thompson, S., Jain, S., Kirby, M., Brady, N., Maguire, R., Connaghan, J. & McCaughan, E. M., (2021). Efficacy, use, and acceptability of a web-based self-management intervention designed to maximize sexual well-being in men living with prostate cancer: single-arm experimental study. Journal of Medical Internet Research.



### Level 1

1. Kempton, Alexander Moltubakk; Vasilakopoulou, Polyxeni (2021). Accountability, Transparency and Explainability in AI for Healthcare. Reports of the European Society for Socially Embedded Technologies.

2. Mygland, Morten Johan; Schibbye, Morten; Pappas, Ilias; Vasilakopoulou, Polyxeni (2021). Affordances in Human-Chatbot Interaction: A Review of the Literature.. Lecture Notes in Computer Science (LNCS).

3. Vassilakopoulou, Polyxeni; Hustad, Eli (2021). Bridging Digital Divides: a Literature Review and Research Agenda for Information Systems Research. Information Systems Frontiers.

4. Flovik, Sondre; Moudnib, Robin Amir Rondestvedt; Vassilakopoulou, Polyxeni (2021). Determinants of Blockchain Technology Introduction in Organizations: an Empirical Study among Experienced Practitioners. Procedia Computer Science.

5. Farshchian, Babak A.; Grisot, Miria; Hochwarter, Stefan; Islind, Anna Sigridur; Mikalsen, Marius; Parmiggiani, Elena; Vassilakopoulou, Polyxeni (2021). Platform-Supported Cooperative Work. Reports of the European Society for Socially Embedded Technologies.

6. Ajer, Anne Kristin Sortehaug; Hustad, Eli; Vassilakopoulou, Polyxeni; Olsen, Dag Håkon (2021). Strengthening the Use of Enterprise Architecture: an Institutional Work Perspective. Proceedings of the European Conference on Information Systems (ECIS) 2021.

7. Wilson, Louise; Aanestad, Margunn; McDonald, Joe (2021). Addressing collective action dilemmas in the sharing of personal health data: Goldilocks and the installed base. Reports of the European Society for Socially Embedded Technologies.

8. Hydle, Katja Maria; Hanseth, Ole; Aanestad, Margunn; Aas, Tor Helge (2021). Digital Transformation through Collaborative Platformization: A Study of Incumbent-Entrepreneur Relations. Proceedings of the Annual Hawaii International Conference on System Sciences (HICSS).

9. Matzner, Martin; Pauli, Tobias; Marx, Emanuel; Anke, Jürgen; Poeppelbuss, Jens; Fielt, Erwin; Gregor, Shirley; Sun, Ruonan; Hydle, Katja Maria; Aas, Tor Helge; Aanestad, Margunn; Gordijn, Jaap; Kaya, Fadime; Wieringa, Roel (2021). Transitioning to Platform-based Services and Business Models in a B2B Environment. Journal of Service Management Research (SMR).

10. Følling, Ingrid Sørdal; Oldervoll, Line Merethe; Hilmarsen, Christina Wikstrøm; Ersfjord, Ellen Margrete Iveland (2021). Exploring use of activity monitors for patients with obesity during weight-loss treatment - a qualitative study. BMC sports science, medicine and rehabilitation.

11. Hansen, Julie; Ersfjord, Ellen Margrete Iveland (2021). The pen, the receiver and the pump: Exploring young children's experiences of having a parent with type 1 diabetes. Children & society.

12. Chatterjee, Ayan; Gerdes, Martin; Prinz, Andreas; Martinez, Santiago (2021). A Comparative Study to Analyze the Performance of Advanced Pattern Recognition Algorithms for Multi-Class Classification. Emerging Technologies in Data Mining and Information Security. Springer.

13. Chatterjee, Ayan; Gerdes, Martin; Prinz, Andreas; Martinez, Santiago (2021). Comparing Performance of Ensemble-Based Machine Learning Algorithms to Identify Potential Obesity Risk Factors from Public Health Datasets. Emerging Technologies in Data Mining and Information Security. Advances in Intelligent Systems and Computing. Springer.

14. Fischer, Joachim; Møller-Pedersen, Birger; Prinz, Andreas; Thalheim, Bernhard (2021). Models Versus Model Descriptions. Modelling to Program Second International Workshop M2P 2020, Lappeenranta, Finland, Revised Selected Papers. Springer Nature.

15. Prinz, Andreas (2021). Teaching Language Engineering Using MPS. Domain-Specific Languages in Practice with JetBrains MPS. Springer Publishing Company.



16. Prinz, Andreas (2021). What is the Natural Abstraction Level of an Algorithm?. Logic, Computation and Rigorous Methods Essays Dedicated to Egon Börger on the Occasion of His 75th Birthday. Springer Publishing Company. Chapter. s 199 - 214.

17. Thygesen, Elin; Safari, Mugula Chris; Wass, Sofie (2021). Transport og arbeidsinkludering. Arbeidsinkludering for personer med utviklingshemming.

18. Safari, Mugula Chris; Wass, Sofie; Thygesen, Elin (2021). 'I Got To Answer the Way I Wanted To': Intellectual Disabilities and Participation in Technology Design Activities. Scandinavian Journal of Disability Research.

19. Thygesen, Elin; Safari, Mugula Chris; Wass, Sofie, Haugland, Silje; Omland, Hans Olav (2021). Transitions from school to sheltered employment in Norway – Experiences of people with intellectual disabilities. British Journal of Learning Disabilities.

20. Muaaz, Muhammad; Chelli, Ali; Gerdes, Martin; Pätzold, Matthias Uwe (2021). Wi-Sense: a passive human activity recognition system using Wi-Fi and convolutional neural network and its integration in health information systems. Annales des télécommunications.

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