SACAREPATH

Newsletter

Autumn 2022

Clinical Decision Support Systems and their Applications in Daily Clinical Practice

Decision making is a fundamental and important part of patient care and treatment process. Making the right decisions at the right time and in the right place is always crucial in clinical practice and can result in added value in patient outcome and disease management.

To improve the quality of clinical decisions, correct and complete data should be provided, analyzed and processed scientifically. This will help to gather an accurate and up-to-date evidences at the time of decision making. That is where Clinical Decision Support Systems (CDSSs) can provide an added value in the clinical setting.

In the CAREPATH project, consortium partners build clinical decision support services to deliver personalized guidance to healthcare professionals about the goals and interventions (treatment actions, patient monitoring activities and lifestyle management activities). These suggestions can be added to the ongoing care plan of the patient according to the recommendations of the clinical guidelines to achieve a patient-centered customized care.

Read the full article.

Machine Learning for Dementia Early Detection

Dementia affects mainly older adults and exists in 4 types: Alzheimer dementia, Vascular dementia, Lewy bodies dementia and fronto-temporal. Dementia is usually revealed by a degradation of cognitive, neuropsychiatric and daily life activities functions. At the clinical level, it is therefore diagnosed via combinations of cognitive and neuropsychiatric assessments, most often requiring direct interaction with a caregiver. This is time-consuming and a heavy burden for specialists.

The advent of Machine Learning (ML) techniques in that sense represent a crucial advantage for the scientific community and majority of recent research projects are evolving towards this direction for dementia early identification. In the CAREPATH project, we take advantage of the Patient Empowerment Platform to drive ML research studies around "offline" early dementia detection.

Read more in the full article.

Security Aspects of AI in the Healthcare Sector

Artificial intelligence applications are massively used in most of today's healthcare systems, from medical diagnostics to e-health assistants to robot-assisted surgeries. This has leveraged the efficiency of healthcare professionals and helped patients as well. However, these advantages may come at the cost of security of patient data and professionals. The healthcare sector is one of the most vulnerable in industries when it comes to cybersecurity. This vulnerability has significantly increase since the starting of the Covid-19 pandemic.

The intensity of healthcare-related incidents, Artificial intelligence (AI) applications and cybersecurity threats in healthcare are currently facing severe attacks. Cyberattacks have become more advanced using AI, therefore attacking systems that are secured with conventional methods becomes easier. It is thus important that AI applications in healthcare have a high consideration while developing new AI- algorithm for security to constantly manage and secure the increasing volume of healthcare Internet of Things (IoT) sensor nodes as they connect and disconnect from healthcare networks. New AI techniques are expected to enhance cybersecurity by assisting human system managers with automated monitoring, analysis, and responses to adversarial attacks

Read more in the full article.

Event Participation

Upcoming

Free Webinar by the Alan Turing Institute: Towards Transparent and Explainable AI: The Current Standardisation Landscape, 8 December 2022



<u>Register</u> for this webinar for an overview of the most prominent *international standardisation initiatives on AI transparency and explainability*. These initiatives covered include a published standard (IEEE 7001) as well as two standards currently under development (ISO/IEC AWI 12792 and ISO/IEC AWI TS 6254).

Second Project General Assembly in Milan, Italy 14-15 December 2022

The CAREPATH project Consortium will meet physically for the first time in Milan for the 2nd General Assembly and meeting.

Past

Bielefeld, Germany. 16 November 2022

Wolfgang Schmidt-Barzynski, SKB, presented the CAREPATH project to a group of about a dozen General Practitioners in the region, at their quality circle meeting. This introduction to the project has provided key information about the project and study for the involvement of these healthcare professionals and support in recruiting patients to the study.



Düsseldorf, Germany. 14-17 November 2022

MEDICA 2022 Medical Trade Fair.

Yehya Mohamad, Fraunhofer, has participated in this event and has been talking about the CAREPATH project in his presentations.

More than 81,000 visitors from various sectors of the global healthcare industry came to Düsseldorf, Germany, to attend MEDICA 2022, the world's leading medical trade fair, and COMPAMED 2022, the international No. 1 for the medical technology supply sector.



London, UK. 28-30 September 2022

18th International Congress of the European Geriatric Medicine Society.

Rubén Alcantud Córcoles, SESCAM, gave a presentation on the work in WP6 on "Clinical guidelines and best practices to improve the management of elderly patients with dementia and multimorbidity. A systematic review".

The theme for this year's congress was: Better together: Multidisciplinary team working.



Rubén Alcantud Córcoles presenting at EuGMS 2022.

International CAREPATH Joint Horizon 2020 Special Track



Lisbon, Portugal. 31 August - 2 September 2022

DSAI 2022, the 10th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion.

Yehya Mohamad and Carlos Velasco from the Digital Health Department at Fraunhofer Institute for Applied Information technology (FIT) organized a special track at DSAI 2022 on <u>Accessible, Smart, and Integrated Healthcare Systems for Elderly and Disabled</u> <u>People</u>. The special track brought together contributions from international researchers and practitioners focusing on design, development, testing and application of information technologies to healthcare sector, pervasive, mobile, and ubiquitous healthcare systems, pandemic research, accessibility, usability and user experience of medical apps & devices, human behaviour, integrated healthcare approaches, patient empowerment systems, eHealth data standards and interoperability (e.g. HL7/FHIR), medical device and clinical investigation regulatory frameworks, as well as privacy and security.

8 papers were presented, 6 of them from Horizon 2020 projects:

CAREPATH with 4 papers: <u>https://www.carepath.care/</u>

ESCAPE with 1 paper: <u>https://escape-project.org/</u> **ADLIFE** with 1 paper : <u>https://adlifeproject.com/</u>

Read more about the 4 papers presented by CAREPATH



Omid Pournik, WARWICK, presenting at DSAI 2022 on "CAREPATH methodology for development of computer interpretable, integrated clinical guidelines".



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 945169.

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