



DIGIHEALTHDAY - 2022

GLOBAL DIGITAL HEALTH - TODAY, TOMORROW, AND BEYOND

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ABSTRACT

Clinical Decision and AI Systems in Healthcare

Clinical decision-making and the ability to arrive at a correct diagnosis is still very much an art for many physicians. Physicians adopt different paths to this thought process and to improve patient care. The skills of decision-making evolve over time and play pivotal roles in determining the success and the quality of care provided. There have been tremendous advancements in healthcare, and this has produced an over expansion of the number of treatment options that are available to manage and treat many conditions. This has added a significant increase to the complexity of decision-making to the already complex healthcare landscape.

Artificial Intelligence (AI) and Clinical decision support systems (CDSS) have the potential to assist the healthcare workforce and fasten their decision-making process. These systems can execute simple tasks, such as alerts, reminders, critique, or more complex tasks, including interpreting data, supporting diagnosis, predicting an outcome, assisting orders/prescriptions, and presenting suggestions.



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Data plays a key role in the development of these systems, and the data used by such systems originate from different sources. These include clinical data, contextual data and data from biomedical knowledge, including clinical guidelines and relevant research. It is important to note that the performance of these systems is only as good as the (quality and quantity) data used to develop the system.

This workshop will provide an overview of the vast spectrum of technologies and tools in these domains, including knowledge on theoretical understanding, data standards, decision models and understanding on various Machine Learning (ML) and AI algorithms. The participant will also understand and explore the few of the various tools that can be used in a clinical context.

Some key topics shall include:

- Introduction and theory behind decision support systems
- Introduction to AI and ML
- ML workflow
- Hands on with tools for data analysis

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AGENDA

Date	Time (CEST)	Topic
Monday, 25 April, 2022	14:00 - 15:30	<ul style="list-style-type: none"> • Introduction to CDSS • Components of CDSS • Introduction to data analysis and data mining tools • Importance of data CDSS and AI
	15:30 - 15:45	Break ☕
	15:45 - 17:15	<ul style="list-style-type: none"> • Case studies of CDSS use • AI and Machine learning concepts for CDSS • Data mining hands-on with tools for data analysis and data mining