AI FOR FUTURE HEALTHCARE

16th Dec 2021
9:00- 17:30 CET

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Theme Development Workshop

Identify common goals between academia and the healthcare sector as well as other relevant stakeholders, and define promising approaches for European research and innovation in Trustworthy AI.

Organising Committee

CLAIRE · DFKI · LUXEMBOURG INSTITUTE OF HEALTH (RESEARCH DEDICATED TO LIFE) · zhaw (Zurich University of Applied Sciences)

NTT DaTa · Pop Ai · PHILIPS · UNIVERSITAT POLITÈCNICA DE VALÈNCIA

TNO innovation for life

Workshop programme

Due to Covid 19 the workshop will be held online with a mixed programme of presentations and in-depth discussions about specific sub-topics in smaller groups (Breakout sessions). This gives you the opportunity to discuss with selected experts and contribute to the strategic research and innovation agenda for AI in Europe.

Time	Session
09:00 – 09:15	Welcome & Objectives
09:15 – 09:30	AI in Healthcare Prof. Dr. Ulf Nehrbass - Luxembourg Institute of Health
09:30 – 09:45	AI, genomics & precision medicine Dr. Alfonso Valencia - Barcelona Supercomputing Center
09:45 – 10:00	Coffee Break & Socialising
10:00 – 11:30	Parallel Breakout sessions
11:30 – 12:30	Plenary presentation of key findings from the Breakout sessions
12:30 – 13:30	Lunch break & Socialising
13:30 – 13:45	AI use cases in healthcare industry Dr. Nicola Pezzotti - Philips Research
13:45 – 14:00	AI in healthcare management and improvement Anna Forment - NTTData
14:00 – 15:30	Parallel Breakout sessions
15:30 – 15:45	Coffee Break & Socialising
15:45 – 16:45	Plenary presentation of key findings from the Breakout sessions
16:45 – 17:30	Closing & Socialising

Please register here.

We invite the community to suggest further topics of interest for the breakout sessions. Please use the online application form for your suggestions.

Breakout sessions

Breakout session 1:
Trustworthy AI for Future Healthcare
With this session, we would like to initially define the strategic challenges and derive relevant major topics for Trustworthy AI from the perspective of future healthcare.

Breakout session 2:
Data sharing in the Healthcare Sector
More and more data are being generated from various sources (e.g., medical devices, smart devices, public records), in different geographies, and is often owned by different parties like academia, hospitals, industry as well as governments. Data sharing can improve AI analysis, but also brings several challenges. This breakout session will brainstorm on the challenges and benefits of data sharing, as well as potential technologies.

Breakout session 3:
Trustworthy AI aspects on time series data analysis
In personal, connected and in-hospital care, time series data is a common and important form of input data (e.g., toothbrush localization, sleep phase determination through headphones). This breakout session will focus on the most important trustworthy AI components, challenges, and solutions for this type of data and its analysis.

Breakout session 4:
Trustworthy AI aspects on image segmentation and reconstruction
In clinical imaging, image segmentation and reconstruction are very important use cases, including cancer diagnosis and X-ray image denoising. This breakout session will therefore focus on the most important trustworthy AI components, challenges, and solutions for these use cases.

Breakout session 5:
AI and genomics: Building Precision Medicine using reliable AI
This breakout session will discuss and analyse reliable AI techniques (especially machine learning and deep learning) and how they support bioinformatics in clinical diagnosis.

Breakout session 6:
AI in infodemics
The infodemic phenomenon concerns with the overabundance of information, not necessarily reliable, circulating online and offline about an epidemic outbreak. This session will discuss about infodemics and the role of AI to assess the infodemic risk, with potential applications to public health.

Breakout session 7:
Trustworthy aspects for NLP
In patient intake and engagement, medical documentation, automatic report generation, EMR analysis and forecasting, NLP is widely used. This breakout session will therefore focus on the most important trustworthy AI components, challenges, and solutions for these use cases.

Breakout session 8:
Federated learning approaches for the Healthcare sector
This breakout session will discuss and analyse federated learning approaches to facilitate the analysis of health data stored across different stakeholders and/or borders. This should, for instance, avoid the transfer or exchange of data and ensure increased security.

Breakout session 9:
Explainable AI in Healthcare
Health data is particularly sensitive, and solutions developed with the help of AI are often difficult to understand. The aim of this breakout session is therefore to dive into explainable AI in order to promote the acceptance of digital health solutions in society.

Breakout session 10:
AI expertise in the Healthcare Sector
The healthcare sector faces several challenges in attracting talents and empowering their employees to provide AI-based solutions. What are the specific needs for AI training and upskilling programmes, and how can these needs be aligned with academic activities and doctoral programmes?

Breakout session 11:
HPC-AI convergence and the Healthcare Sector
HPC can propel AI applications toward grand challenges in healthcare: genomics, drug design, diagnostic. This breakout session will brainstorm on the open problems of HPC-AI convergence, such as programming and execution models, accuracy, reproducibility, portability.

Breakout session 12:
AI and bioinformatics: integrating learning and biomedical knowledge
This session will focus on the key research challenge of developing learning models that are aware of and consistent with biomedical concepts and knowledge. We will brainstorm on promising learning paradigms, e.g., deep learning for graphs and learning-reasoning integration, as well as relevant knowledge source, e.g., interactomes.

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