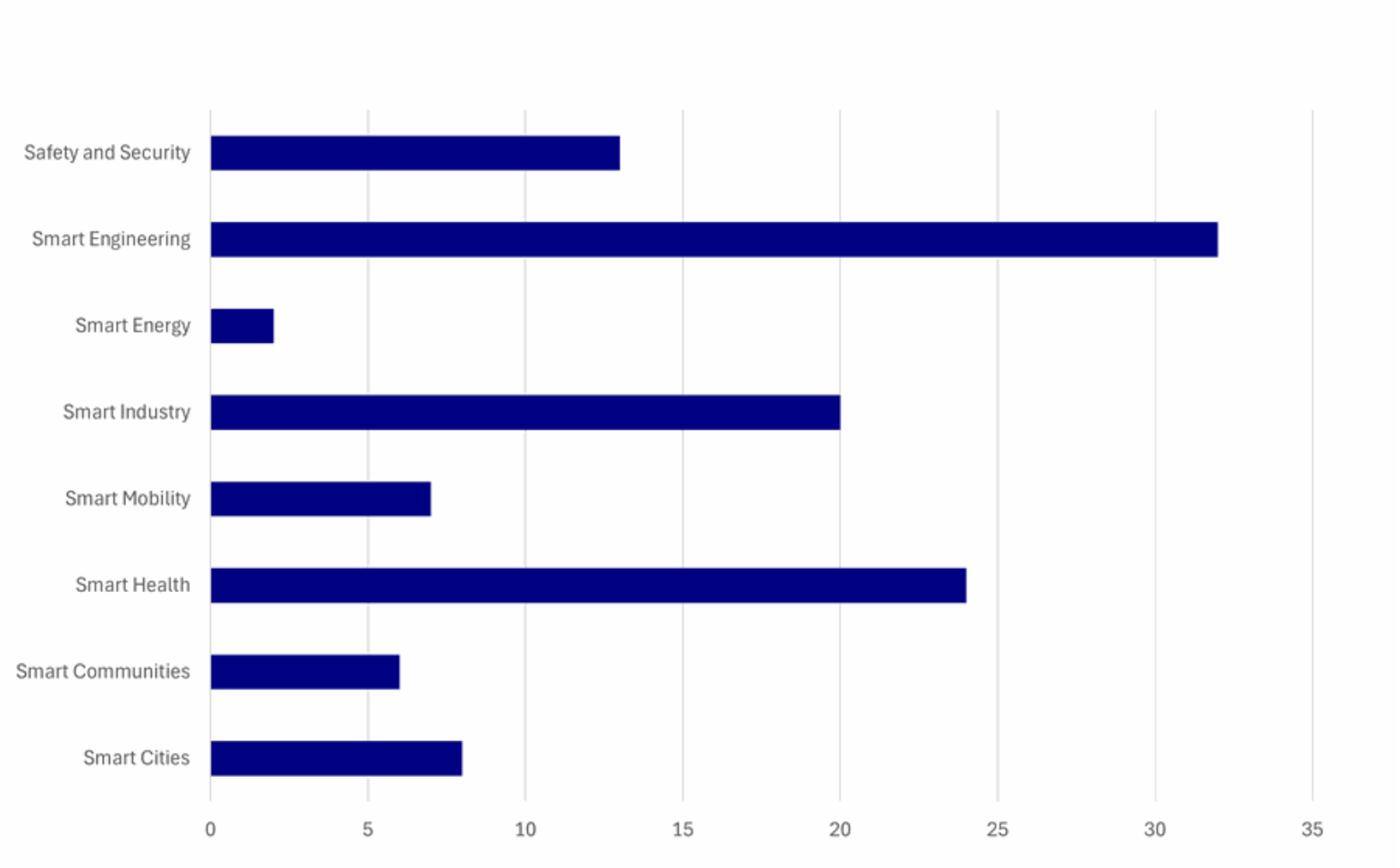
ITEA Topical roadshow
The legal consequences of using AI in healthcare

Introduction

20 June 2024 | Online

The legal consequences of using AI in healthcare

ITEA 3 and ITEA 4 project landscape



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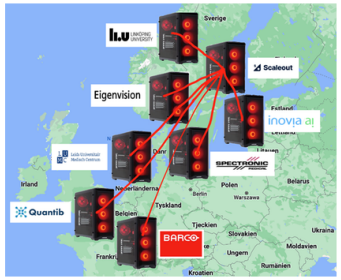
AI in ITEA Smart Health projects

Saving time in the clinical workflow thanks to AI

Deep learning is currently revolutionising many research fields and can be used in health care to save a substantial amount of time in the clinical workflows. One example is radiotherapy treatment planning which requires 1) segmentation of the tumour to be killed by radiation, 2) segmentation of risk organs which should receive as little radiation as possible, and 3) generation of an optimal treatment plan from these segmentations. Deep learning can be used to save time, e.g. 10 – 60 minutes, in each of these steps. However, large, annotated datasets are required to train the complex AI models which usually contain millions of parameters.

In medical imaging, sharing sensitive data between hospitals is difficult due to ethics and regulations like GDPR. In addition, the number of patients with a rare disease in a specific city may be low. One way to enable large datasets in medical imaging is to train the AI models using federated learning, where the data stays at each hospital. In federated learning a powerful computer at each hospital uses the local image data to train the AI model (such as a segmentation network), and the computer at each hospital sends the updated local AI model to a combiner. The combiner aggregates the updates from each hospital and sends out a new global AI model to all hospitals from which the training continues.



In the ASSIST project, several partners in Sweden, the Netherlands and Belgium collaborated to train a brain tumour segmentation network using Swedish SME Scaleout's FEDn framework for federated learning. The combiner was located in Uppsala, Sweden. Each partner used a unique part of an open dataset (BraTS) containing brain tumour images and annotations of each tumour. Future plans include improving the aggregation function, as well as using local radiotherapy treatment planning data from different cities.

DAIsy

Developing AI ecosystems improving diagnosis and care of mental diseases

MediSpeech

Improved efficiency in automated medical reporting to enhance doctor and patient experience

IWISH

Intelligent Workflow optimization and Intuitive System interaction in Healthcare

AIDESL

Fully Automated AI Data Extraction from Scientific Literature

MedGPT

Medical GPT Revolutionizing Healthcare with Ethical AI

ITEA eWatch project leads to better decision support for home care

Noldus Information Technology, partner in the ITEA project eWatch is a Dutch SME that develops portable measurement systems for behavioral scientists. In eWatch they have created and trained an algorithm to detect and recognise physical objects commonly present in a person's home, such as a TV, bed, table and kitchen appliances. This is done by analysing a video data stream that is generated by eye-tracker glasses that are worn at home by an elderly person or a recovering patient. The detected objects are associated with a specific area in the home, making it possible to create statistics about the person's activities. E.g. the amount of time spent in front of the TV or in bed, or the frequency of visiting specific rooms can give indications about the person's overall mobility or recovery, especially if those activities change over time. By showing these statistics on a secure web portal, the home care planning department can see and prioritise the persons whose behavioral statistics suggest that they need additional help. These algorithms are also of great value in many other application areas. For road safety, for example, it is possible to see how many road signs a driver overlooks and for commercial purposes it can be analysed in which order products are seen in a shop window. Noldus Information Technology collaborates in the eWatch project with 13 partners from 3 countries, including the TU/e, Philips and Catharina Hospital.

https://itea3.org/project/ewatch.html

CHS-Care

Integrated Platform for the Provision of Health and Social Care in the Community

REMO

Remote patient-targeted health monitoring to reduce clinical workload

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Agenda

- **Jan-Marc Verlinden, Founder of MEDrecord and HealthTalk**
  + Q&A
- **Jos van der Wijst, Partner at BG.legal**
  + Q&A
- **Milan Petković, Head of AI & Data Science R&D at Philips**
  + Q&A
- Future sessions of the ITEA Topical roadshow