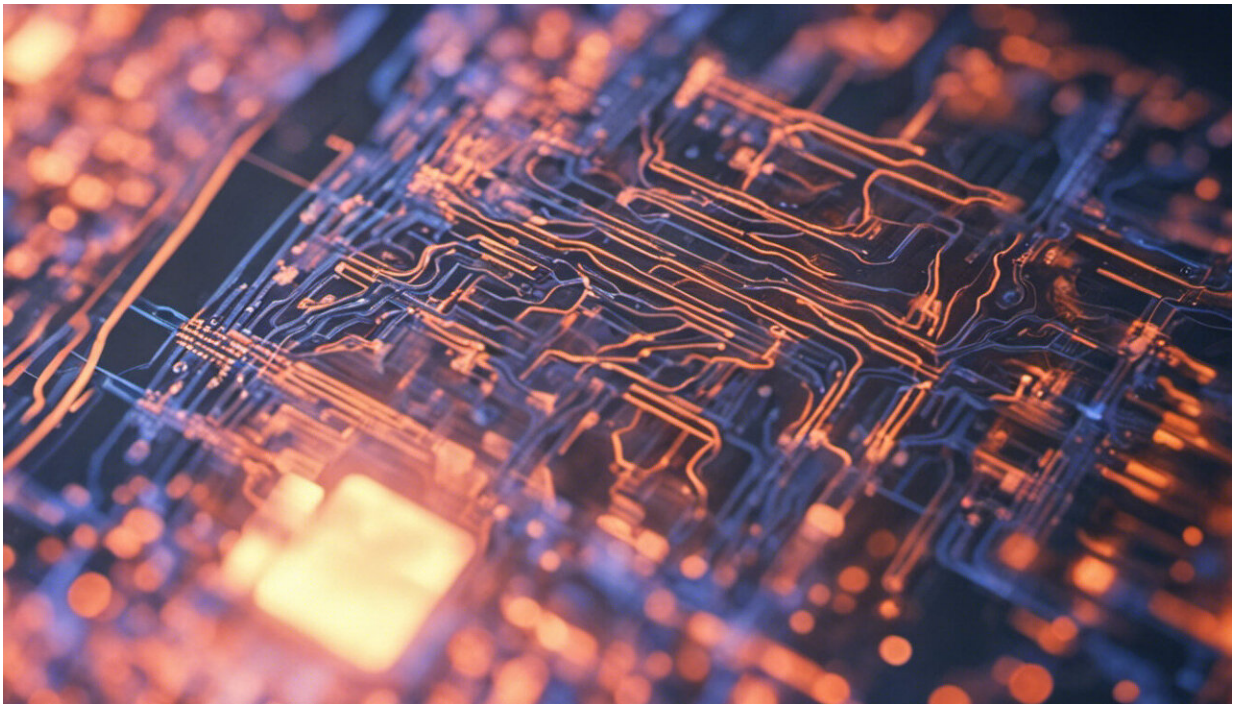


New search tools open up access to medical information

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Credit: AI-generated image ([disclaimer](#))

The EU-funded KConnect project has developed innovative online medical search and analysis tools, enabling researchers to achieve clearer insights into the effectiveness of specific medical interventions and ultimately leading to more optimised treatments.

"The key success of the KConnect [project](#) has been to make effective online medical [search](#) tools accessible to medical researchers and the public," says KConnect (Khresmoi Multilingual Medical Text Analysis, Search and Machine Translation Connected in a Thriving Data-Value Chain) project coordinator Allan Hanbury from the Vienna University of Technology in Austria. "The project results will now be further developed and should allow better insight into the effectiveness of medical interventions, as well as providing more reliable access for citizens to online medical information." Project partners are currently working with commercial clients to create specific search solutions.

Automated text analysis

The amount of written information that exists in the medical domain is phenomenal. This includes patient-specific information such as [medical records](#), as well as non-patient-specific information including peer-reviewed articles in journals that describe the results of clinical trials of interventions. To evaluate the effectiveness of specific treatments and procedures, all this text needs to be taken into account.

"There is a clear need for computer-supported tools capable of analysing all this information, which can then lead to firm conclusions on the effectiveness of specific medical interventions," says Hanbury.

"Computer analysis of text remains a challenge though, and this is even more the case in the medical domain. This is because different styles of writing can be found across scientific papers and medical records, and there is extensive use of abbreviations and of course different languages in medical records."

Accessible, reliable information

KConnect focused on two main challenges: improving medical text

analysis, search and [machine translation](#) services; and demonstrating the effectiveness of using these tools in medical record analysis and online searches of medical publications and websites. The project was built, to a large extent, on the results of the EU-funded Khresmoi project, which developed tools to search for and analyse medical text and images. Khresmoi's main focus was on visual searches for radiology images, as well as text analysis of medical publications.

Starting from this basis, new search tools were developed and tested, and are now being applied in real life situations. The medical [record](#) analysis and search algorithms have been included in the Clinical Record Interactive Search (CRIS) system at the NHS Maudsley Biomedical Research Centre in the UK. CRIS provides authorised researchers with secure access to anonymised information extracted from the South London and Maudsley NHS Foundation Trust electronic clinical records system. This enables them to look at real life situations on a large scale, making it easier to see patterns and trends and to see which treatments work for some but not others.

KConnect tools are also being used by the Health on the Net Foundation, which promotes the dissemination of useful and reliable health [information](#) online. The Foundation's new search system gives users an estimation of the readability and reliability of medical websites. A KConnect plug-in for the Chrome Browser has been released and provides users with estimates of the reliability of medical websites sourced using common search engines.

Hanbury notes that training the medical [text](#)-specific machine translation algorithms proved to be a challenge for certain languages where few relevant resources were available, such as Hungarian. Nonetheless, KConnect services now allow multilingual queries in the search engine of the Trip medical database, a [tool](#) that enables researchers to find high-quality clinical research evidence. A soon-to-be-released Trip tool using

KConnect technology will allow for the rapid [analysis](#) of multiple medical publications related to a specific disease, giving researchers an immediate overview of the effectiveness of various medications and interventions.

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