

Cognitive monitoring for chronic health conditions



Hartree Centre
Science & Technology Facilities Council



With help from the Science and Technology Facilities Council's (STFC) Hartree® Centre, start-up Ufonia is exploring the use of cognitive technologies to monitor people with long term health needs.

Challenge

With an ageing population and growing concerns about the sustainability of current models of healthcare, we need to look to what technologies are available to us to create innovative solutions. Long term health conditions are increasing and already occupy 70% of all healthcare resources. Deteriorations in these diseases are very costly to the person and the healthcare system, but are potentially preventable with proactive monitoring. A pressing issue is how to enable this monitoring in the face of increasing demands on a limited healthcare workforce.

Solution

One start-up company aiming to change that by developing a new technology solution is Ufonia. The company has developed a proof of concept system which applies cognitive computing to monitor patients with chronic conditions from the comfort of their home, at a frequency that suits both patient and doctor. This is achieved through an autonomous, natural language telephone call that can be delivered without the requirement for the patient to have a new device, app or training.

The product was created out of an idea developed at the Hartree Hack, a 2016 hackathon event aiming to enable entrepreneurs to explore and develop ideas using IBM Watson cognitive technologies. Now, one of the participants is taking the concept forward with funding, development and business support from the STFC Hartree Centre, Harwell HealthTec Cluster, Oxford University Innovation Startup Incubator and Innovate UK.

Benefits

By delivering routine monitoring autonomously and flexibly according to the needs of the patient, the technology would enable healthcare professionals to spend more time working "at the top of their licence" – that is, seeing patients face-to-face who need more complex care. The increased frequency of contact by the system would allow deteriorations to be detected earlier and ensure patients that do need appointments have shorter waiting times. Frequent check-ins could support those patients whose diseases cause them to be socially isolated. The system can also be applied to monitor patients in any situation where regular contact might be beneficial but resources are constrained. For example, following surgery or discharge from hospital or whilst taking a new medication. The system could also be extended through popular new 'smart speaker' technology.

"Everyone knows how to have a conversation. Voice is an engaging platform that mirrors the natural doctor to patient consultation and we can deliver it using a telephone – without the potential barriers of internet connectivity, downloads or training. It's a natural choice for the ageing population while having widespread applicability."

– Nick de Pennington, CEO, Ufonia

Work with us

We collaborate with industrial clients and research partners on projects that create insights and value using high performance computing, big data analytics, simulation and modelling.

By combining our world-class facilities with access to our specialists and computational scientists, we can enable your organisation to produce better outcomes, products and services more quickly and cost-effectively than through conventional R&D workflows.

With our partners we are developing the next generation of supercomputing architectures and software, combining existing best practice with innovation to deliver faster, cooler and more sustainable solutions capable of meeting the challenges of data intensive computing.

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