LCR4.0 START

European Union
European Regional Development Fund

NORTHERN POWERHOUSE

Case Study

Company Name
Northstar

Industry
Data Management

Delivery Partner(s)
Science and Technology Facilities Council

Background

From published academic research papers to patents filed in international patent databases, there are large amounts of publicly available data from open literature sources that are not currently being used. Northstar, a new company based in the Liverpool City Region, wanted to find a way to capture relevant data to repurpose scientific inventions, generate new ideas and patents more quickly and cost-effectively without relying on human researchers and information scientists.

Challenge

Northstar wanted to understand how they could use AI (Artificial Intelligence) technology to create a digital platform capable of acting as a virtual research scientist.

Solution

Funded by ERDF as part of the LCR4 START programme, Northstar worked with data scientists and AI experts at the Science and Technology Facilities Council (STFC) Hartree Centre to create a workflow capable of bridging a gap between science and application. The team had expertise in various aspects of data science, from data engineering and data standardisation to data exploitation, using their skills to deliver a proof-of-concept AI demonstrator.

Impact

This tool is capable of searching the open literature in a fraction of the time and cost of a manual approach. Using AI to dive through the breadth and depth of scientific literature rather than humans selectively searching a narrow field of patents and papers offers greater breadth and depth to scientific discovery. This has the potential to significantly accelerate the pathway to scientific discovery for companies who are routinely looking for new inventions by removing the limitations of what traditional desk-based research can highlight.

Beyond LCR4 START, Northstar plans to continue this project. Now the company has a live demonstrator, which is working on creating a user interface and web portal for the tool that embeds machine learning to self-learn from both questions and answers, outputting results in accessible and graphical formats for researchers.

All great innovations are built on what has happened previously. We wanted to find a way to capture the relevant open data that would enable us to repurpose scientific inventions quicker and generate new ideas.

This work can speed up the process of creating new patents and methodologies that can make the world a better place. Our ultimate goal is to bring the dark scientific data into the light and demonstrate the first AI at scale to achieve this.

- Steve Kelly, Northstar