

# Machine learning aids detection of anomalies in cancer diagnosis process



## Outcome

The use of computer vision and machine learning technologies resulted in the reduction in time to detect anomalies as part of the client's cancer diagnosis process. It is anticipated that this will allow medical practitioners to focus on other high value tasks. In addition the overall efficiency of the capsule endoscopy process will be improved.

The solution enabled CHI to evidence the benefits of the ongoing digital innovation in MedTech to improve medical science and diagnostics, and to commoditise a solution for use across the healthcare provider landscape, which will ultimately translate into to better patient care and improved health outcomes.

## Client quote



“For startups, speed is everything. Good for you if you can set up your own team of developers, engineers, and architects. But if you can't you want to have partner that can get you staff quickly, reliably and cost effectively. A partner where that team member has a home that makes them stay longer, learn outside the project and collaborate with colleagues. NashTech is such a partner. For the past ten years the NashTech team found the right people for my startups, startups I advise and also in my last corporate position as a global CTO.”

Dr. Hagen Wenzek  
Co-Founder, Corporate Health International



## Company overview

Corporate Health International is a multinational company working to build healthcare solutions to improve consumer medical evaluations.

-  **Client name:** Corporate Health International
-  **Product type:** Medical Technology: Electro-Medical Equipment
-  **Technology:** Azure, Python, Tensorflow, Nvidia
-  **Industry:** Healthcare
-  **Location:** United Kingdom

## The challenge

Corporate Health International (CHI) have a proprietary remote video capsule endoscopy product which is used to conduct minimally-invasive procedures to identify risk or presence of small bowel or colon cancer. This is an invaluable test but it is a manually intensive process and presented considerable challenges and limitations including long and laborious analysis as well as an increased risk of human error in missing lesions in the film. CHI approached NashTech to help increase the velocity, resilience and accuracy of the life-saving tool and diagnostic process.

## The solution

Partnering with CHI and the University of Barcelona, NashTech developed a computer vision and machine learning solution that rapidly processes capsule endoscopy video and flags when anomalies were detected. The solution is based on Python, Tensorflow, and harnesses Nvidia GPU for video processing.

The team used extensive training data and imagery from the University. The video was ingested into the NashTech solution in order to train the ML model to detect abnormal images from the endoscopic procedure. When the solution identifies an abnormality, it flags and timestamps the video so that medical practitioners can quickly navigate to the relevant image and conduct a more thorough clinical assessment and diagnosis.

The diagnostics team are able to access the data directly through the solution's user interface, and images are in a standard file format, which allows them to be imported into other solutions in the patient care ecosystem such as electronic patient records systems, so that they can be shared across the patient's care providers and the integrated healthcare system.