XENON Helps Harrison AI Democratise Reproductive Healthcare Through Artificial Intelligence

BACKGROUND

Born at the intersection of technology and health, Harrison AI's intention is to resolve the biggest challenges in healthcare.

Two brothers, born in Vietnam to mathematician parents who owned the first computer in the country and who also coached children to code, are on a mission to make healthcare more scalable. They are doing this by using their collective business, technology and clinical expertise.

This sounds like a bold aim, for a company that is barely two years old but it has arguably made more progress in reproductive healthcare during that time than in the decade prior.

CHALLENGE

Sydney-based, Harrison AI's founders were introduced to a truly human challenge to resolve at Virtus Australia, a leading global provider of assisted reproductive services. Namely, how to leverage a new cutting-edge monitoring technique used as part of the IVF process to improve the selection of embryos for successful pregnancies.

This new technique involved image capture of embryos, at every ten minutes. Images are then stitched together to create a video that shows growth of embryos.

The change from a manual observation process to a time lapse video was groundbreaking, but came with its own challenge—a very large video file with many data points to evaluate. As a result, beyond the video, not much was done with the data.

Harrison AI ran pilots on its platform, known as Ivy AI, using NVIDIA® GPU technology to analyse the vast amount of data for predictive modelling at scale.

As pilots progressed, the team recognised that with increased compute power, the better the transparency, predictability and accuracy of this procedure improved.

Harrison AI is founded by Aengus (pictured) and Dimitry Tran

SOLUTION

Based on previous positive experiences with NVIDIA® solutions, Harrison AI approached XENON, an NVIDIA® Elite Partner, and the pioneer of introducing GPU technology to Australia, for new technology to power the Ivy AI platform.

XENON is a high performance computing consultancy specialising in advanced, customised solutions for research, sciences, health, and academic organisations, as well as other industries with highly specialised technical requirements and complex datasets.

The team at XENON recommended the NVIDIA® DGX Station™, the world's fastest workstation for leading-edge AI development. This fully integrated and optimised system enables teams to get started faster, and effortlessly experiment with the power of a data centre on premise in a company's own workspace.

XENON preconfigured the system and installed and tested applications at its own lab. Harrison AI then tested the platform via remote access. It's this approach that delivered cost savings and efficiency for Harrison AI, and avoided operational disruption - indeed, the Harrison 3 that Ivy AI runs on, was up and running immediately.

"It's hard not to be excited about the scale of the challenges you can solve with the right technology [NVIDIA], and the right technology partner [XENON]. What they've built in Harrison 3 looks and sounds so unassuming in the office you could almost miss it. We couldn't achieve these breakthroughs without it," said Aengus Tran, Chief Data Scientist at Harrison AI.

BENEFITS

The new Ivy AI platform built by Harrison AI now allows embryologists to identify the embryo(s) with the best chance of achieving a successful pregnancy as quickly as possible.

Ivy AI can also be used in locations where expertise is not always available, with the ability to significantly scale in the future.

Cost considerations will prove a particular benefit and this impacts all involved, including the public sector where it will be easier to provide a more accurate service at a lower cost.

"Essentially as a team, we have reduced the time and improved the accuracy of a process that can be both agonising and time critical. A clinician-led approach means we can continue to focus on the health outcome while leaning on XENON to provide the technology expertise, professional services and support," added Aengus Tran.

FUTURE

Embryologists continue to make the final decision on which embryos are ultimately selected, but using the combination of detailed data sets and AI / ML technologies, they are able to make better decisions, faster—ones that fundamentally impact human life.

And because Ivy AI perpetually self-learns, accuracy and predictability continue to improve.

It doesn't stop at IVF—Harrison AI is already looking at using AI in other health applications, the next major effort being radiology workflow tools.

"The name Harrison is derived from a revered figure in the world of medicine who represented the desire to share and transfer medical knowledge for society's benefit. And that's exactly what we stand for—faster, better, cheaper, more accessible healthcare—and we need technology and expert partners, like XENON who can help us achieve that, at scale," added Aengus Tran.

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>
> **Aengus Tran**
> Harrison AI Founder

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