

Seneca's Digital Health Hackathon leads to scalable business solution

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Lorinda Lee, Chief Human Resources Officer at Oak Valley Health, wanted a smart search engine to help her team answer the many employee queries they receive.

The community healthcare organization that oversees Markham Stouffville Hospital, Uxbridge Hospital and a Reactivation Care Centre in North York has more than 3,500 employees, who regularly approach the HR department for information.

Thanks to a recent applied research project with [Seneca Innovation](#) and Trinetra Systems Inc., an AI-powered HR data management prototype has been developed that, once live, will help large organizations like Oak Valley Health field inquires more effectively.

"It was pretty amazing," Ms. Lee said of the system built by Seneca students in partnership with Trinetra, a Mississauga-based software development and services company.

The organizations were initially brought together at [Seneca's Digital Health Hackathon](#) in March 2021. More than 600 students registered for the event, sponsored by Oak Valley Health and other companies, and chaired by Mark Buchner, Professor, School of Information Technology Administration & Security.

Ms. Lee's HR data management dilemma was presented as one of several challenges at the hackathon. After the competition, Neeraj Vashist, Trinetra's CEO, saw potential to develop the solution further.

With Oak Valley Health willing to pilot a project and Trinetra as an industry partner, Mr. Buchner worked with Seneca Innovation to get research funding.

Mr. Buchner became the Principal Investigator and oversaw a team of four student researchers from the [School of Information Technology Administration & Security](#) and the [School of Software Design & Data Science](#). They included Wing Yan Chan, Project Manager; Efat Gorji, Master Programmer; Kaveh Eshraghian, Web Developer; and Samuel

Olayiwola, Technical Lead.

Together they tackled the problem of how to create a tool that could sift through HR policies, collective agreements and manuals to pull information in response to questions HR teams receive daily.

The researchers used algorithms to turn document snippets into numbers through a process called vectorization. They used a similar process to turn the HR questions people typically ask into vectors. Finally, they ensured the questions and answers matched correctly in the background and packaged everything on an intuitive website.

“The Seneca team was incredible,” Mr. Vashist said. “If it was up to me, I would have hired everyone.”

As it was, Trinetra had an opening that was a good fit for Mr. Eshraghian, who graduated from the [Project Management – Information Technology program](#) in the summer of 2022. He was hired before the project was completed.

Trinetra is now exploring options to see if they can commercialize this AI-powered product.

“Because the tool is scalable, it could be used in the health-care sector or adapted to support other industries,” Mr. Vashist said.

Ms. Lee agreed and said she was happy to help students gain invaluable experiences through this collaboration.

“When you sponsor a hackathon, you are not thinking of coming out of it with a product,” she said. “It was great to give students the experience of managing a real-life project.”

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