

# G-MEN



From left, software engineer Michael Fischer, scientific development manager Kyle Weston and data scientist Ludovic Alarie-Vezina solve issues facing various government ministries.

## Victoria tech company using artificial intelligence, machine learning to solve government problems

A Victoria company with a dozen employees is among the latest graduates of a B.C. government program that offers a leg up to emerging tech firms.

Kinsol Research, which specializes in artificial intelligence and machine learning, was looking for more local work when it landed a spot in the province's Startup in Residence Program, known as STIR.

"Most of our clients have been Silicon Valley companies," said Michael Fischer, Kinsol's business-development engineer. "We want to diversify more and we saw the public sector in B.C. as becoming a really good place to try to do that."

"Artificial intelligence is becoming pretty hot these days and government is interested to see how it's relevant for solving a lot of their business problems."

Kinsol, which takes its name from the famed trestle bridge in the Cowichan Valley, spent the past couple of years meeting with people in different ministries to explain how artificial intelligence and machine learning could work for them.

Eventually, they landed a spot with the Startup in Residence Program.

Modelled after a similar initiative in San Francisco, STIR embeds companies in government ministries for 16 weeks to solve a particular problem.

"It's a way of us supporting the tech industry and getting solutions for government in a timely manner," Minister of Citizens' Services Jinny Sims said in an interview.

The process unfolds at, what for government is, a breakneck pace.

"Nobody would ever believe that government could do this kind of a procurement in anywhere from five to 17 days," Sims said. "People usually

tell me it takes them longer to get a letter back from a government."

Once they are selected, the companies get \$10,000 and the government gets help resolving a nagging problem.

"Our own staff have had input in every iteration and they have played a role in finding the solution," Sims said. "That, I think is the real strength of it."

"We're not talking about airy-fairy solutions. These are real down-to-earth problems facing different ministries where we're seeing where technology can help to assist and make life better for British Columbians."

In Kinsol's case, the company was selected to help B.C.'s Environmental Assessment Office, which reviews major projects to determine possible environmental, economic, social, heritage and health effects.

The office receives reams of material from the public during comment periods and staff have to read through everything to flag the key issues or topics raised in each document. >

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Kinsol Research staff, from left, Arnold Kalmbach, Darren Fairall, Kyle Weston, Daniel Templeman, Ludovic Alarie-Vezina, Michael Fischer, Dimitri Marinakis and Neil MacMillan.

"They were looking for a solution that would help speed up this process," said Fischer, who managed the project.

Kinsol's team of data scientists and software engineers applied a type of "machine learning," which essentially means training a machine to do one task really well. In this case, the Kinsol team

used cutting-edge techniques to train a machine to read and understand public comments and then identify the key themes. The model does more than simply search for key words or phrases, Fischer explained. "It's actually inferring meaning."

A staff member still has to check the machine's work to see whether particular

issues or topics were properly flagged. "So it's not taking the human out of the loop, it's just helping to speed up the process," Fischer said.

The model also has the ability to plot its findings on graphs and charts so that anyone can quickly see the top issues being raised during public comment periods.

"You get quick, actionable intelligence for decision-makers and stakeholders," he said. "You see, 'Oh, wow, lots of people are really worried about water quality or really worried about salmon.'"

Fischer said government so far is "very happy" with the product. "It's shown a lot of promise already in these short 16 weeks and it can be expanded to do so much more."

He said Kinsol is hoping the work leads to further government contracts, but noted that the STIR program has other benefits as well.

"We get our name out there," he said. "We're associated with government that's put trust in us to solve a problem for them and show that we can do this. We're a small company, but we can work with big customers like government and actually make a real impact."

"It shows that there is good local talent here in B.C. for, in our case, artificial intelligence and machine learning. It's been a great advertising tool for us and showcasing our ability."

Sims says she hears the same thing from other companies, most of which have fewer than 15 employees.

"As soon as they can put on their resume that they have been working with the government of British Columbia, they get picked up by other governments across the country and around the world."

One of the added benefits for companies is that they retain the rights to the products they develop and can market them to other ministries or around the world.

"We do not own it; they own it," Sims said.

"The biggest plus for them is not the huge amount of money they're getting — because you can see that we're getting a pretty good deal for \$10,000 — but for them it's the fact that they will own the solution and the solution will have been tested out in the field with government." **C**



TEXT: LINDSAY KINES

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