UNIVERSITY OF TORONTO
DALLA LANA SCHOOL OF PUBLIC HEALTH

VECTOR INSTITUTE

Initiative Focuses on Exploring Global Health Challenges Through AI Based Solutions

The inaugural Global Health & Artificial Intelligence (GHAI) Challenge has declared its first and second winning teams. The winning team proposed an AI-based platform to tackle dengue, one of the top ten global health threats according to the World Health Organization. The second winner pitched a conversational AI agent to help older adults navigate local transit systems.

The GHAI Challenge is a partnership between the Centre for Global Health at the Dalla Lana School of Public Health and the Vector Institute. The initiative engaged graduate level students from multiple disciplines to work on complex global health challenges using AI related solutions. Nearly sixty students from the Dalla Lana School of Public Health, Rotman School of Management, and various STEM (Science, Technology, Engineering and Math) programs signed up for the challenge.

Students chose a global health problem that aligned with one of the 17 Sustainable Development Goals. Five Sustainable Development Goals (SDGs) were picked - SDG#3 (Good Health and Well Being), SDG#4 (Quality Education), SDG #9 (Industry, Innovation and Infrastructure), SDG#11 (Sustainable Cities and Communities) and SDG#13 (Climate Action). All teams then had to identify a more focused global health challenge and submit a problem identification statement in January.

Teams had most of the winter term to get to know one another, gain a deeper understanding of their problem and identify potential solutions. During this time, student teams had access to workshops on AI & Machine Learning, Design Thinking and AI & Ethics. They also each benefited from the advice of a machine learning advisor from the Vector Institute and an expert team advisor faculty member.

“The Challenge gave students a unique interdisciplinary learning opportunity to delve into a complex global health issue, learn more about AI applications while considering ethical issues”, says Di Ruggiero, Director, Centre for Global Health.

Final solutions were scheduled for in-person presentations on March 21st; however due to the COVID-19 pandemic, presentations (including slides and audio narration) were submitted electronically for evaluation. The teams demonstrated flexibility and resolve by effectively adapting to the changing context.

The winning team includes Collaborative Specialization in Global Health students Miranda Loutet (PhD Epidemiology), Archchun Ariyarajah (PhD Epidemiology), Lauren Hamill (Master of Public Health – Health Promotion), Sam Kochhar (MBA) and Nafisa Kanji (Global Executive MBA). Their approach addressed a Dengue, a disease that affects up to 400 million people annually. Their proposed solution involves an AI based platform to predict future outbreaks and help local health and government authorities with response preparedness.

“The challenge ended up taking a personal turn for me when we zeroed in on dengue as our focus area. I got dengue during a vacation in India in 2014. Luckily, I recovered but the experience of the disease was excruciating. It was incredible to be able to work on a solution, which has the potential to eliminate dengue through pre-emptive mitigation. The thought that my contribution can save other people from getting this painful and sometimes fatal disease makes the long hours spent working on this challenge well worth it”, says member Sam Kochhar.

Second place winners are Ryan Khurana (Masters of Management Analytics), Raima Lohani (Masters of Health Informatics), and Jean Paul Soucy (PhD Epidemiology) for proposing a conversational AI agent (in a mobile application and toll free number) that would help older adults to navigate local transit systems while also collecting feedback for continued transit planning. The solution is a response to the growing older population who often experience decreased travel autonomy, a lack of easily navigated environments, and which can lead to mental health issues related to social isolation.

“This challenge turned into so much more, giving me the opportunity to work with such a great interdisciplinary team who I learned so much from as well, and giving us the chance to use our different strengths to address a real world problem. It also sparked an even greater interest in AI and its different applications in global health innovation. I plan on taking further programming and AI courses to expand on what this challenge taught me. I am so glad I went outside my comfort zone to take part” says participant Lauren Hamill.