

# Hack Aotearoa

## Article #4

---

≡ WORDSHOP

JANUARY 18, 2020

1 PAGE

343 WORDS

# AI has mastered games, so why hasn't it mastered medicine?

*by Jamie Small*

Machine learning artificial intelligences (AIs) have beaten the world's best players at Chess, Go, and StarCraft II, but despite years of trying they haven't yet cracked medicine.

"Why is it that medicine is harder than video games?" asks Doctor Matthieu Komorowski, an experienced doctor, medical researcher and data scientist at the Hack Aotearoa 2020 conference.

"Starcraft is very complex," he says. The algorithm has infinite potential decisions to make in real time, but it doesn't come close to the complexity of human health.

"The human body is messy. If you were to look at the ratio of what we know to what we don't know, it would be staggering."

The fundamental issues of trying to use AI in health, Matthieu says, are that real medicine happens in a high-risk environment, that environment is not fully specified, there are limited training data for the AI, and it is impossible to learn by trial and error.

With video games, AIs learn by running millions of simulations trialling minutely different strategies until they find the ones that are most likely to be successful.

AlphaStar, the AI that mastered StarCraft II, trained itself by running simultaneous simulations totalling the equivalent of 200 years of game time.

"Obviously we can't do this in medicine," Matthieu says.

A machine learning trial and error of this sort in the real world would result in killing a lot of patients.

In the real world, we have to train AIs using historic data gathered from real hospitals and clinics.

This data is imperfect, incomplete, and limited to hospitals and units with good data gathering practices, the ability to use and share the data, and the resources to do so.

Matthieu, and others in the medical data science field, are working on innovative algorithms that will make use of this data to make a real difference to patients' health.

"No patient is ever going to be helped until we validate this, until we bring it to the bedside," he says.