

Leveraging Artificial Intelligence to Combat Coronavirus and Improve Healthcare

By Neil Chamaki, J.D. Candidate 2022 | April 10, 2020

How is [artificial intelligence \(A.I.\)](#) useful to combat a health pandemic? Consider the significance of computer systems that mimic human intelligence to perform difficult tasks – and autonomously self-improve based on information they collect – at a rapid speed. With the recent injection of A.I. in the biotechnology industry, it has become increasingly apparent how useful it will be to beat coronavirus (COVID-19) and dramatically improve the American healthcare system thereafter.

Since its inception, COVID-19 has wreaked significant havoc, having spread to over 100 countries. There has been a reported two million cases with over 100,000 deaths, [according to current statistics](#). Perhaps the most pervasive aspects of the disease are its non-physical effects, such as triggering an economic crisis – with an estimated [ten million American jobs lost](#) – and hitting society’s morale with a heavy blow. However, A.I. technology is being used by medical professionals to mitigate, and hopefully eliminate, these harms.

An Israeli biotechnology company, [TytoCare Ltd.](#), is using A.I. in at-home medical exams to provide doctors with palatable information to analyze when making a diagnosis. Chinese company, [Huawei Technologies Co.](#), is using A.I. as a diagnostic tool to detect signs of COVID-19 from CT scan data. Further, companies are leveraging A.I. algorithms, machine learning, and natural-language processing to analyze [social media data to predict human behavior](#) and potential future outbreaks.

[Microsoft recently partnered with ImmunityBio](#) to model the movement patterns of the “spike protein” that causes COVID-19 to penetrate human cells. Similarly, [Adaptive Biotechnologies](#) is using A.I. to produce a test that provides a detailed map of how the body reacts to COVID-19, which can be analyzed by doctors to better understand the disease. [In the Silicon Valley](#), Zuckerberg San Francisco General Hospital is using biometric sensing “smart rings,” that are worn by healthcare workers to monitor their vital signs – like temperature, heart rate, and oxygen saturation – to predict the early onset of COVID-19.

A.I. that predicts adverse events by collecting and analyzing data from wearable technology will open a wide range of opportunities for preventative medicine. Detecting that someone is ill as



early as possible will allow doctors and healthcare professionals to help patients recover faster, avoid suffering, and prevent death. Even beyond the COVID-19 pandemic, the presence of predictive A.I. in the medical industry is crucial for the detection and prevention of adverse health events like cardiovascular disease, Parkinson's, and ALS, among many others.

I have personally been involved in the use of A.I. in the MedTech sphere, as a co-founder of [Enabyl Inc.](#), a cloud-based A.I. company. My colleagues, Jonathan Zia (MD/Electrical Engineering PhD Candidate at Emory Med and Georgia Tech) and Vince Monardo (Electrical Engineering PhD Candidate at Carnegie Mellon) developed an A.I. framework called Foresight that allows IoT-connected devices and apps to update their functionality in real-time in response to patient data. Enabyl's technology learns to predict a patient's needs and health risks, and also calibrates to each user to collect more accurate data.

There is a looming fear that A.I., if left unregulated, can be problematic. Concerns about A.I. taking jobs, being weaponized, or used to collect sensitive data that violates privacy rights, are legitimate. However, with proper governmental regulation and the enforcement of ethical practices, A.I. can be leveraged to radically transform the American healthcare system. A.I. technology has the capacity to not only treat patients that are currently suffering from illness, but to also detect and prevent future illness at a low cost. In turn, healthcare can be made far more affordable for millions of uninsured Americans.