Executive Summary: Team Octopus COVID-19 Hospitalization Forecaster

The COVID-19 pandemic puts unprecedented strain on the American healthcare system, and the response is harder because the amount of stress caused by COVID-19 changes quickly. State and local health authorities need to issue guidances on elective procedures and staffing, based on guesses.

There are many models out there predicting COVID-19 case rates. However, predicting cases has several drawbacks that make it less useful to the healthcare industry.

- The time from diagnosis to hospitalization can vary from no time to several weeks.
- The percentage of cases that result in hospitalization changes over time, and is know to depend substantially on vaccination status, people's behavior, etc.

Enter: The Team Octopus Covid Hospitalization Forecaster! We trained a machine learning model to predict the number of hospital beds needed for COVID-19 patients, up to 14 days in the future.

Benefits of our forecaster:

- It cuts out the noise in the data caused by mild cases and just highlights the needs of patients with severe COVID-19.
- The predictions are actionable: they can help healthcare providers figure out when to request or donate resources.
- We know our data is high quality because it comes directly from the CDC.
- The software is free and open source https://github.com/czkaiweb/ErdosProject-COVID/
- The tool is easy to use (visit our website http://130.111.196.10/).