Stage 4 Cancer Patients Intervention

TeraCrunch Socratez™ Platform & Methodology

DATA PREPARATION

Identifying fields for the model, conversion of categorical data types to numeric types, featurization of text data, and joining of relevant tables in a relational database. Data imputation for missing values

FEATURE ENGINEERING

Feature engineering is the process of using knowledge of the data to create features that make machine learning algorithms work. Coming up with features is difficult, time-consuming, requires expert knowledge.

MODEL TRAINING

Explores & identifies best options from a range of machine learning models (generalized linear models, decision trees, random forests, gradient boosted decision trees and neural networks).

TEST & SIMULATION

Explores changes in predictions if inputs are changed. This allows exploration of the underlying causal effects in the model.

For more information contact:
advancedanalytics@teracrunch.com

Case study

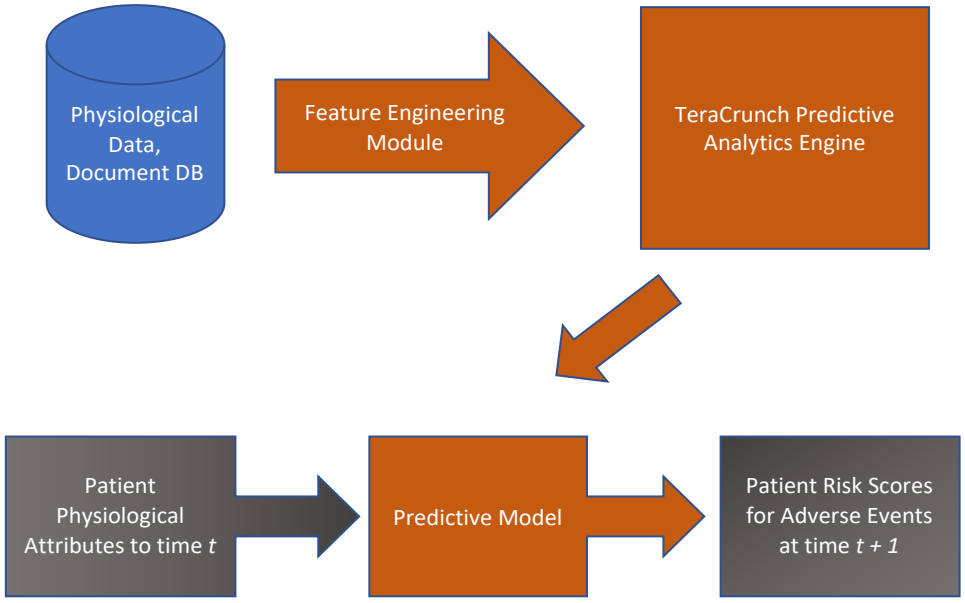
Studies have found that timely intervention can extend length of life and improve quality of life for stage 4 cancer patients. TeraCrunch provides a solution to a team of oncologists at a major hospital to predict if and when study participants are at risk for an adverse event, allowing clinicians to intervene before the event occurs.

The Client

Oncology clinic at a major hospital system

TeraCrunch Solution

TeraCrunch collects physiological data continuously for study participants. The data are captured by wearable devices, then obtained by TeraCrunch via API and stored in a document-based database. The data then undergo a series of transformations and aggregations and are then joined with deidentified event history data from the hospital's EMR system. At that, a predictive model is learned by TeraCrunch's analytics engine and serialized to perform real-time predictions as new physiological inputs are obtained from the wearable devices.



TeraCrunch hosts the predictive model and provides predicted risk scores across a set of adverse events, including visits to the emergency department, unscheduled visits to the clinic, and death, among others. The predictions are provided in tabular format and absorbed back into the EMR system to allow for alerts in the typical workflow of the clinic.

The predictive models are retrained at regular intervals as more participants enter the study and longer time series are captured for the physiological measures.

Impact of the Solution

Stage 4 cancer patients are monitored and intervened in a timely manner to extend Cancer patients life span.

TeraCrunch