Customer

A healthcare center operated by a public research university located in United States. This center provides preventive health checkups, periodic health monitoring, treatment for variety of illness and other healthcare services.

Problem Statement/Requirements

In order to improve diagnosis and treatment outcomes among their dialysis patients, the customer sought to implement a data analytic solution to identify gaps and improve their current methods.
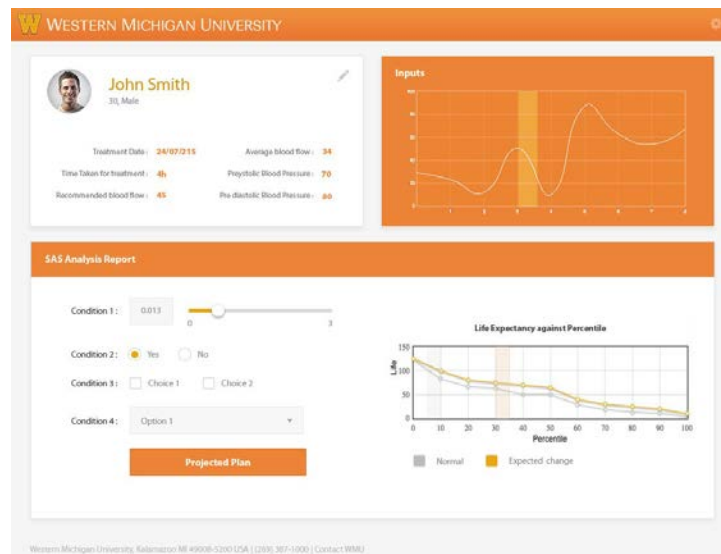
Customer had access to 1 million learning records related to their patients' historical dialysis. By analyzing these huge datasets, they wanted to adopt an evidence based care approach to achieve the following:

- Fast and accurate diagnosis and treatment
- Save money for treatment costs
- Similar cases recommendations
- Ability to view patient history graphs
- Observation based clustering

Solution Methodology

SFO has developed an advanced data analytics solution that can solve all of the stated customer challenges. Our solution enabled the customer to:

- Integrate physician's expertise & medical knowledge with patient characteristics
- Generate patient specific recommendations adopting data mining and artificial intelligent tools and techniques
- Support physicians to make quick and right decisions at the point of care

Brief description of product:

Solution Components

A. Technology Stack (Cloud Server Application)

- ❖ UI Layer : jQuery, JSP
- ❖ Service Layer/DAL: Spring/Hibernate
- ❖ Database: HBase

B. Decision Engine (Data Science & Analytics)

a) Decision Engine

- ❖ Classification & regression trees
- ❖ Machine learning data model
- ❖ R language based decision engine wrapped over as Java library

b) Data store with 1M patient records for 2500 patients with Kidney Dialysis Chronic Treatment

Impact

The solution has delivered the following features and capabilities for the customer:

- ❖ Patient Similarity
  - ▪ Find patients who display similar clinical characteristic to the patient of interest.

- ❖ Drug Similarity
  - ▪ Find drugs which display similar pharmacological characteristic to the drug of interest.

- ❖ Personalized Medicine
  - ▪ The right patient with the right drug at the right dose at the right time.

About SFO

SFO Technologies Pvt Ltd, the flagship arm of the diversified conglomerate, the NeST Group provides end-to-end design-engineering-software-manufacturing solutions to clients across geographies such as the USA, Canada, Europe, Middle East, South East Asia, Japan, Australia, and India. SFO has invested in building competence, scale and standards compliant process framework, in PCBA, fibre optics, Cable & wire Harness, Magnetics, High Level Assembly, VLSI design, embedded software development, etc. SFO's capabilities transcend the plain vanilla "Build-to-Spec or Build-to-Print" EMS and our ODM+ solutions are rapidly re-defining standards for the OEMs across Aerospace & Defence, Communications, Transportation, Healthcare and Energy & Industrial domains. .

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