ClosedLoop.ai

CASE STUDY

Achieving Agile AI/ML in Healthcare

How Healthfirst Accelerated its AI/ML Development Cycle with ClosedLoop

healthfirst®
Health Insurance for New Yorkers

About Healthfirst

One of New York's **largest** not-for-profit health insurers[2]

1.7 million
members

40,000+
providers

80+
participating hospitals

8
data scientists

Impact Summary

1,590
total features in ClosedLoop

978
custom features built

612
features generated from ClosedLoop templates

17
currently deployed predictors, including 143 previous iterations and experiments

12
ad hoc predictors, including 24 previous iterations and experiments

Background

As a healthcare innovator and early pioneer in value-based healthcare, Healthfirst realized that developing robust predictive capabilities was critical to improving member outcomes while reducing costs, and prioritized developing agile artificial intelligence/machine learning (AI/ML) capabilities. To quickly implement standardized infrastructure, Healthfirst selected ClosedLoop, provider of a comprehensive suite of tools and pre-built templates supporting all aspects of healthcare machine learning. ClosedLoop's tools enabled the team to rapidly build, iterate on, and validate predictive models, as well as deploy them to clinical end-user workflows.[1]

> ***We're able to store and operationalize analytics directly from ClosedLoop. That's driving real value—it's accelerated the implementation of key insights into clinical workflows and it allows us to more easily account for all of the different factors that influence intervention decisions.***
>
> – Christer Johnson, Chief Analytics Officer

[1] As of 2021, Healthfirst is an investor in ClosedLoop.
[2] Based on revenue in calendar year 2020.

Challenge

In its drive to improve patient outcomes while reducing costs, Healthfirst decided to invest in internal data science capabilities and own AI/ML development in-house. After initial successes, Healthfirst needed to scale data science efforts beyond initial model development. However, their prior data science infrastructure did not provide healthcare-specific functionality. This hindered experimentation and slowed iteration velocity, limiting the team's ability to test and deploy new models.

Solution

Since August 2019, Healthfirst has used ClosedLoop's healthcare-specific data science tools to bring an agile approach to their AI/ML development process. ClosedLoop enabled Healthfirst to automate most data cleaning, data normalization, feature engineering, and model training tasks. Healthfirst was then able to easily build, share, and reuse customized process configurations, ML features, and predicted outcome definitions. In addition, Healthfirst was able to streamline deployment, enable continuous model performance monitoring, and integrate predictions in existing workflows using ClosedLoop's ML Ops capabilities and API.

Results

With ClosedLoop, Healthfirst's analytics team has enhanced its ability to train, test, and deploy AI-based models. They have developed 978 custom ML features to supplement 612 features created using ClosedLoop's ML feature templates. From this set of 1,590 features, Healthfirst has deployed 17 models that predict a variety of outcomes, along with 12 ad hoc predictors that have been used to assess social determinants of health and COVID-19 vulnerability.

Looking Ahead

Healthfirst's data science team has minimized time spent on repetitive, low-level tasks and is now able to experiment at scale, driving value for the whole organization. The team plans to deploy additional predictive models that will identify members for inclusion in high-touch, team-based primary care programs.

Make predictive AI/ML a core element of your care strategy.

To learn more about the ClosedLoop platform, content library, and solutions, contact us at sales@closedloop.ai or visit www.closedloop.ai.

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