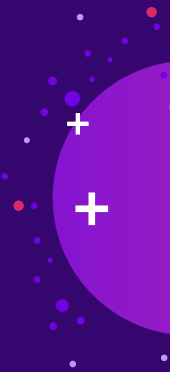# The MDClone ADAMS Platform

NLP Overview

MDClone NLP Overview

Raw healthcare data are often unstructured and difficult to use. Leveraging MDClone's Natural Language Processing (NLP) application within the ADAMS Platform brings order and structure to any data environment in rapid cycles.

A Powerful Query Engine

The NLP application within the MDClone ADAMS Platform allows any user to extract specific traits from free-text documents and combine information with structured data to enrich the available data.

A simple document tagging process leads to effective models and accurate output results with little to no training required. As a result, the end user is not required to have previous NLP knowledge, understand machine-learning, data programming, or statistics. Standing on its own, or loaded as structured events, users can query all available events, instantly and independently.

The MDClone NLP Difference

+ Continuously refresh data sets as new unstructured documents are added

+ Customizable and collaborative platform

+ Fast time from model training to results

+ Integrates with any NLP model

+ NLP knowledge not required

Example: Gene-Marker Extraction

FROM UNSTRUCTURED DATA

on January 2020, ROS1 and AE3 were strongly positive, while ALK was focally negative

TO STRUCTURED DATA

patient_id	date	marker	result	modifier
1234	1.1.2020	ROS1	positive	strongly
1234	1.1.2020	AE3	positive	strongly
1234	1.1.2020	ALK	negative	focally

Successful Use Cases

Diagnosis List
1 Rule = 4M Records

Coronary Calcium Scores
10 Rules = 5800 Extracted Values

Foot Deformities
20 Rules = 5000 Validated Indications

Transform complex data into meaningful, actionable insights

MDClone's NLP application within the ADAMS Platform is able to consume large amounts of data, process and synthesizes the content, and produce pertinent information for clinicians to digest, analyze, and spur into action. Since NLP applications are always learning, the application gets more and more accurate as data is loaded, time passes, and the tool is utilized.

Historically, manual chart processing could take organizations weeks, months, and even years to review and process chart notes, health records, and clinical documentation. As NLP becomes more and more advanced, its able to understand physician notation more accurately and process that data accordingly.

MDClone's NLP application has been implemented in numerous hospital and clinical settings, quickly impacting patient care and saving lives through identification and early treatment, via continuously automated data updates.

Real-world Use Cases

Sheba Medical Center:

Running dozens of NLP Sessions in different areas, repeatedly and automatically loading data and QueryApp results.

+ Identifying BRCA-positive prostate cancer patients for additional study

+ Retrieve endometriosis diagnosis, written only in free text, to complete EMR documentation

+ Pharma specific: Identify metastatic status, tumor markers, ECT treatments

Assuta:

Creating patient lists for further treatment and operation.

+ Recruit patients for orthopedic surgery based on CT/MRI results

+ Recruit patients for a new or follow-up exam based on results of previous exams

+ Update lists on a daily to monthly basis, recognizing some patients already had surgery based on this list