

Decooda's Cognitive Analytics and Text Mining Platform

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ABSTRACT

Text analytics has become a catch-all phrase referring to the analysis of unstructured data to extract information from text. This paper describes Decooda's novel approach to gaining relevant and high quality insights using text analytics.

INTRODUCTION

[Decooda's Cognitive Intelligence Machine](#) is a text analytics engine that has been built on top of Decooda's Liquid Data Platform. Decooda's Liquid Data Platform is a proprietary Massive Parallel Processing (MPP) platform designed to support the streaming, real-time or batch processing of extremely large data sets of both structured and unstructured data.

THE LANDSCAPE

As organizations try to understand and harness their big data, we are beginning to notice an ever increasing interest in text analytics. Deriving quality information from text can be accomplished in multiple ways. An analyst who has a good understanding of the various methods will be better suited to choose the right tool for the job.

NLP is a large field of discipline with methodologies ranging in complexity from simple word frequency counting to speech

recognition and language understanding.

Some of the more common tasks that are explored utilizing NLP are:

- Summarization
- Entity recognition
- Part of speech tagging
- Entity relationship identification
- Sentiment analysis
- Topic modeling

BEYOND NLP

As a big-data data science platform, we are focused on enabling these forms of analytics and more. Decooda chose to automate and scale the complexities around big data processing so you don't have to. You can now focus on what matters most: the analytics.

Given the varied and complex world of NLP, we found our niche in Cognitive Analytics. Decooda has a team of Ph.D's in cognitive psychology who are focused on understanding human emotion so we can model and extract it from text. We aim to gather insights into how consumers think and feel in order to predict how they will act. Peeling away the layers of the onion so to speak, we obtain a deeper understanding of why a consumer feels the way they do and what the drivers are that make them feel that way.



It's one thing to know if consumers are angry, but it is far more actionable to understand why they are angry.

The drivers of emotions and other cognitive states become interesting metrics to track over time. When we can detect, measure, and understand what are the drivers for the emotions, we can implement strategies to minimize the impact of those drivers and track the improvement over time. That is, we can measure the extent to which a given driver is leading to more anger or less anger, or is remaining stable over time.

MACHINE LEARNING, STATISTICS AND ANALYSIS

Machine learning and predictive analytics in particular are having a huge impact on data analysis, yet there is a shortage of skill sets to enable this type of analysis. The demand for this type of expertise exceeds the supply. The shortage of data scientists and decision scientists make it far more important for technologies to bridge the gap between business analysts and data scientists. Decooda succeeds in bridging that gap so that our customers are equipped to become the decision scientists themselves. While a Ph.D. in data science could take 6 years or more, our platform equips customers with all the resources they need to do advanced data science and cognitive analytics with minimal training and without a formal degree in the domain.

Our platform simplifies and automates the task of complex predictive analytics for the business analyst so that anyone in an organization can use it. However, our platform also provides all the standard data science tools so your resident data scientist can accomplish his or her more advanced analytics. Specifically, the Decooda platform provides:

Machine Learning Classifiers:

- Bayes
- Neural Networks
- K-Nearest Neighbor
- Forest and Trees
- Support Vector Machines
- Gradient Boosting

Statistical Modeling Techniques:

- Multinomial Logistic
- Confirmatory Factor Analysis
- Principle Component Analysis
- Exploratory Factor Analysis
- T-Test
- Simple Regression Analysis
- Advanced Regression Analysis

Text Analytics:

- Word Frequency Calculation
- Term Frequency Analysis
- Sentiment Analysis
- Emotion Detection
- Persona Detection
- Performance
- Purchase Intent

Textual Classifiers:

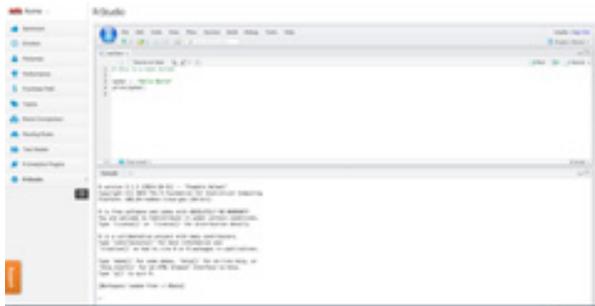
- Decooda's Proprietary "Language Of" Classifier
- Boolean Classifier
- Regular Expression Classifier

EXTENSIBILITY

We realize that in this rapidly changing analytics world, extensibility is of great importance.

Decooda's platform is extensible with R, which is currently one of the leading data science platforms on the market.

R is a programming language for statistical computing and graphics. If a type of analysis does not exist within the Decooda platform, it can be created using R scripts. Decooda provides the tools so you can create your own advanced analytics solutions in R and share those solutions with the rest of the users in your organization.



INTEGRATABLE

Decooda can be embedded within the workflow of your organization. Decooda deploys a simple RESTFUL API (Application Programmers Interface) that allows your development team to integrate our insights into existing products, workflows, or analysis with a simple call to our API:

<http://api.cypher.decooda.com/api/score>

CONCLUSION

Decooda's Cognitive and Text Analytics platform is a big data analytics platform with novel insights, and high performance. It is simply and elegantly designed to keep you focused on what matters most. The platform has simplified complex data science techniques in order to make quality insights available to individuals at any level of experience, education, or training. However, the platform is also fully extensible and integrated with R Studio so that seasoned data scientists can accomplish complex analytics on par with their training and expertise. The goal of our platform is to make everyone a data scientist who is not already one, and to make existing data scientists even more productive, agile, and efficient. By providing key cognitive science, text analytics, linguistics, and data science methodologies within one easy to use platform, we intend to reshape the way our customers analyze data and unearth novel insights for their business.

About Decooda

Decooda delivers the facts that inspire every level of an organization to embrace a culture of aligning to the needs of the customer to understand each customer's state-of-mind in real-time.



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