SAS® Visual Text Analytics
Combine the power of natural language processing, machine learning and linguistic rules to reveal insights in data

Overview
Text analytics solves a variety of business problems: managing and interpreting notes, assessing risk and fraud, and incorporating customer feedback for early detection of problems. Applications across all industries are continuously expanding.

SAS Visual Text Analytics combines text mining, contextual extraction, categorization, sentiment analysis and search within a modern and flexible framework.

Prepare data, visually explore topics, extract entities and facts, analyze sentiment, build text models and deploy them within existing systems or processes. Quickly analyze large volumes of unstructured data using predefined templates for deeper insights, faster and easier than ever before.

Benefits
- **Uncover emerging trends and spot new opportunities for action.** Automatically convert unstructured data into meaningful insights that can further feed machine-learning and forecasting techniques to predict opportunities for timely exploitation.
- **Gain value more efficiently with a comprehensive, self-service environment.** SAS Visual Text Analytics provides a flexible environment that holistically supports the entire analytical life cycle - from data preparation and visual exploration to analysis and deployment. Enhance business processes and quickly get more value from all your data.
- **Fuel collaboration and information sharing in an open ecosystem.** Tackle a variety of analytical use cases to support a single initiative. Whether you’re a data scientist preparing data, a domain expert applying linguistic rules or an IT person deploying models, collaboration is possible at all levels. This unified solution integrates seamlessly with existing systems and open source technologies.
- **Make decisions faster using automation.** Intelligent algorithms and natural language processing (NLP) techniques automatically extract relationships and patterns, eliminating the need for manual analysis. Refine machine-generated results with subject-matter expertise to improve model accuracy.

Capabilities
Natural language processing and contextual extraction
The first step in the text analytics process is natural language processing (NLP), which performs linguistic analysis to help a machine “read” text. SAS Visual Text Analytics uses NLP to analyze and transform text into formal representations for text processing and understanding. This includes word and sentence tokenization, segmentation, stemming, compound decomposition, part-of-speech tagging, named entity recognition and semantic parsing. Natural language understanding (NLU), a subset of NLP, enables contextual understanding of content. NLP capabilities such as entity and fact extraction, categorization, search and summarization are critical to developing artificial intelligence (AI) applications.
Machine-generated topic detection
Topics are collections of terms that describe and characterize a main theme or idea. SAS Visual Text Analytics uses machine-learning techniques to derive topics automatically from natural groupings of important terms in your documents. You can explore trends of different topics in text and see how they change over time.

Rule-based methods
Despite its advances, machine learning still can’t capture specific nuances and complexities of language ambiguity. You need linguistic rules to understand slang, detect sarcasm and infer intention. SAS Visual Text Analytics actively learns from the data as it comes in and combines machine learning with business knowledge to generate new rules for improved accuracy. Output from text analysis generates automated insights. These insights can kick off immediate actions, or you can fine-tune them with subject-matter expertise.

Collaboration in a multi-user environment.
The SAS Platform offers unparalleled breadth and depth of analytical support, which is integral to collaboration and information sharing. As part of the platform, SAS Visual Text Analytics fosters teamwork by providing a workspace to share best-practice pipelines and methods. You can call SAS Text Analytics using Python, R, Java, Lua and RESTful APIs to augment third-party applications with the power of SAS.

Native support for multiple languages
SAS Visual Text Analytics supports a wide variety of languages through dictionaries and linguistic assets created by native language experts. It includes out-of-the-box analysis functionality for 30 languages: Arabic, Chinese, Croatian, Czech, Danish, Dutch, English, Farsi, Finnish, French, German, Greek, Hebrew, Hindi, Indonesian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Slovak, Slovene, Spanish, Swedish, Tagalog, Turkish, Thai and Vietnamese.

Text analysis at the source
With SAS, users can deploy models in Hadoop, in stream and at the edge. In-memory, in-database and in-stream technologies process ever-growing volumes of data with extreme speed and accuracy. Real-time streaming analytics maximizes data value and accelerates the data-to-decision timeline. Organizations can reduce the gap between when information is received and when it’s acted upon.

Smart search applications
Add intelligence to your queries by categorizing documents, associating entity relationships and building a contextual search application for exploration within text, using machine learning and semantic analysis. With SAS Visual Text Analytics, you can move beyond simply returning results for specific keywords to extracting related trends with increased relevance to your unique business applications.