BABELSTREET

PRODUCT BRIEF

Event Extraction for Precise Search and Alerts

BABEL STREET ANALYTICS

Law enforcement officers, intelligence agents, legal professionals, and more all need immediate and accurate information on events that have occurred or will occur. And they need to search and extract event information from massive volumes of unstructured text.

Consider a law enforcement officer searching news reports for information about a suspect. They enter a search term such as "John Smith arrest." Unfortunately, searching by keywords is of limited value because simple keyword searches only find what's in the input query without a broader understanding of the meaning of the words or their context.

As a result, a keyword search might find some instances of critical events but miss others. Or the search term above could return an overwhelming number of unrelated results (false positives), such as on John Smith's cardiac arrest, while completely missing relevant information on John Smith's apprehension, detainment, or suspected involvement.

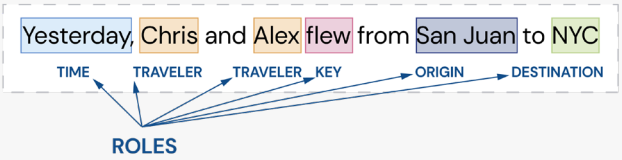
By contrast, Babel Street Text Analytics leverages context and the meaning of words to extract events and dramatically increase the relevance of search results. And it works across massive volumes of unstructured text.

Cost-effective Model Training

The complexity, ambiguity, and variety of events make an accurate, general purpose event extractor unrealistic, so the AI models must be custom trained.

What is an event?

An event consists of a "key phrase" and the entities who fill "roles" that give the details of who, what, when, and where. Event extraction models detect these specific activities or actions involving entities and can include optional time and location attributes.



Event model training has previously taken human annotators months of tagging thousands of examples to cover the wide variety of event expressions so that models could accurately machine learn just one type of event.

Babel Street Text Analytics overcomes the labor-intensive and cost-prohibitive barrier to event extraction by accelerating the training of machine learning models with Model Training Suite, an annotation system that creates training data exponentially faster than traditional methods.

Model Training Suite does this by:

- Leveraging interim models: The training is bootstrapped by tagging a tiny number of documents to build an interim model
- Efficient annotation: Active learning technology prioritizes the untagged documents that the interim model shows least confidence in; therefore, a greater variety of events are tagged sooner
- Computer-assisted tagging: The interim model pre-tags unannotated documents so that human annotators only correct errors, which is faster than hand-tagging every event
- Iterative model evaluation: The system continually measures the model's accuracy, allowing annotation to stop as soon as accuracy is achieved

Model Training Suite makes customizable event extraction reliable and repeatable, and requires minimal annotated training data to reach reasonable accuracy. Once deployed, a human-in-the-loop framework lets the model continually learn from analysts using it.

A demonstration of our event extractor is available with two pre-trained models for "meeting" and "travel" events. Currently, users can train event models to process text in eight languages — Arabic, Chinese, English, German, Hungarian, Japanese, Korean, and Russian.

Key Benefits

Babel Street Text Analytics:

- Alerts you to relevant happenings that need further investigation
- Provides the vital "who, what, when, and where" details of each event
- Enables investigators to operate effectively in all languages, even ones they don't know
- Flags events which didn't happen so they aren't placed on a timeline
- Links multiple references to specific people, places, and organizations within a document
- Enables you to rapidly train custom event extraction models

Example of an extracted "assassination event"

"Assailants struck Libyan Prime Minister Abdulhamid al-Dbeibah's car with bullets early on Thursday, but he escaped unharmed, a government source close to him said, amid intense factional wrangling over control of the government."

Then, the system would notify the analyst about:

Event:	assassination attempt
Event keyphrase:	struck
Attack Target:	Libyan Prime Minister Abdulhamid al-Dbeibah
Attacker:	assailants
Date/Time:	early on Thursday
Article Metadata:	Story by Reuters, Updated 6:30 AM EST, Thursday, February 10, 2022

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