

SUMMARY INFORMATION PROVIDED BY SELLER  
AND PRESENTED BY OCEAN TOMO BID-ASK™ MARKET

# DATA PROCESSING PATENTS – LOT 74



OCEAN TOMO®  
BID-ASK™

## **Groups 1 ,2, 3, 4: Concept and Association Technologies and Machine-Learning**

The patents in this group provide a new framework for natural language and information processing based on a discovery in the relation between linguistic structure and information structure, with methods for automatically acquiring conceptual knowledge from unstructured text data, and for building powerful and effective applications that are far beyond the capabilities of conventional methods including most of the current-stage machine-learning methods. Some example applications include the following.

For a piece of text data, such as a sentence or a paragraph, the methods can determine how much information it contains about a given topic as compared with other sentences. One application of this is in searching documents/webpages by concept, and determining the relevance based on the amount of information about a topic without requiring the documents to contain a specific keyword.

For example, if a search query contains the keyword “camera”, documents that do not necessarily contain the keyword “camera”, but contain relevant information about camera, can be retrieved and ranked based on the amount of information contained in each of the documents. Another example is that for two text contents such as “Your CPU may overheat” and “My machine has plenty of RAM to run multiple programs”, a relevance can be determined between the two text contents even though they do not share any keyword. From a user’s expression “I went to Africa and Europe last year to see some new places”, the methods can infer that the user has an interest in travel. From a user’s expression “I am looking for something that can take pictures”, the methods can infer that devices such as camera, smartphone, telescope, etc., can likely be the answers.

Seven of the 16 patents in this group further provide linguistic and cognitive processing methods for identifying relations between words and phrases in a way that can be more powerful than the currently popular methods such as using word vectors (word2vec) as open-sourced by Google in 2013. In fact, the scope of the claims encompasses the general method of using vectors to represent words or phrases, with a priority date as early as 2009.

A fundamental issue in the field of artificial intelligence in general, and natural language processing in particular, is in accurately capturing the information carried in a piece of text, or in other words, in understanding the text with an acceptable degree of accuracy.

The patents in this group provide groundbreaking and effective solutions to these problems by first identifying and quantitatively measuring the amount of information in a text, and providing underlying supporting technologies through automated learning from unstructured, or free form text data, both have been extremely challenging tasks in the history of natural language processing.

## **Groups 5, 6: Topic Modeling, Text Analysis and Search Engine Technologies**

Patents in this group provide methods for building highly effective text analysis and document search and management products. The methods are based on many years of linguistic and cognitive research in how the human language carries information and how users digest information encoded in text data.

The technologies can generally be called “attribute-based topic modeling”, (based on linguistic-informational attributes, in contrast to the traditional and current statistical-based topic modeling, such as LDA, LSA, SVD, etc.), with easy-to-implement methods and algorithms that can automatically identifying major and minor topics in a text content, no matter whether it is a single sentence or a collection of millions or billions of content.

Powerful products can be built in areas such as enterprise and personal document management in file systems, cloud storage, and collaboration tools; enterprise search engines that can be far better in relevance than the current products in the market such as Lucene/Solr, Elastic Search, Google Search Appliance, etc.; automatic document and email categorization/grouping/foldering, topic-based and context-based search engines, automatic content summarization and tagging, and various others. Working demos are available.

When the methods are applied to processing large amounts of social media data, this type of topic models can effectively extract hidden insights inaccessible from the surface data, making what would otherwise inaccessible data now digestible and actionable. When coupled with patents in another group for sentiment analysis, powerful applications can be built in the areas of business intelligence and customer satisfaction with product quality far surpassing any existing products in the market.

# CONTACT

## Outside China Contact:

**Layna Guo**

+1 312 327 8179

lguo@oceantomo.com

**David Ghorbanpoor**

+1 414 350 4864

David@OTI.com

**Established in 2003, Ocean Tomo, LLC provides industry leading financial products and services related to intellectual property including financial expert testimony, valuation, strategy consulting, investment services, risk management products, innovation management services and transaction brokerage. Ocean Tomo assists clients – corporations, law firms, governments and institutional investors – in realizing Intellectual Capital Equity® value broadly defined.**

Our Opinion, Management, and Advisory Services are built upon more than two decades of experience valuing intellectual property in the most rigorous of venues – State, Federal and international courts. Our financial, market and technical experts provide a unique understanding of the contributory value of proprietary innovation. This is the cornerstone of our business. This insight permeates every practice.

Headquartered in Chicago, Ocean Tomo has offices in Greenwich, Houston, San Francisco and Shanghai. Ocean Tomo is creator of the live public open cry auction marketplace for intellectual property.

**Collectively, Ocean Tomo professionals have:**

- Executed over 1000 engagements involving IP worth in excess of \$10 billion;
- Successfully closed transactions where disruptive technology played a key role, with cumulative value in excess of \$750 million;
- Conducted over 300 valuation engagements and 500 financial damages expert testimony engagements.

**Ocean Tomo assists clients – corporations, law firms, governments and institutional investors – in realizing Intellectual Capital Equity® value broadly defined.**



OCEAN TOMO®  
BID-ASK™

**OCEANTOMOBID-ASK.COM**