

PERATON'S MACHINE LEARNING ANALYSIS OF UNSTRUCTURED DATA

Peraton's machine learning (ML) tool, Integrated Global Media Analysis (IGMA) provides ML-enabled global communication and event analysis to help extract operationally relevant information from vast amounts of data being generated and collected from different sources.

IGMA utilizes advanced text exploitation to provide deeper understanding from multisource, unstructured text—revealing patterns and trends to facilitate threat explanation and anticipation.

Combining IGMA with strong analytical tradecraft enables analysts to provide both qualitative and quantitative analysis to inform strategic development, planning, execution and assessment of the customer's mission.

BENEFITS

Our IGMA tool and the human and machine teaming process enables:

- **Machine-driven collection of open-source communications in near real-time**
- **Machine-initiated data enrichment through NLP coding of sentiment and themes**
- **Discovery of action/reaction trends, identification of an adversary's strategy and target audiences, development of audience insights and measurement of performance/effectiveness**
- **Highly customizable coding schemes and levels of granularity in reporting**
- **Analyst-driven, actionable insights**

This powerful human and machine teaming model helps establish causal relationships by enabling a comprehensive understanding of collective events and their connection to narratives in the information environment—yielding mission-accelerating benefits including:

- Improved speed, agility and efficiency in collection and analysis of text
- Increased ability to quickly assess sentiment and derive insights
- Increased focus of analytical manpower on interpreting the data

METHODOLOGY

IGMA automates translation of native tongue media through natural language processing (NLP) providing capabilities that align with customer requirements such as theme analysis, sentiment analysis and geolocation.

The tool utilizes advanced commercial off-the-shelf (COTS) tools combined with traditional analytical tradecraft and machine-based solutions to gather and analyze data from publicly available media outlets.

The human and machine teaming process allows analysts to apply dynamic and iterative learning to models to ensure accurate sentiment and theme analysis of traditional communication and social media. The analytic process reduces noise in social media allowing analysts to uncover relationships between individuals, organizations and networks.

IGMA's user-friendly interface includes a dashboard that allows analysts to tailor the tool's capabilities to meet mission needs. This user-driven domain customization and visualization eliminates the need for specialized technical expertise to customize solutions. The dashboard harnesses a unique analytic methodology that scales and expands an analyst's ability to track changes in sentiment and themes for early indicators and warnings.

WHY PERATON

We bring decades of experience providing data-driven analytics in support of strategic planning across the Intelligence Community and the Department of Defense—including nearly two decades of experience performing multisource analyses of unstructured data for the federal government.

Peraton’s efforts include providing intelligence to support understanding of Chinese and Russian strategic programs—from space and counter-space to behavior in the maritime and cyber domains—and to assist in the fight against violent extremist organizations.

The graphic below depicts the IGMA tool and the human and machine teaming process—from data collection to insight development.

