



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

Status:

Laureate

Year:

2013

Organization Name:

Opera Solutions Government Services

Organization URL:

www.operagov.com

Project Name:

Open Source Threat Assessment Platform

Please select the category in which you are submitting your entry:

Safety & Security

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

The internet and associated channels have added immense amounts of data available and the growth is accelerating exponentially. Along with benefits, safety and security challenges such as organized online threat incitement against persons and property have also emerged. Law enforcement and private security personnel can be overwhelmed with the amount of information, and investigation and prevention may adversely be effected. Opera Solutions Government Services has created a software Open Source Threat Assessment Platform (TAP, patent pending), using state of the art interactive technology to take full advantage of man + machine force multiplication for addressing this challenge. TAP analyzes open source content and prioritizes it to indicate potential threats to an organization. It helps government and corporate security organizations

maximize their analysts' time to proactively monitor developing threats and investigate crimes. TAP searches online content in 55 languages using 85M+ entities to determine 420M+ word association recommendation ontology across languages, using machine learning to understand word context across each language. Unlike Google Translate, which does simple translation, TAP uses sophisticated computational linguistics to understand context and nuances that simple translations miss. TAP functionality includes an alert feature that highlights threats within a defined subject of interest and context, and an interactive analyst's workstation, where a security analyst can interact with the machine portion of TAP to do a deep dive analysis of relevant threats surfaced by the alerts feature. TAP's innovations include: Analyzing 200M+ websites every 30 minutes (near real time). Searching for online content in 55+ languages. Running analytics on content to understand sentiment, threat type, context, anomalies, and influence to classify threat as low, medium, or high risk. Prioritizing analysts' time on the important issues and inclusion of human judgment at key decision points thus truly taking advantage of the man + machine force multiplication.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

Opera Solutions Government Services developed the Open Source Threat Assessment Platform (TAP) and first deployed it in 2012. Refinements to the core technologies of TAP are ongoing, and customizable to market needs and technology advances.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

Ongoing refinements to the core technology are being incorporated into current and future product development.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

72 hours before a major protest in Spain, TAP detected important information about pending protest affecting a financial services client, written on online public forums in Spanish: A local press article accusing the client of harming working-class citizens. A tweet about a bomb threat in close proximity to client's office in Spain. An incitement on another social media channel that rioters "pay a visit" to

The image features a gold medal with a ribbon on the left side and a large, light green laurel wreath graphic on the right side. The medal has the word "HONORS" visible on its edge. The laurel wreath is a stylized representation of a branch with leaves, symbolizing achievement or honor.

the company address in Spain. Each of these items by themselves may not have constituted a significant threat to the client, which would have triggered the company's security personnel to act on protocols for that day. However, the combination of these signals meant that the threat was significant. TAP delivered the threat assessment alert to the company in advance and provided the client valuable time to take precautions, so that they were able to tell employees to work in a different location on protest day. When the violent protest happened, it caused physical damage to nearby property. However, the clients' employees were unharmed due to the advanced warning from TAP and implementation of safety and security protocols by the client's security personnel. The significant benefit of TAP was to surface and deliver timely significant physical threat alerts from a sea of open source data of an event on the European continent to client's security personnel located in the continental U.S. who did not understand Spanish foreign language or its linguistic nuances, or the dynamic local political, social and cultural upheavals. TAP also identified the relevant threat information surrounding the U.S. Embassy attack in Benghazi. TAP's timely discovery provided advanced alerts and with intelligence analyst's deep dive resulted in detailed contextual relationship network and correct understanding of the situation days before corrected media reports.

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

TAP is an innovative product that is unique in the threat assessment marketplace. It is a notable advancement in the field because it can assess threats in near-real time, across many languages with machine learning powering contextual understanding of threat assessment. No human can read 200M+ websites in a lifetime, much less in 30 minutes, and a simple Google Translate based search would miss linguistic nuances separating real threats from hate speech. TAP is also unique in the analytics science, which serves as the core of the innovation. Building on the research of multiple Ph.D. scientists, TAP uses sophisticated linguistic ontology and searches in native languages to understand the context of online content. Because of machine learning at its core, TAP is able to detect threats that other tools would miss. In terms of organizations, the focus of TAP is safety & security, especially for national security and for private organizations. However, the underlying technology can be modified or further developed to add value to other general areas of Open Source monitoring. Because TAP can monitor millions of websites, blogs, tweets and any publicly available online content, it can be utilized to monitor effectiveness of responses to humanitarian crises, political unrest, civil liberties abuses, and healthcare issues.