



A biosurveillance application that enables infectious disease analysts to monitor non-traditional information sources for infectious disease threats.

GRITS analyzes textual data sources (e.g., online news outlets, ProMED reports, and blogs) by identifying, extracting and succinctly visualizing critical public health information and suggesting possible associated infectious diseases. Via the web-interface, infectious disease analysts can examine dynamic visualizations of GRITS' analyses, perform powerful queries of an index of over 250,000 infectious disease reports, and explore related historical infectious disease emergence events. The GRITS API can be used to continuously

analyze information feeds and large collections of data and enables GRITS technology to be easily incorporated into larger surveillance systems. GRITS is a flexible and pluripotent tool that contains robust Natural Language Processing (NLP) and machine learning algorithms that can be modified to conduct sophisticated report triaging, expanded to include customized alert systems, or tailored to address other surveillance needs. In conjunction with human expertise, GRITS is a valuable tool for infectious disease surveillance.

Diagnosis Text Map Timeline Detailed Diagnosis

Confidence	Disease	Characteristics
0.73	Ebola	
0.73	Hemorrhagic Fever	

'Ebola Case Is Reported in West Africa' (news article, 16 Jan 2016) describes a resurgent case of Ebola in which a woman's illness was not diagnosed until after her death despite her having gone to at least one hospital.

Ebola causes generic symptoms, like fever, seen with common illnesses like malaria and needs to be identified by blood testing. You report that Bruce Aylward of the World Health Organization says rapid tests capable of diagnosis within minutes with just a few drops of blood have not been used because they are prone to false positives. But patients like the one described received diagnoses only after presenting to multiple hospitals and exposing numerous people to infection.

GRITS is fundamentally sophisticated NLP and machine learning software that has been tailored to address disease surveillance needs. The GRITS technology could be applied to a plethora of topics. For instance, GRITS could be of value to the financial sector. Textual sources are rich with indicators of investor sentiment, and are often monitored by NLP tools. GRITS could be tailored to detect clusters of investor sentiment indicative of an emerging financial crisis, or market shift.