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**Title:** How text-mining could improve surveillance systems?

**Author:** Mathieu Roche

**Abstract:**

The ability to identify emerging and re-emerging diseases is challenging for the health domain. In this context, event-based surveillance (EBS) gathers information from heterogeneous data sources, including online news articles. EBS systems integrate text-mining methods to deal with huge amounts of textual data. This talk focuses on the use of text-mining and multidisciplinary approaches in order to mine news data dealing with the health domain. These data science approaches are integrated in an EBS system called PADI-web (Platform for Automated extraction of Disease Information from the web). PADI-web dedicated to animal health surveillance tackles disease-based and symptom-based surveillance. To address these issues different text-mining methods associated with labeled textual datasets are integrated in the main steps of EBS systems: data acquisition, information retrieval (i.e. identification of relevant texts), epidemiological information extraction, information to communicate to end-users. These methods are also adapted in other domains like Food security by mining heterogeneous data.

**Bio:**

Mathieu Roche, PhD, is a senior research scientist at CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement) and TETIS research unit (Territoires, Environnement, Télédétection et Information Spatiale) in France. Currently he is co-leader of MISCA (Modélisation de l'Information Spatiale extraction de Connaissance et Analyse), a research group at TETIS dealing with Data Science. Between 2005 and 2013, he has been an Associate Professor (Maître de Conférences) at the University Montpellier 2, France. Mathieu Roche obtained a PhD in Computer Science from University Paris 11 (Orsay) in 2004. He defended his HDR (Habilitation à Diriger des Recherches – Accreditation to supervise research) in 2011. Mathieu Roche led several academic and industrial projects in text-mining. Currently he is involved in 2 European projects (H2020 MOOD, Desira ASSET) dealing with One Health and Agroecology domains. He has supervised 19 PhD students since 2006.