

# Current Challenges to the role of Intelligence Analysts.

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## **Abstract:**

*So far, the work of intelligence analysts has typically involved carrying out search strategies in different sources, obtaining data, processing it and analysing it with the help of –mostly local, client based- analytical tools and finally being able to efficiently communicate the results of this analysis to those capable of making decisions upon it.*

*However, in a context characterized by exponential global growth of information and multiplicity of formats, channels and structures, together with an increasing capacity to process this information (powerful data and text mining tools, expanding storage availability and distributed infrastructures), the current role of the intelligence analyst is being redefined; Nowadays, it is necessarily becoming more complex and polyhedral as in order to deal with these issues, it has to embrace additional tasks such as building analytical and predictive models (Machine Learning algorithms) and managing increasing volumes of permanently flowing data form radically different nature (sensor data coming from connected devices, financial data, genomics data, GIS data, multimedia, etc.); this situation is challenging traditional analytical processes, normally restricted to only a few sources –scientific and technical- and using (sciento)metrics that are only valid in the context of this scope of sources. The new profile of intelligence analysts demands additional functions as it is somehow shifting from a position of being predominantly an eventual searcher and a software user to becoming a permanent scout, a data wrangler, integrator, modeller and sense maker -all at the same time- and thus it is increasingly requiring expertise in programming skills enabling him/her to parse, retrieve, analyse and integrate different kinds of data and modelling it for a multiplicity of purposes. Moreover, in a context of collaborative work and networked intelligent systems (open access, open innovation and blurred organizations), flexible workflows and reproducibly of research are required; that is, analytical processes can be configured based on a given studied data set and then applied to other data sets while keeping a traceability regarding the analytical process that has been followed. Analysis can then be shared and reused and new models built-up on top of existing ones through incremental knowledge acquisition processes. Under these environments, open source statistical languages such as R, Python and others, providing a wealth of libraries and packages to tackle specific problems –and strongly backed by supporting communities- are increasingly used. Finally, yet another perhaps even higher threat –to all industries, actually- comes from the advances in Artificial Intelligence. Machines are now able to autonomously make data driven decisions through iteratively testing algorithms to find the best ones (deep learning) and even delivering a narrative to their results (Natural Language Generation). What position must then be reserved for the intelligence analyst to occupy in the future in order to continue bringing added value to the organization?*

## **Main Topics:**

***The role of Intelligence analyst, Open Source Programming Languages and reproducible research, competitive intelligence and data science,***

## **Key-words:**

***Competitive Intelligence, Data Science, Open Source Statistical Programming Languages, Machine learning, reproducible research, Intelligence analyst***

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