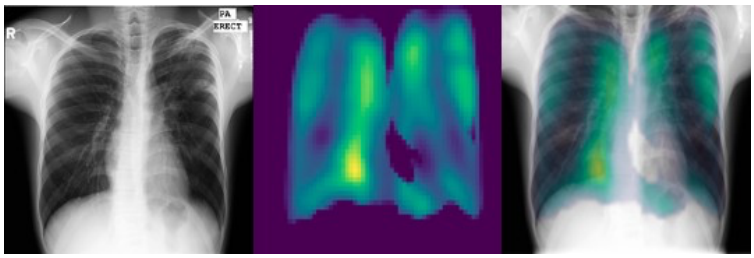
Tuberculosis detector

What's new: engineered on the basis of deep neural networks, Topazium implemented a platform which detect and localize radiological signs indicative of tuberculosis on a frontal chest radiography.

Key insights: the system can equally process images obtained by photographing X-rays using mobile devices (cell phones or tablets), scanned chest radiographs or digital images.

How it works: frontal chest X-ray images are uploaded into Topazium's platform. It outputs the probability of abnormal radiological signs indicative of tuberculosis along with a heatmap localizing the suspected regions.



Probability of tuberculosis: 97%

Results: the system is able to detect images with evidential radiological signs of disease, whilst correctly categorizing those deemed as "negative". Accuracies are comparable to expert radiologists.

Why it matters: Tuberculosis is one of the top causes of global death and the leading cause from a single infectious agent. Although chest X-rays provide important clues to tuberculosis early diagnosis, there are no radiological features which are in themselves pathognomonic of the infection, adding an additional difficulty for non-trained practitioners on detecting the disease. Topazium's system could aid radiologists or other health care staff reading radiographic films, in tuberculosis systematic screening, infection control, and reduction of the cost of case detection within triage algorithms.