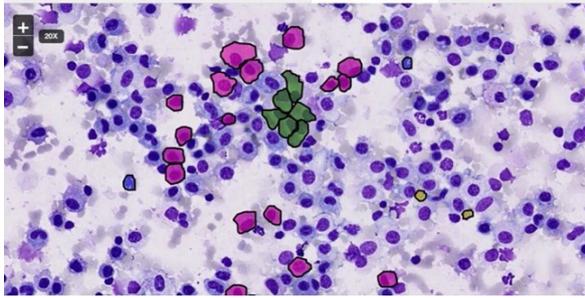


Storing, annotation & analysis of large scale images



Category: Computer Hardware & Software

Reference: TDO0075

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Abstract:

A software system capable of rapid analysis on large-scale images originating from various sources. Applications can be found in biological analysis or medical imaging. The platform is flexible and can be adapted to other types of imaging analysis, and is also vendor and file independent.

Description:

Analyzing large-scale images creates specific problems that can be overcome by the technology offered. The software addresses specific issues that can be encountered in the analysis of large, high-resolution files with large numbers of instances. The software allows for fast image file handling, sorting, previewing and then recognizing, sorting and counting patterns, giving significant performance advantages over that which is currently available.

Developed and optimized for medical image analysis, the technology provides a file format and vendor independent tool to: Provide Spot detection; RNA Scope counting; Follicle counting; Tumor/necrosis segmentation; IHC quantification; IHC counting; Zebrafish phenotype recognition. Other specific analysis can easily be developed based on the current platform.

The platform is file format and thus vendor independent and is open to extract statistics and export data into XLS. The platform also offers a RESTful API interface and allows other software to communicate easily for integration purposes.

Innovations and advantages of the offer:

A web based solution which offers a combination of proprietary data-mining algorithms & various open source libraries some of which are space originated algorithms. This allows the end-user to annotate the image and to data analysts to automate the analysis of medical images or other large scale images where specific patterns need to be recognized and/or analyzed

Application:

Medical Imaging

Biological research

Pharma research

Archeology

Geology – Mineralogy

Hyperspectral Imaging (rare gas detection / pollution)

Earth observation (forests, roads extraction, high voltage, clouds, soil erosion, ...) – Satellite image classification

Astronomy - morphological classification of objects into spiral/elliptical galaxies

Analysis of various images such as heat maps, observation images, geospatial

Space Heritage:

The same technology developed for analyzing space images of the infinitely large is applied to the infinitely small world at the microbiological or cellular level.

Due to a lack of good imaging software to handle large scale images available on the market, a solution was developed based on various open source space/GIS software. The new User Service infrastructure (ngEO) of ESA is entirely based on Open Source software including the same approach and routines. By incorporating GIS technologies developed for handling space data, the providers were able to produce a useable prototype for biologists at the GIGA in a few months instead of several years.

Various space/GIS technologies were imported such as: storing geometric features; computation on geometric features (perimeter, area, distance ...); clustering of geometric features; geometric features compression; image tiling protocols; image viewer (tile compatible) + annotations drawing tools + layers

Broker Comments:

The company is in the start-up phase and has received its first order in April 2014. Potentially BIC incubation will be envisaged.

The solution is built on libraries of the Open Geospatial Consortium and their own proprietary data-mining techniques.

This technology description was downloaded from www.esa-tec.eu