



## LIFEx: a freeware for radiomic feature calculation in multimodality imaging to accelerate advances in the characterization of tumor heterogeneity

- C Nioche, F Orlhac, S Boughdad, S Reuzé, J Goya-Outi, C Robert, C Pellot-Barakat, M Soussan, F Frouin, and I Buvat. [Cancer Research 2018; 78\(16\):4786-4789](https://doi.org/10.1158/1078-0432.CCR181625)

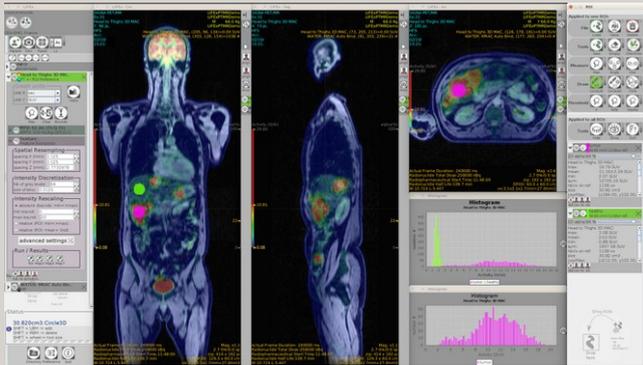


Image viewer of mono or multi-modalities (PET, SPECT, CT, MRI, US)



Textural features: radiomic features reflecting tissue heterogeneity



MTV: metabolic tumor volume over the whole body



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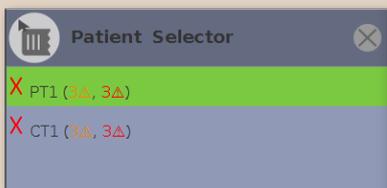
## LIFEx complies with the Image Biomarker Standardisation Initiative (IBSI)

<https://pubs.rsna.org/doi/abs/10.1148/radiol.2020191145>



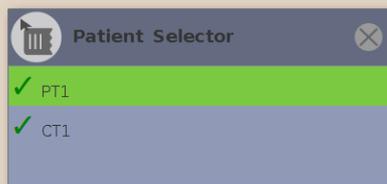
## A labeling protocol now allows users to easily annotate images and associated regions.

- C Nioche, F Orlhac, I Buvat.



Patient selector before filling database

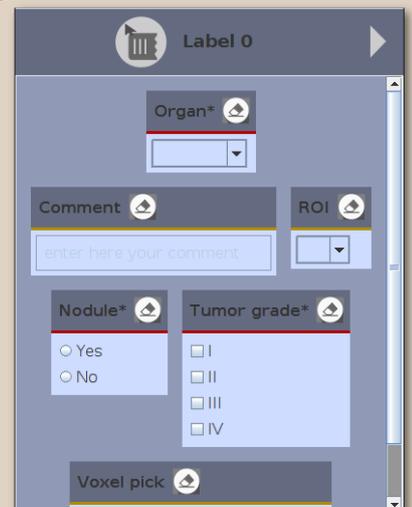
A customizable module displays defined questions/answers for application-specific annotation and filling a database. This database can then be exploited for machine learning or deep learning purposes.



Patient selector after completion of the annotation task

The questions (and possible answers) are pre-defined in a script built beforehand by the user.

The execution of the script automatically loads the images and all menus needed for the annotation.



The annotation process is followed by a controller that monitors and displays the progress of the script. It can be interrupted and resumed at any time.