LITO (Orsay, France) recruits Scientists in
Artificial Intelligence and Medical Imaging for oncology applications

Keywords: artificial intelligence, radiomics, deep learning, medical imaging, PET, CT, oncology, lung cancer.

LITO recruits high-profile researchers, data scientists and engineers with a solid background in artificial intelligence, data science and/or medical imaging to contribute to several funded research projects.

The topic: In oncology, a challenge for physicians is to identify the right treatment for the right patient at the right time. This is especially the case for lung cancer, where the identification of biomarkers predictive of treatment response or patient survival is essential to optimize patient management. In practice, physicians use different types of information for selecting a treatment, mainly from clinical, biological, histological and medical imaging data. Medical imaging, both morphological (CT scans) and functional (PET scans), is currently an essential component in patient management, for diagnosis, therapeutic evaluation and follow-up. However, although medical images are systematically acquired during the patient's care, they are not yet fully exploited. The assumption that medical images contain much more information than is currently extracted has led to the development of a new discipline, *Radiomics*, which has grown rapidly since 2010. Given the complexity and wide variety of data available to physicians, we assume that AI approaches can assist doctors to identify the best therapeutic strategy to be adopted for each patient. In this context, LITO develops advanced quantification and data analysis methods based on artificial intelligence (AI) techniques to support personalized medicine.

The lab: The laboratory of Translational Imaging in Oncology (LITO) is a research unit (U1288) supported by Inserm (=French NIH) and Institut Curie, the 1st cancer center in France. LITO includes about 30 researchers, physicists, engineers, MDs, PharmDs, and technologists. LITO is world-renowned for its work related to radiomics and AI dedicated to medical images, particularly in PET, and develops the LIFEx platform (www.lifexsoft.org), a freeware fully compliant with the Image Biomarker Standardization Initiative (IBSI) guidelines.

The applicant profile: The successful applicant will have a strong expertise in image analysis and/or machine learning/AI, have good communication and organizational skills, and a master or a PhD in a relevant area (medical imaging, applied mathematics, data sciences). Very good programming skills are required, including knowledge of Python. Candidates are expected to be highly motivated, autonomous and fond of working in a multi-disciplinary environment.

Starting date: from December 2021 – January 2022
Contract duration: from 1 to 2 years (possible open-ended contract afterwards)
Salary: depending on candidate past experience
LITO web page: https://www.lito-web.fr/en/
Contact: to apply, please send extended curriculum vitae with research and programming experiences and a detailed list of publications, a cover letter stating your interests and future goals, and references to: fanny.orlhac@curie.fr and irene.buvat@curie.fr

References from the lab:
- Wallis et al. An 18F-FDG-PET/CT deep learning method for fully automated detection of pathological mediastinal lymph nodes in lung cancer patients. *Eur J Nucl Med Mol Imaging* 2021, in press.
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- Capobianco N et al. Deep learning FDG uptake classification enables total metabolic tumor volume estimation in diffuse large B-cell lymphoma. *J Nucl Med* 2021, 62: 30-36.
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