



**HAL**  
open science

## Clinica, an open-source software to facilitate neuroimaging studies

Matthieu Joulot, Nicolas Gensollen, Ghislain Vaillant, Ninon Burgos, Olivier  
Colliot

► **To cite this version:**

Matthieu Joulot, Nicolas Gensollen, Ghislain Vaillant, Ninon Burgos, Olivier Colliot. Clinica, an open-source software to facilitate neuroimaging studies. Colloque Français d'Intelligence Artificielle en Imagerie Biomédicale (IABM), Mar 2024, Grenoble, France. hal-04653352

**HAL Id: hal-04653352**

**<https://inria.hal.science/hal-04653352>**

Submitted on 18 Jul 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

# Clinica, an open-source software to facilitate neuroimaging studies

Matthieu Joulot<sup>1</sup>, Nicolas Gensollen<sup>1</sup>, Ghislain Vaillant<sup>1</sup>, Ninon Burgos<sup>1</sup>, Olivier Colliot<sup>1</sup>

<sup>1</sup> Sorbonne Université, Institut du Cerveau - Paris Brain Institute, CNRS, Inria, Inserm, AP-HP, Hôpital de la Pitié Salpêtrière, Paris, France



**ARAMIS LAB**  
BRAIN DATA SCIENCE



www.clinica.run

## Mission statement

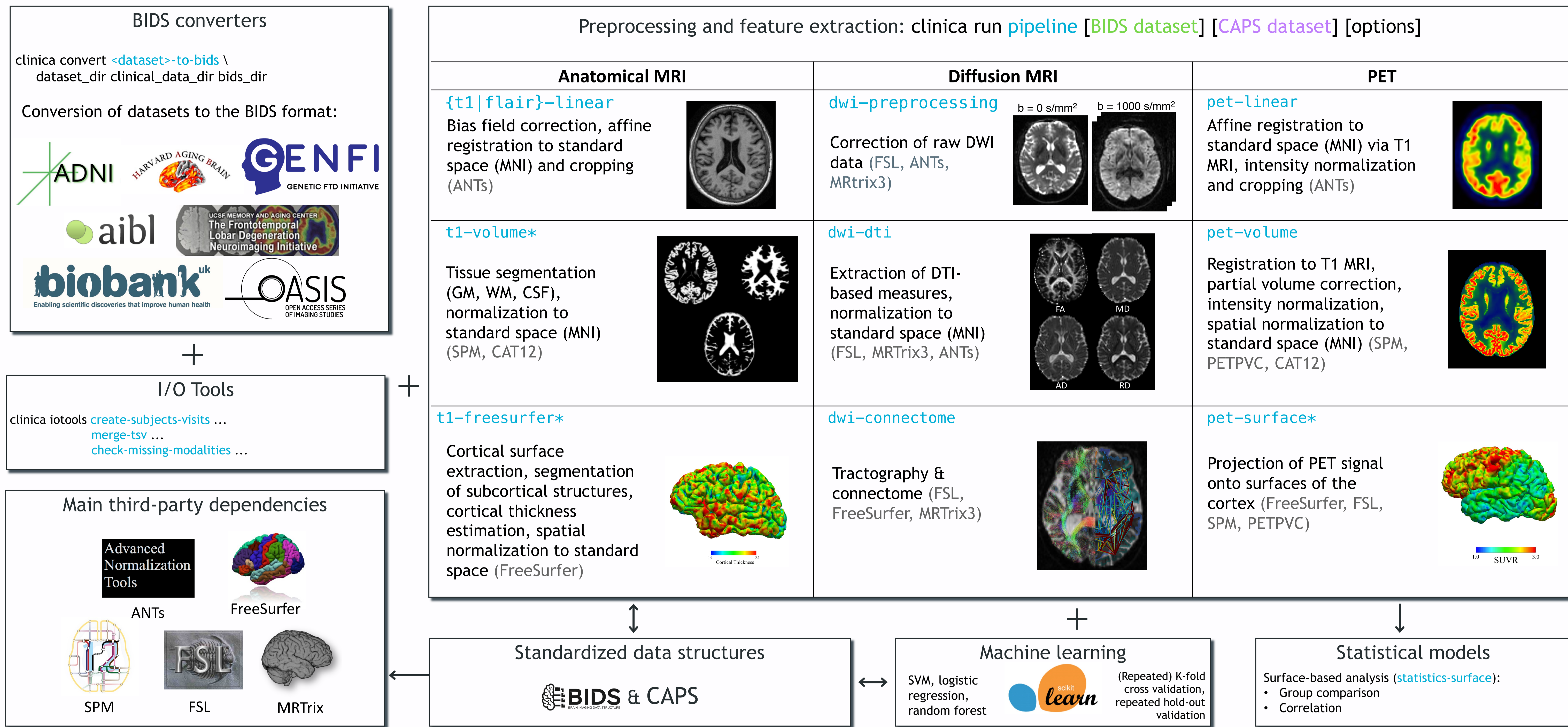
Clinica is an open-source software platform for neuroimaging studies. It is designed to help researchers spend less time on data management and processing, easily share data and results, make their research more reproducible and contribute to Open Science.

## Target audience

- Neuroscientists or clinicians conducting clinical neuroscience studies involving multimodal imaging.
- Researchers developing advanced machine learning algorithms.

## Overview of Clinica

@clinica\_run



## Example: processing from unorganized neuroimaging data to Pytorch tensors using Clinica and ClinicaDL



## Work in progress and future works

**Quality control:** Explore methods and processes to provide quality control feedback

**Pipelines:** Development of new longitudinal pipelines

**Clinica:** Development of a web-based dashboard for pipeline monitoring and quality control

**Provenance:** Adherence to the BIDS provenance standard to improve traceability and reproducibility

