

Post-doctoral Position on “Exploring Variability in Medical Image Segmentation: New Metrics and Frameworks”

Context & Motivations : This postdoctoral position is part of the MEDITWIN project, a major French national initiative focused on exploring how virtual twins can enhance the quality of healthcare, making it safer and more accessible to all. MEDITWIN will enable healthcare professionals to simulate potential future scenarios for individual patients, offering new possibilities for personalized treatment and care.

The project combines both fundamental research and applied development, focusing on the creation, customization, and practical use of virtual twins in healthcare settings.

Post-doc Topics : The aim of the postdoctoral project is to develop innovative methodologies for assessing the quality of anatomical structure or pathology reconstructions from medical images. A critical but often overlooked issue in this domain is the inter- and intra-rater variability in image segmentation, which complicates the quantitative evaluation of segmentation algorithms beyond commonly used metrics like the Dice score or Hausdorff distance.

This project seeks to explore statistical frameworks that introduce novel segmentation metrics, particularly in cases involving multiple reference segmentations. The effectiveness of these metrics will be evaluated through several practical applications, providing a more robust means of performance assessment in medical image analysis.

Localisation : This 24 month post-doctoral position will be supervised by [Dr Hervé Delingette](#) within the [Epione research team](#) at Inria in Sophia Antipolis, France. Competitive salary with comprehensive social benefits (national healthcare, health insurance, etc.), along with a dynamic and stimulating work environment.

Required Competences

- PhD degree and strong experience in statistical learning, and biomedical imaging are required
- Solid programming and IT skills are necessary (Python or C++, bash scripting).
- Strong communication skills with fluent English (written and spoken)

Contact Persons:

Please send a CV and motivation letter to:

[Hervé Delingette](#) (Inria)