Proposition de recherche doctorale

Semantic Tools for the Multi-Observer Interpretation of High-Content Medical Images

Mots clés :

- **Directeur de thèse** : Daniel RACOCEANU
- **Co-encadrant(s)** :
- **Unité de recherche** : LABORATOIRE D'IMAGERIE FONCTIONNELLE
- **Ecole doctorale** : École Doctorale Informatique, Télécommunications, Électronique de Paris
- **Domaine scientifique principal**: Divers

Résumé du projet de recherche (Langue 1)

Recently, histopathology -the microscopic examination of tissues for the study of diseases- has seen the introduction of several new tools such as slide scanners and virtual slide technologies creating the right conditions for the imminent adoption of telepathology as a new clinical standard. Telepathology bears the potential to revolutionize the medical practice with many foreseeable applications in medical training, collaborative diagnosis and medical research. This groundbreaking change brings to the table a number of new scientific challenges such as the management of the semantics associated to the multi-observer interpretation of very large, high-content images, and their use by data analysis tools for computer-aided diagnosis.

Résumé du projet de recherche (Langue 2)

During his PhD thesis, the candidate is expected to tackle the aforementioned new scientific challenges. In particular, he will work on innovative ontologies for the semantic representation of images able to handle the multiplicity of point-of-views and the 2.5-dimensional aspect (multi-scale, multi-z) of the images, and on related reasoning/inference algorithms able to deal with the disambiguation of conflictual interpretations. The applicational framework of this thesis will be provided a telepathology consortium for the diagnosis of several cancers involving academic and industrial partners, and medical collaborators in 27 major hospitals in France.

Informations complémentaires (Langue 1)

Position located in Paris - 3 years Laboratoire d'Imagerie Biomédicale, Sorbonne Universités, UPMC Univ Paris 06, CNRS UMR 7371, INSERM U1146, Faculté de Médecine Pierre-et-Marie-Curie, Pitié-Salpêtrière 91 boulevard de l'Hôpital, 75634 Paris cedex 13, FRANCE with a potential collaboration with IPAL Singapore URL: http://www.ipal.cnrs.fr/

Informations complémentaires (Langue 2)

Requirements: - Master's degree (or equivalent) in mathematics or computer science - Solid background in discrete mathematics - Proficiency in C++ and Java - Strong conceptualization capabilities Workgroup: Interaction with the FlexMIm workgroup in IPAL and in France. Please do not hesitate get in touch with us for more details: - Daniel RACOCEANU: daniel.racoceanu@upmc.fr