INSTITUT NATIONAL
DE RECHERCHE
EN INFORMATIQUE
ET EN AUTOMATIQUE

INRIA

centre de recherche **RENNES - BRETAGNE ATLANTIQUE**

Title:

Semantic annotation of resources in the context of multimodal medical image simulation

Environment:

This work will be conducted within the national project VIP (PI. T. Glatard, CNRS, France; http://www.creatis.insa-lyon.fr/vip/). The work will be conducted in the Unit/Project VISAGES U746 (INSERM/INRIA) at INRIA Rennes

We refer the candidates to the following contact people:

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Position opening/duration: Fall 2011 for 12 to 14 months

Context:

The Virtual Imaging Platform (VIP) project targets multi-modality, multi-organ and dynamic (4D) medical image simulation. Integrating proven simulation software of the four main imaging modalities (MRI, US, PET and CT), the platform copes with interoperability challenges among simulators, addresses compatibility issues between organ models and provides transparent access to computing and storage resources.

To tackle interoperability issues, the semantics of models and simulation tools will be made explicit; this semantics sharing will be achieved using annotations referring to a set of consistent ontologies describing the organ models, the simulation data processing, the simulation tools and the simulated images. Associated repositories and software interfaces will allow easy experiment design and assisted simulator and model integration.

Project:

The person to be enrolled will participate in the development of the ontologies to be used for the annotation of resources (ontology of biological object models, ontology of simulators and simulation tasks, ontology of simulated data). The general methodology will be based on the OntoSpec method. The project will reuse achievements obtained during the Neurolog Project.

The work will be organized as follows:

1. Conception and documentation of the ontologies
2. Development of software exploiting the knowledge imbedded in the ontologies
3. Assessment and feedback from implementation (iterative approach)

Keywords: semantic annotation, ontologies, medical imaging, simulation

Competence and Profile:

Required: XML, RDF(S), OWL, ontologies, Protégé, Java, Tomcat, web services, SQL

Appreciated but not required: image processing, medical imaging

Foreign languages: english

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