Extending UML for Conceptual Modeling of Annotation of Medical Images

Authors:
Mouhamed Gaith Ayadi
Riadh Bouslimi
Jalel Akaichi

Abstract

Imaging has occupied a huge role in the management of patients, whether hospitalized or not. Depending on the patient's clinical problem, a variety of imaging modalities were available for use. This gave birth of the annotation of medical image process. The annotation is intended to image analysis and solve the problem of semantic gap. The reason for image annotation is due to increase in acquisition of images. Physicians and radiologists feel better while using annotation techniques for faster remedy in surgery and medicine due to the following reasons: giving details to the patients, searching the present and past records from the larger databases, and giving solutions to them in a faster and more accurate way. However, classical conceptual modeling does not incorporate the specificity of medical domain specially the annotation of medical image. The design phase is the most important activity in the successful building of annotation process. For this reason, we focus in this paper on presenting the conceptual modeling of the annotation of medical image by defining a new profile using the StarUML extensibility mechanism.
References

- Igor Francisco Areias Amaral, Content-Based Image Retrieval for Medical Applications; October, 2010.
- W. D. Bidgood. The SNOMED DICOM microglossary: controlled terminology resource for data interchange in biomedical imaging; DOLAP; 1998.
- Stéphane Clinchant, Julien Ah-Pine, Gabriela Csurka, Semantic Combination of Textual and Visual Information in Multimedia Retrieval; 2011.
- Selic, B.; A systematic approach to domain-specific language design using UML. In: 10th IEEE Int. Symposium on Object and Component-Oriented Real-Time Distributed Computing (ISORC&apos;07), pp. 2–9 (2007)

Index Terms

Computer Science

Software Engineering
Keywords
Annotation of medical images    UML extension    UML profile