Abstract

Data protection in EHR application needs to be enforced more strictly than in other application areas [1, 2]. Since the 1960s, data protection of personal health information was and is still of high concern. The details of where information flows, who has access to the data and for what purpose are of major importance. Considering this and bearing in mind that in grid computing it is not only simple data sharing, but rather it is the sharing of distributed resources like algorithms, storage, computing power, etc., it is necessary to study closely the aspects of grid security and to find suitable solutions to enforce it. Phenotypic data in a patient electronic medical record can lead to identify for example whether the subject has a particular infection or not. Analyses methods for such identification can be simple statistical procedures, like in [4], or machine learning systems – artificial neural network – like in [5]. Anonymizing procedures are not enough for protecting the data without loosing the scientific value of this
data. For instance, sharing high-resolution imaging datasets online may be risky; a full reconstruction of the face using computerized 3D techniques is indeed possible [6-8]. Sharing of medical 3D imaging datasets has already been reported in some pre grid environment applications [9, 10], anyhow, the risk of this sharing is not well studied so far. The major problem is that we still cannot enforce a dependable security policy in grids; i.e. we cannot assure that administrators, developers, or other staffs do not have an access to the medical data.

Reference

- Evison, M.P., Computerised 3D facial reconstruction. assemblage - the Sheffield graduate journal of archaeology, 1996. 1(1).

- Tomita, Y., et al., Artificial neural network approach for selection of susceptible single nucleotide polymorphisms and construction of prediction model on childhood allergic
asthma. BMC Bioinformatics, 2004. 5(1): p. 120.


Index Terms

Computer Science          Grid Computing

Key words

EHR          Grid Computing          SOA

Distributed system