



MediCloud – Telemedicine System Based on Software as a Service (SaaS)

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MediCloud is a robust, web-based (cloud system) platform for supporting medical interactions including rounds. In many situations the discussion of a case among MDs from different profiles and locations is crucial for patient outcome. Studies show that the concentration of specialists in big cities in Brazil is one of the causes of the lack of adequate medical diagnosis and treatment in underserved areas. MediCloud will allow general practitioners at remote or rural areas to discuss cases (rounds) and request second opinions to their expert colleagues located in reference hospitals. A software framework was developed to support the telemedicine application, providing the basis for security communication and user's hierarchy. The software algorithms enhance the medical discussion providing useful information to users such as photos, symptoms, treatments and applied drugs of previously discussed cases. The software implements technics like Natural language processing (NLP), more specifically a named-entity recognition (NER) algorithm. NER is a subtask of information extraction that seeks to locate and classify elements in a text (user's post) into predefined categories. The created NER algorithms use linguistic grammar-based techniques as well as statistical models (machine learning). The information exchanged on the forum is processed by the software that creates a knowledge database to provide value-added information to medical discussions. The software analyses uploaded text and photos, identifies keywords and crops photo's areas to compose the knowledge database. For each user's post, the software seeks the knowledge database for similar cases. The business model will be developed during the pilot phase of the project, when ISCMPA – Santa Casa de Porto Alegre hospital will be leading medical discussions as a reference center. ISCMPA will exchange medical information with three health care centers in the rural area of the Rio Grande do Sul State.

Keywords: «cloud» platform, medical collaboration, general practice, rural health care

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