

## WEB BASED SERVICE FOR OPTIMIZING MEDICAL DATA USING MULTI-AGENT

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### ABSTRACT

One of the most important issues in e-healthcare information systems is to optimize the medical data quality extracted from distributed and heterogeneous environments, which can extremely improve diagnostic and treatment decision making. Our project proposes a multi-agent web service framework based on service-oriented architecture for the optimization of medical data quality in the e-healthcare information system. Based on the design of the multi-agent web service framework, an Evolutionary Algorithm (EA) for the dynamic optimization of the medical data quality is proposed.

The framework consists of two main components; first, an EA will be used to dynamically optimize the composition of medical processes into optimal task sequence according to specific quality attributes. Second, a multi-agent framework will be proposed to discover, monitor, and report any inconsistency between the optimized task sequence and the actual medical records. To integrate heterogeneous healthcare information systems and to support healthcare organization decision making, this project presented a multi-agent framework based on SOA architecture for healthcare information systems.

**KEYWORDS:** Evolutionary Algorithm (EA), Healthcare Information Systems