

A Task-oriented Multi-Source Heterogeneous Data Fusion Framework for Healthcare and Elderly Care Integration

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INTRODUCTION

The continuous growth of the elderly population and the rapid expansion of the smart elderly care service market have led to the accumulation of large amounts of valuable healthcare and elderly care data resources.

RESEARCH QUESTIONS & OBJECTIVE

- ✓ How can multi-source heterogeneous data resources from hospitals, elderly care institutions, and other stakeholders be integrated to form standardized, comprehensive, and accurate health and care records for the elderly?
- ✓ How can healthcare and elderly care data fusion address both the technical feasibility of *being able* to integrate data and the willingness of stakeholders to *want* to integrate data?

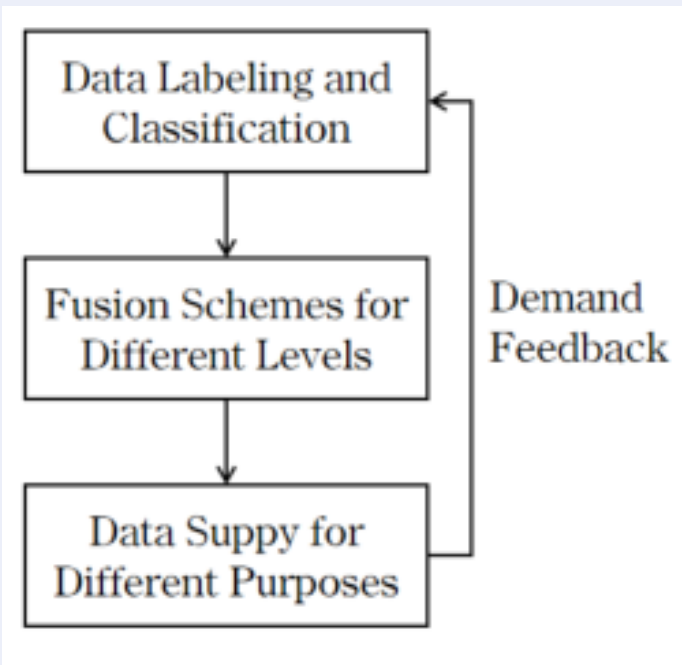
METHODS

Mixed-methods

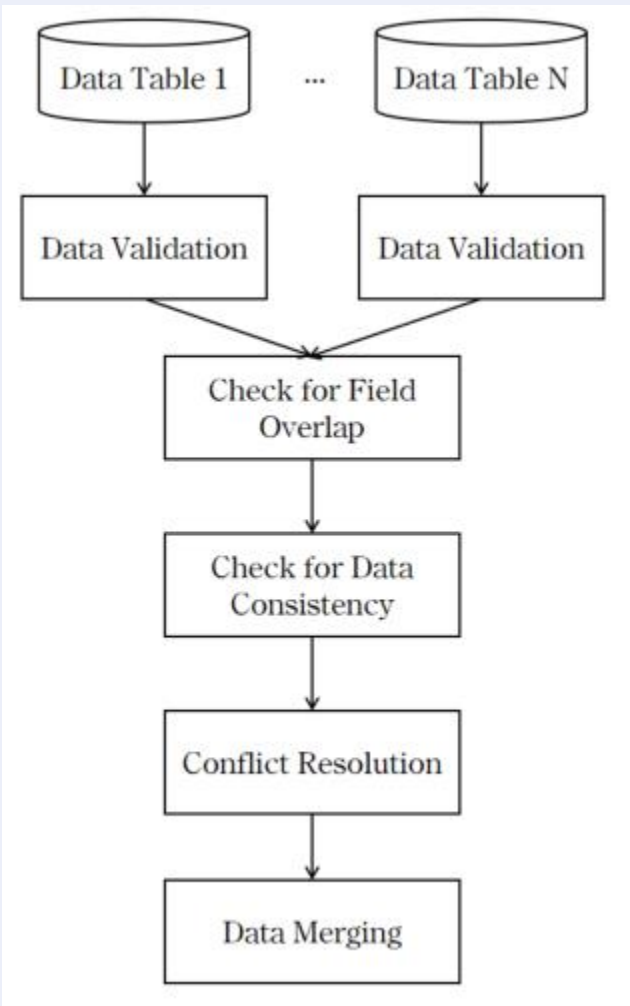
A task-oriented multi-source heterogeneous data fusion framework

Real-world data validation

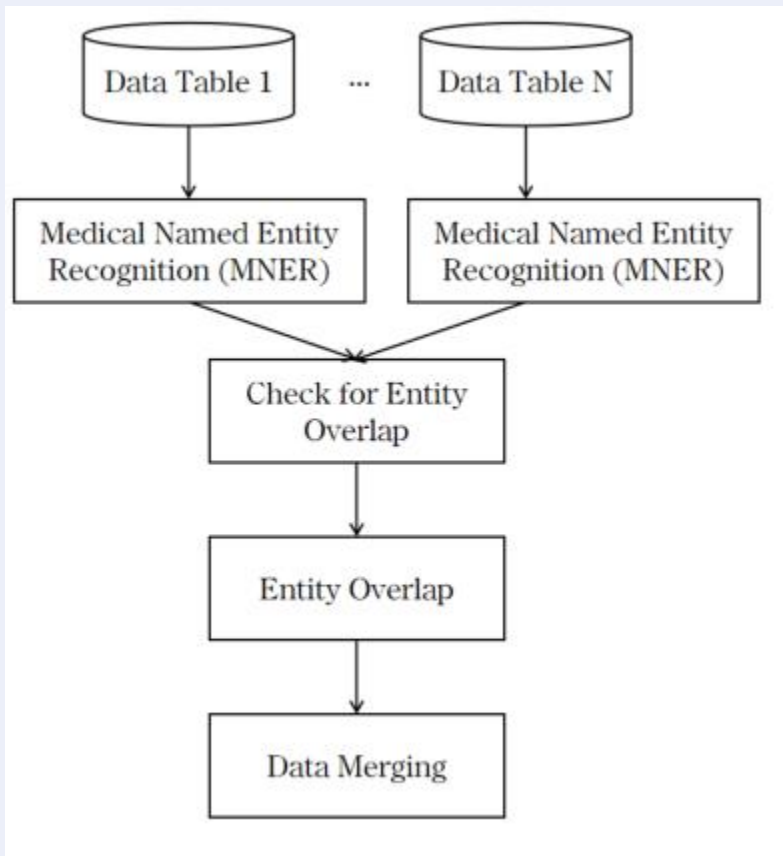
RESULTS



Task-Oriented Multi-Source Heterogeneous Healthcare and Senior Care Data Fusion Procedure



Data Fusion Flow Chart of Base Information



Disease and Symptom Data Fusion

More Data Fusion Flows...

Data Ablation Experiment: Conducted to evaluate the role of elderly healthcare archives in improving the performance of downstream tasks.

Tasks	accuracy
Results of Basic Information Integration	>95%
Results of Entity Alignment	>82%
Results of Disease Prediction	>81%

CONCLUSION

By overcoming challenges related to data silos, heterogeneity, and operational barriers, this data fusion framework improves the practical application of data sharing and supports the development of data-driven elderly healthcare services.

