ABSTRACT
Presently, knowledge discovery and cohesive decision-making capabilities for biomedical applications are hampered by significant gaps in technology for multi-modal data analytics. We are addressing this issue by developing a novel learning framework, called Data Analytics for Medicine using SEMi-supervised Learning (DAMSEL), that can intelligently combine important data-rich resources and technologies, which in turn will leapfrog current analytical capabilities in a more comprehensive, flexible, and responsive computational environment. DAMSEL is being developed using two biomedical applications: breast cancer and traumatic brain injury.

METHODS
- Text Analysis
- Image Analysis
- Semi-Supervised learning Framework
- Computational Scalability
- Integration/Analytics

OBJECTIVE: Develop a comprehensive, flexible, and responsive computing framework that incorporates ability to analyze multi-modality data using semi-automated learning environments

Objectives/Tasks
1. Develop analytical, semi-automated learning framework and tools for processing multi-modality data
2. Address performance, portability, and scalability of framework by leveraging computing resources and restructuring computationally-intensive algorithms
3. Validate system performance in terms of knowledge accuracy and system responsiveness using two disparate medical applications

Anticipated Results
Integration of images and disorganized text documents into coherent, searchable archives

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