LaMIA – Large-scale Medical Image Analysis

Creation of an infrastructure for large-scale medical image analysis or large-scale data analysis in general, mainly to provide solutions for the management of large amounts of data produced daily in modern hospitals and also in many other organizations.

Realization

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Information

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Keywords

- Big Data
- Medical image analysis
- Data analysis

Our skills

- Image analysis and retrieval
- Optimization (algorithm, optimization and parameter selection)
- Infrastructures (offline computing and storage, online computing, bandwidth)
- Efficiency assessment

Valorization

Transfer of developed techniques to several research projects on medical image analysis
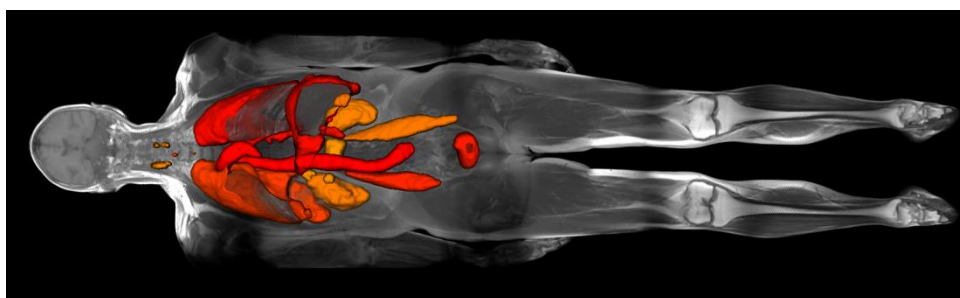
Partnership

- HUG

Funding

RCSO HES-SO

Schedule

12/2011 – 11/2013

The main objective of this project is to develop a **large–scale analysis framework** enabling transferring 2D visual data analysis techniques to very large scales but also to 3D, 4D and multimodal imaging with high efficiency, and by increasing the scalability of existing tools and algorithms to large amounts of data.

The goal is to **reduce the execution time of image analysis tasks** and enhance interactions with end–users by selecting the right underlying infrastructures such as centralized servers, distributed clusters or even cloud computing. Bandwidth, storage capacity, processor power and main memory may all have their limiting effects and choosing an infrastructure should be facilitated with the results of LaMIA.

Although the developed techniques have an application focus on medical image analysis and retrieval, they are expected to provide **tools for managing visual information** in a large variety of domains from fundamental research to industrial applications.