Details

Aachen Center for Biomedical Image Analysis,Visualization and Exploration (ACTIVE)

ACTIVE is an interdisciplinary research centre at RWTH Aachen University that develops and provides algorithms for the analysis and visualization of highly complex scientific data repositories. Such data are produced by new imaging and data acquisition technologies in the natural and life sciences. Methodically, the centre develops and improves efficient methods for (semi) automated image processing, pattern analysis, numerical simulation and parameter estimation, and for visual and interactive data exploration. By bringing together experts for data analysis and management from Electrical Engineering, Computer Science and Mathematics with groups that produce vast amounts of complex data, highly synergistic research collaborations can be established. Since interdisciplinary research projects usually lack infrastructural support to be successful, ACTIVE provides this crucial infrastructure by hosting and funding image processing and data analysis experts who provide dedicated support for interdisciplinary research projects.

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52074 Aachen
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To website

Host Institution

RWTH Aachen
Templergraben 55
52056 Aachen
Nordrhein-Westfalen
Deutschland
https://www.rwth-aachen.de/

Scientific Domain

Primary Subjects:
- Biology
- Medicine
- Computer Science, Electrical and System Engineering

Secondary Subjects:
- Agriculture, Forestry, Horticulture and Veterinary Medicine
- Chemistry
- Physics
- Mathematics

Category

Biomedical Imaging Facilities

Scientific Services

ACTIVE develops and provides algorithms for the analysis, visualization and exploration of highly complex scientific data repositories, which originate from new imaging and data acquisition technologies in the natural and life sciences. INCIDE develops efficient methods for (semi) automated data analysis, data mining, numerical simulation, parameter estimation, and for visual and interactive data exploration. INCIDE provides support for different types of problems: Standard problems that can be approached using well-established software tools (e.g. open-source tools listed here: http://www.germanbioimaging.org/wiki/index.php/Workgroup6/SoftwarePackages, or commercial tools such as Matlab, Amira, Imaris). Training and support is provided in using some of the software packages, which is mainly supplied by student assistants. More elaborate problems that cannot be easily solved using standard approaches, but require modification of existing algorithms, i.e. by modifying or creating a plugin for a software package. We have limited capabilities to hire student helpers who then can help implementing the actual

plugins. Research problems which involve development of new techniques at a scientifically challenging level for image processing and analysis. This type of support requires scientific work by a senior staff scientist at PhD or PostDoc level.

Scientific Equipment

Keywords

- bioinformatics
- image processing
- high-throughput analysis
- interactive visual exploration
- quantitative analysis
- modeling of dynamic systems
- highresolution, multidimensional data
- time-dependent data
- Efficient data analysis
- dynamic biological systems
- scientific visualization
- Exploration of large information spaces
- multimodal data analysis

Networks

GermanBioImaging
https://www.gerbi-gmb.de/

GI Section "Visual Computing in Biology and Medicine"
https://www.fg-medvis.de/

Users per annum

Internal Users:
External Users in total:
External Users:
External Users in the EU:
External Users outside of EU: