SCIENCESPRINGDAY

FCT FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

Department of Informatics

Visualization tools and techniques

MULTIMODAL SYSTEMS

CENTER FOR INFORMATICS AND INFORMATION TECHNOLOGIES

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Computer Graphics and Visualization

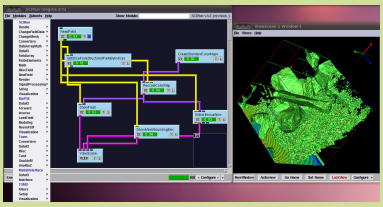
GPU Programming

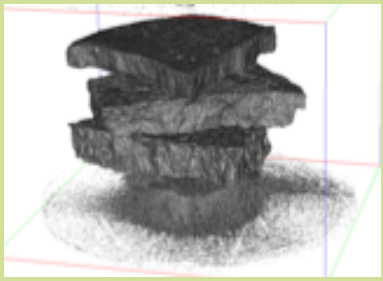
Objectives

Design and evaluation of algorithms and data structures suitable for information and data visualization.

Development of computer graphics and visualization systems to help solving real problems.

Current application areas of interest are material science and medicine.





Methodology

Development of faster and interactive algorithms for scientific visualization applied to composite material characterization problems. It relies on GPU parallel programming in heterogeneous computing architectures.

Problem Solving Environment (PSE) based on the SCIRun framework but including appropriate modules to perform highly-demanding computations of 3D tomographic data sets.

Development of a visualization system to model and visualize anesthesiology medical procedures.

Expected Results

In the scope of Tomo-GPU FCT/MCTES-funded project, delivery of a PSE dedicated to the characterization of reinforcement population in composite materials.

Interactive exploration and visualization of very large datasets in commodity high performance desktop computers.

Visualization system to help training anesthesiology practitioners.

Funding:

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PTDC/EIA-EIA/102579/2008 "Problem Solving Environment for Materials Structural Characterization via Tomography"

PEst-OE/EEI/UI0527/2011