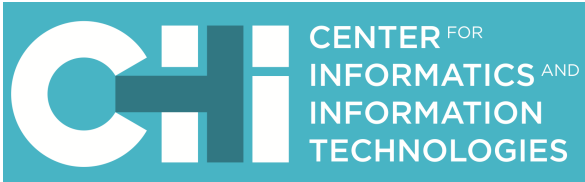


DEPARTAMENTO DE INFORMÁTICA

## Graphics and Visualization

MULTIMODAL SYSTEMS



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Computer Graphics  
And Interaction  
GPU Programming  
Games

## Objectives

Mobile context-aware techniques for serious, leisure and entertainment applications.

Automatic content generation and adaptation for video games.

Applications of Computer Graphics and Scientific Visualization tools and methods to solve real problems

## Methodology

Explore the combination of sensor data streams in mobile devices to develop applications ranging from driving assistance systems, automatic capturing of rodoviary features, context-aware leisure guidance and entertainment.

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

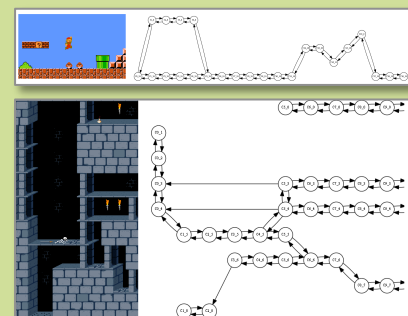
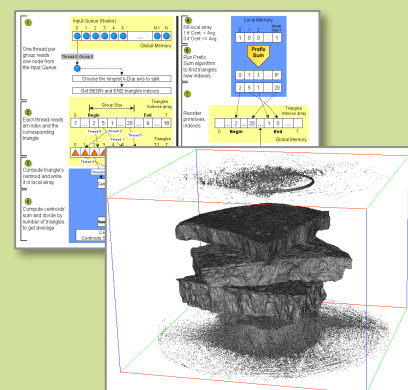
Procedural content generation for platform videogames and adaptation techniques through graph analysis.

## Expected Results

Road features extraction and surveying from crowd sourced data: road networks updated in real time, geo-referencing of road signs and traffic lights.

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

Framework to automatically setup generated game levels that are created and specifically tailored to the user's profile (skills and preferences).



Funding: