

Multimedia Applications Development

Person in charge: Maria TROCAN

Prerequisite: C++ programming language

Organization: 24hrs lectures, 24 hrs project, overall workload: 100 hours

Evaluation: Exam, project

ECTS: 4 credits

Context

Multimedia brings together all the tools and techniques enabling the creation, analysis, editing and processing of media content; combining text, sound, images, videos and animations. The development of new media, the innovation in the audiovisual sector (TNT, 3D technologies) has led to a sharp increase in the demand for polyvalent professionals. There are numerous applications in this growing sector, such as the creation and development of web applications, video and sound applications (voice synthesizer, adaptive and powerful encoders for audiovisual content), virtual reality (3D simulation, video games, special effects for cinema and television), applications of modern indexing and storage technologies.

Objectives

Producing prototypes in high-level languages makes possible to quickly realize the majority of multimedia processing software. Nevertheless, the performances demanded by the processing of multimedia data make it necessary to use languages allowing (even imposing) low-level access to the resources of the machine.

Skills

The aim of this module is to familiarize students with C ++ implementation specifics and the use of scientific libraries for:

- Design and realization of hardware or software systems using sounds, images and/or videos data.
- Implementation and development of tools for the transmission of multimedia content.

Knowledge

This module enables students to develop the following concepts and skills:

- **Concepts**
 - Pointers
 - Classes in C ++
 - Dynamic Polymorphism in C ++
 - Compilation, environment, and use of a virtual OS
 - Use of scientific libraries
- **Know-How**
 - Understand a compilation environment in C ++.
 - Know how to use and modify a library implemented in C ++ (openCV).

Pedagogical Approach

Lectures, practical work, project.

References

Lecture notes.

OpenCV Tutorial

<http://www.bogotobogo.com/cplusplus/files/OREilly%20Learning%20OpenCV.pdf>