

EyesWeb: an open platform for multimodal creation

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What is EyesWeb ?

- A platform: graphical programming environment
- Multimodal: Audio, video and graphical processing
- Interactive
- Extendable: It is possible to add some new objects
- Based on OpenCV
- Platform for EU project like MEGA
- Developed by DIST for the platform with some external contributions (like the DEI-CSC Library) for the libraries

▶ Picture

Getting EyesWeb

- Run only on Microsoft Windows
- <http://www.eyesweb.org>
- Developers: VisualC++ SDK

Platforms

Concept

- “Visual Programming”:
 - Blocks
 - Connections
 - Patches

Other Platforms

- Generic: Simulink
- Audio/Video:
 - Max family: Max/MSP, Pure Data (Pd), jMax
 - others graphical: Isadora, vvv toolkit
 - non graphical: CLAM (C++), FAUST



Principal components of the EyesWeb system

- The blocks or modules
- The datatypes
- The manager
- The scheduler

What is a Block

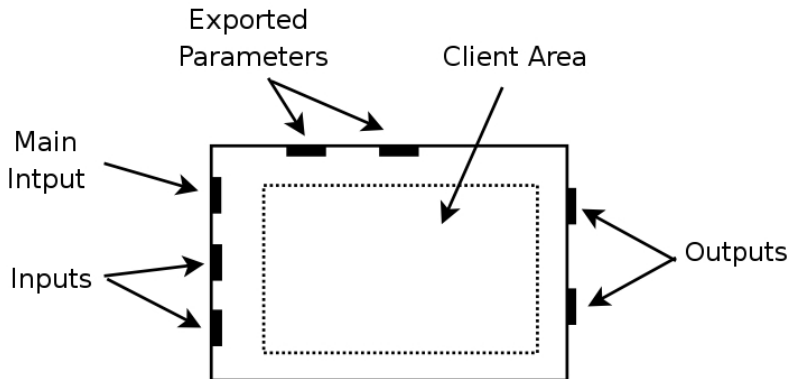
Overview

- Generate or process the data
- Basic set provided with EyesWeb
- Can be created by the users (in C++)
- there is no difference between supplied blocks and user ones

Communicate through:

- Inputs
- Outputs
- Parameters

Block view



The different types of blocks

Active

- Can request the system to schedule its activation
- Two modes:
 - polling: activated periodically
 - interrupt: at decide at every execution step when it will be activated
- generally input blocks (acquire data)

Passive

- Can't request themselves to be activated
- Activated when there is new data on their *Main input*
- The majority of the blocks
- Process and filter the data acquired by the active blocks



The Datatypes

- Keep the data value exchanged between blocks
- Basic set provided with EyesWeb
- Can be created by the users
- there is no difference between supplied blocks and user ones

Examples

- Scalar, Matrix
- Audio buffer
- Midi message, Midi buffer
- Image
- 1DFftBuffer

The Manager

- Contains the informations of the connection between the blocks
- Verify the correctness of the connections
- Is in charge of the visualization of the blocks (inputs/outputs, name, parameters, etc...)
- Creates the schedulers

The Scheduler

- Activates periodically the blocks
- Handles a certain number of blocks
- Calls the *Execute* function of the block when it is called

The different modes: Design Time

- Patch can be freely modified
- Instances of the modules (block and datatypes are created)
- Check the datatype compatibility between outputs and inputs
- Mostly a graphical mode

The different modes: Initialization

- Patch is prepared for execution
- The *Init* and *Check* methods are called
- Initialize the modules (blocks and datatypes)
- The system is not started

The different modes: Run Time

- The system is started
- The *Start* method is called
- The blocks are periodically activated by the scheduler calling the *Execute* method

The GUI

- Overview of the GUI
- The paramChanger Objects
 - Edit
 - Slider
 - ComboBox
 - CheckBox
 - Command
- The blocks

The libraries

- Generic
- Math
- Audio
- Midi
- Imaging
- Network

EyesWeb and Pure Data

- You can use the power of the two platforms
- Communicate through OSC

Expressive Director

- Done for the MEGA project
- Change the expressive intention of a *neutral* execution in real time
- The expressive interpretation are not recorded, it is not a morphing

Gosht in the cave

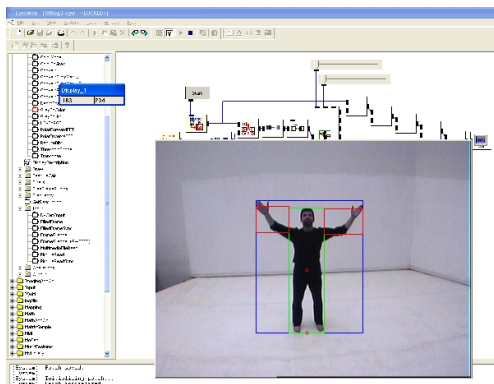
- Last public event of the MEGA project
- complex game setup
- 6 computers
- 4 EyesWeb, 2 Pd, 1 3D server, 2 3D player

What's next ?

EyesWeb 4.0 (still a beta version)

- Totally rewritten
- more platform independent (GNU/Linux version ?)
- GUI and kernel separated
- Sub-patches

A screenshot



Return

