

Modeling and development of interactive and networked artworks with open-source software and hardware

In this session, we put special emphasis not on those digital art works that have been created by digital tools, but on those that embed and function through computer hardware and software. For example, we consider sensors, actuators, and high-level computer programming for artists. In this context, the objective is to provide the required practical skills on basic computer engineering techniques. For this purpose, we present readily available technologies and design methods. The session consists of two parts: 1) philosophy of computer as part of the physical environment and as part of an artwork, 2) obtaining and employing off-the-shelf software and hardware components. In addition, we are going to introduce the open source programming tool Processing, as well as related software and hardware efforts. This session is very suitable for artists who never had training in computer engineering, and those who wish to formally learn the basic computer modeling and development techniques in the context of digital art tools.

Instructors

Konstantinos Choriantopoulos, Ionian University, Greece
Giannis Georgiadis, Art and Technology

Related bibliography

Randall Packer (Editor), Ken Jordan (Editor), Multimedia: From Wagner to Virtual Reality, Expanded Edition, W. W. Norton & Company

Casey Reas (Author), Ben Fry (Author), John Maeda (Foreword), Processing: A Programming Handbook for Visual Designers and Artists, The MIT Press

Resources for digital artworks

<http://rhizome.org/art>

<http://processing.org/exhibition>

Video tracking in a few steps

1. Download Processing from <http://www.processing.org/download/index.html> and follow installation instructions
2. Download a video tracking library (BlobDetection and JMyron are recommended) from http://www.processing.org/reference/libraries/index.html#computer_vision and follow the installation instructions. In addition, you would also like to download a few examples from the respective sites. BlobDetection is good if you wish to track things that are either bright or dark. JMyron is ideal if you wish to track objects that have a particular color.
3. Connect a simple web camera (Logitech Quickcam messenger or express are fine) and install camera capturing library: If you have MacOS then download macan from <http://webcam-osx.sourceforge.net> and follow installation instructions. If you have Windows then download VDIG from <http://www.eden.net.nz/7/20071008> and follow installation instructions. If drivers are installed correctly then you should see the live video feed from the camera using the included video capturing application. This step is much easier if you use MacOS because Processing works with Quicktime, which is part of all Mac installations. Instead of the internal laptop camera, you would like to get an external camera, which provides flexibility during tests.
4. Open the Processing environment and load one of the examples you have downloaded before. Run it. Read the code. Modify it.